

FINAL  
ENVIRONMENTAL IMPACT STATEMENT

**NORTH FORK CASINO**  
NORTH FORK RANCHERIA OF MONO INDIANS  
FEE-TO-TRUST AND CASINO/HOTEL PROJECT

**APPENDICES  
VOLUME III**

**FEBRUARY 2009**

**Lead Agency:**

U.S. Department of the Interior, Bureau of Indian Affairs  
Pacific Region, 2800 Cottage Way, Room W-2820  
Sacramento, CA 95825-1846

**Cooperating Agencies:**

National Indian Gaming Commission  
1441 L. Street NW Suite 9100  
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California Department of Transportation - District 6  
1352 W. Olive Avenue  
Fresno, CA 93728

Madera Irrigation District  
12152 Road 28-1/4  
Madera, CA 93637

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# APPENDICES

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## NORTH FORK RANCHERIA CASINO AND HOTEL FINAL ENVIRONMENTAL IMPACT STATEMENT

### VOLUME III

Appendix O	Updated Environmental Noise Assessment
Appendix P	Environmental Site Assessments
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Appendix V	Federal Aviation Administration “Determination of No Hazard to Air Navigation”
Appendix W	CAT and CARB GHG Strategy and Early Action Measures Reports
Appendix X	Tribal-State Gaming Compacts

# **APPENDIX O**

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## ***Updated Environmental Noise Assessment***

# **NOISE IMPACT ASSESMENT**

## **NORTH FORK CASINO DEVELOPMENT MADERA COUNTY**

**PREPARED BY**

**VRPA TECHNOLOGIES, INC.  
FRESNO, CALIFORNIA**

**OCTOBER 13, 2008**





## **Proposed North Fork Hotel and Casino Development NOISE IMPACT ASSESSMENT**

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### **INTRODUCTION**

This Noise Impact Assessment (NIA) has been prepared for the purpose of identifying potential noise impacts for the proposed alternatives of the North Fork Hotel and Casino development. The proposed Project is located in the County of Madera.

### **DESCRIPTION OF THE REGION/PROJECT**

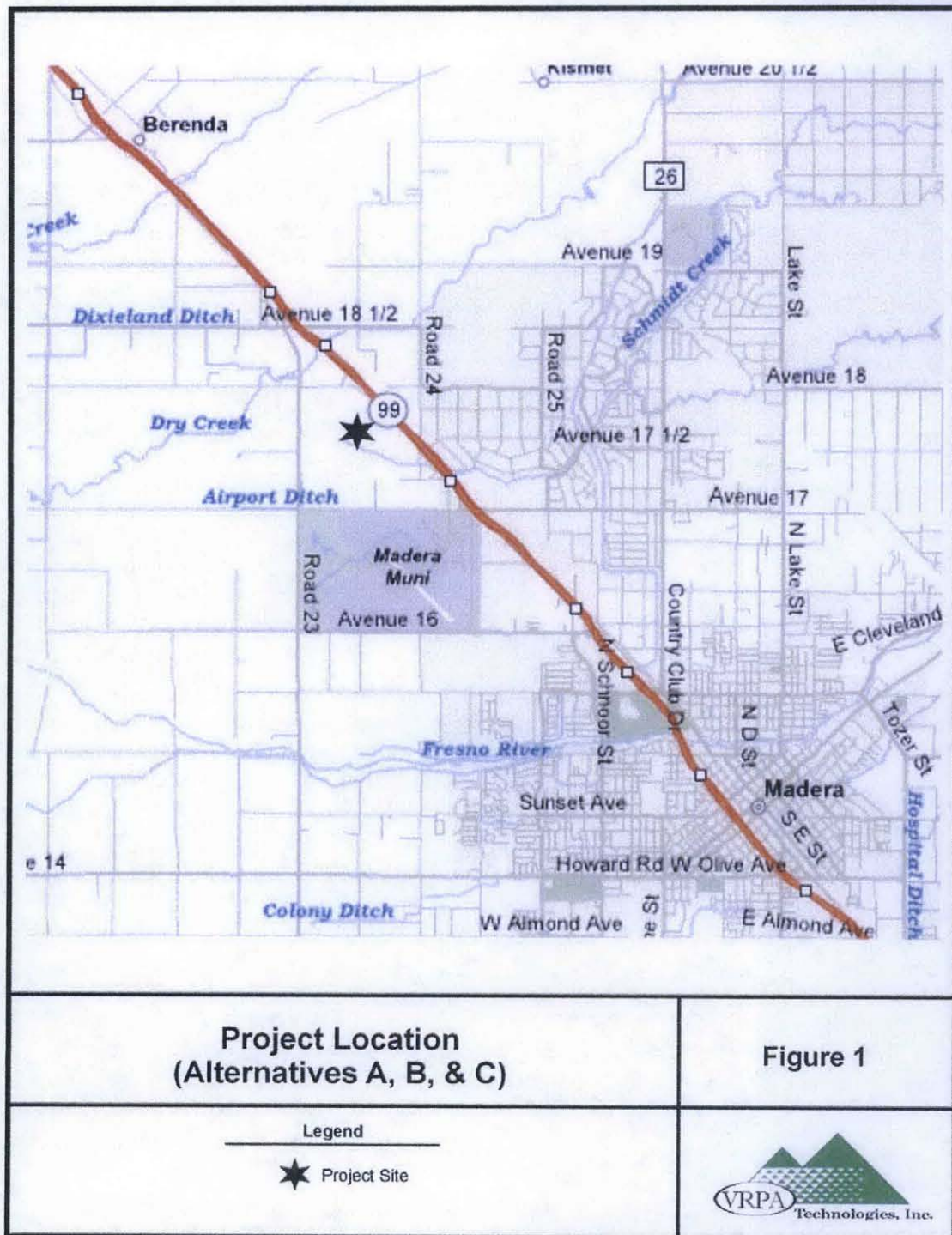
Figure 1 identifies the location of the Project along with major roadways within the vicinity of the Project site for alternatives A, B, and C. Figure 2 identifies the location of the Project for alternative D. The project site for alternatives A, B, and C is located southwest Madera County, just north of the City of Madera and adjacent to State Route 99 and Golden State Boulevard. Alternative D is a proposed off-site location in Madera County near North Fork, California, approximately 30 miles south of Yosemite National Park and 40 miles north east of Fresno, California. Alternative E represents a No-Action alternative that will also be included in this assessment. For noise impact assessment purposes, the "Project" alternatives are defined as the following:

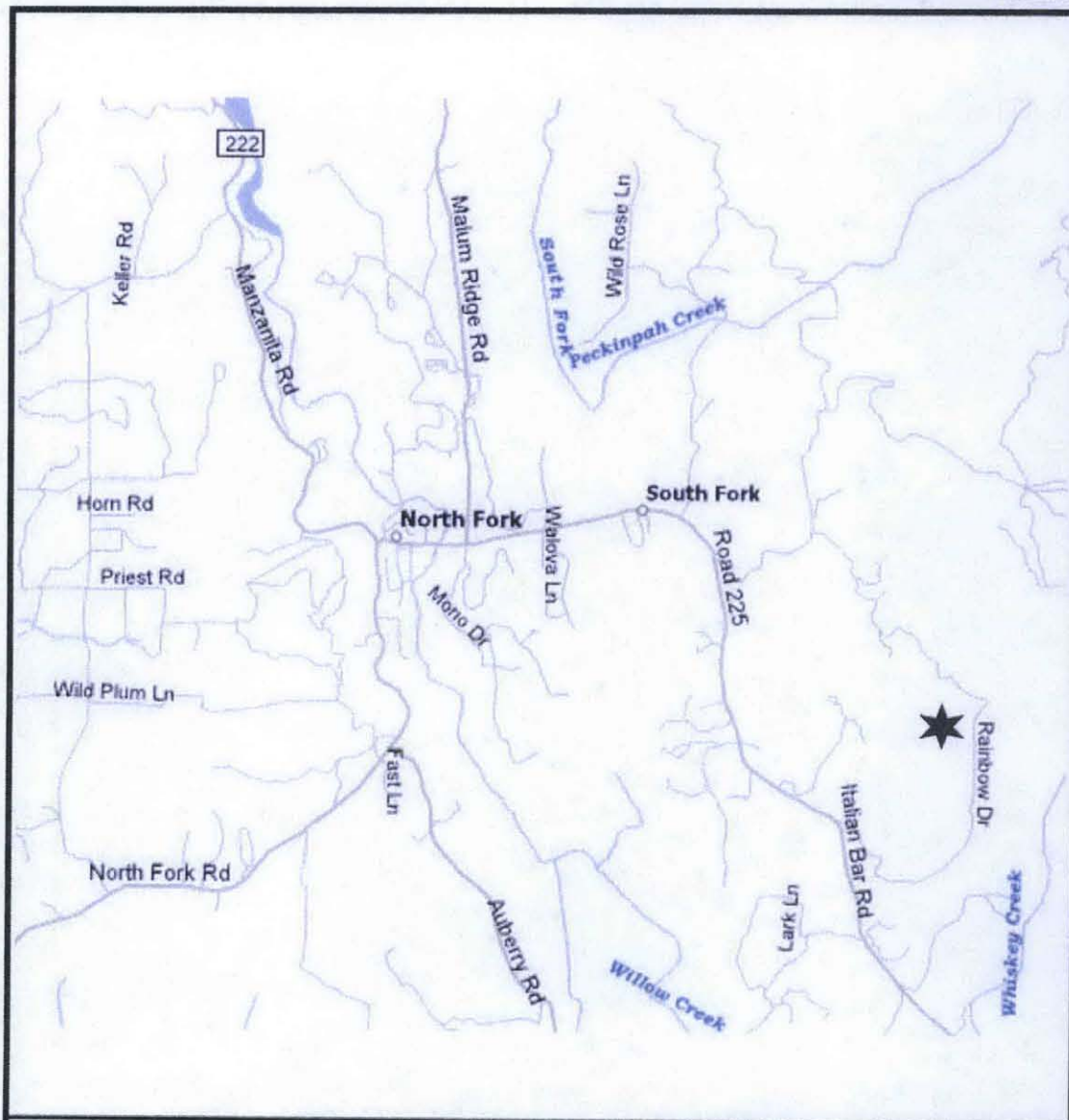
- ◆ Alternative A: Preferred Casino and Hotel Development;
- ◆ Alternative B: Decreased Intensity Casino and Hotel Development;
- ◆ Alternative C: Non-Gaming Development on the Project Site;
- ◆ Alternative D: Alternative Off-site Alternative; and
- ◆ Alternative E: The No-Action Alternative.

### **METHODOLOGY**

When preparing an NIA, guidelines set by affected agencies must be followed. Acoustical terminology used for this NIA is documented in Appendix A. In analyzing noise levels, the Federal Highway Administration's (FHWA) Highway Traffic Noise Prediction and Federal Interagency Committee On Noise (FICON) methodology must be applied. Safety concerns must also be analyzed to determine the need for appropriate mitigation resulting from increased noise due to increased traffic adjacent to the Project and other evaluations such as the need for noise barriers and other noise abatement improvements. Unless otherwise stated, all sound levels reported are in A-weighted decibels (dBA). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards use A-weighting, as it provides a high degree of correlation with human annoyance and health effects.







**Project Location  
(Alternative D)**

**Figure 2**

Legend

★ Project Site

First, existing "baseline" traffic noise levels are established based on previously collected traffic data and using Sound2000 modeling. Sound2000 is the Caltrans version of FHWA's STAMINA 2.0/OPTIMA Traffic Noise Prediction Programs. Once existing levels are established, future levels, based on expected traffic growth, are calculated and compared to both the existing noise level and the maximum allowable noise exposure based on FICON noise criteria. Referencing Table 1 the FICON Significance of Changes in Noise Exposures Criteria identifies an increase in traffic noise levels of 2.0 dB or more would be significant where the ambient level exceeds 65 dB. The rationale for table 1 is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant annoyance. Table 2 shows the FHWA Noise Abatement Criteria, which identifies a maximum interior noise level of 52 dB for hotels.

**TABLE 1**

SIGNIFICANCE OF CHANGES IN CUMULATIVE NOISE EXPOSURE (FICON)	
Ambient Noise Level Without Project $L_{dn}$	Increase Required for Significant Impact
<60 dB	+5 dB or more
60 – 65 dB	+3 dB or more
>65 dB	+2 dB or more

Source: Federal Interagency Committee On Noise (FICON)

**TABLE 2**

NOISE ABATEMENT CRITERIA (NAC) Hourly A-Weighted Sound Level FHWA	
Land Use Catagory	Interior Spaces $L_{eq}$ dB
Schools, Libraries, Churches, Hotels, Hospitals, Nursing Homes	52
Amphitheaters, Auditoriums	52

Source: FHWA



## EXISTING TRAFFIC NOISE

Existing traffic noise levels were evaluated using the Sound 2000 Prediction Model. Traffic volumes and speeds of 65 miles per hour along State Route 99 and 50 miles per hour along Golden State Boulevard, were entered into the model to estimate noise levels at the proposed location for Alternatives A, B, and C. For Alternative D, traffic volumes and speeds of 35 miles per hour along Mission Drive were entered into the model.

To assess the traffic noise impacts from the adjacent roads on the project, the first step is to determine the baseline or the existing noise condition. The second is to then compare the baseline to future level results, based on expected traffic growth, and the maximum allowable noise exposure.

To assess existing noise conditions, VRPA Technologies staff compiled current traffic counts and existing geometric conditions. Staff conducted noise level measurements within the project site on September 8, 2005. Noise measurements were conducted during peak hours and while aircrafts from the Madera Municipal Airport were in the air. The purpose of the measurements was to evaluate the accuracy of the model in describing traffic noise exposure within the project site. The project site plan and noise-monitoring sites are shown in Figures 3, 4, 5, and 6.

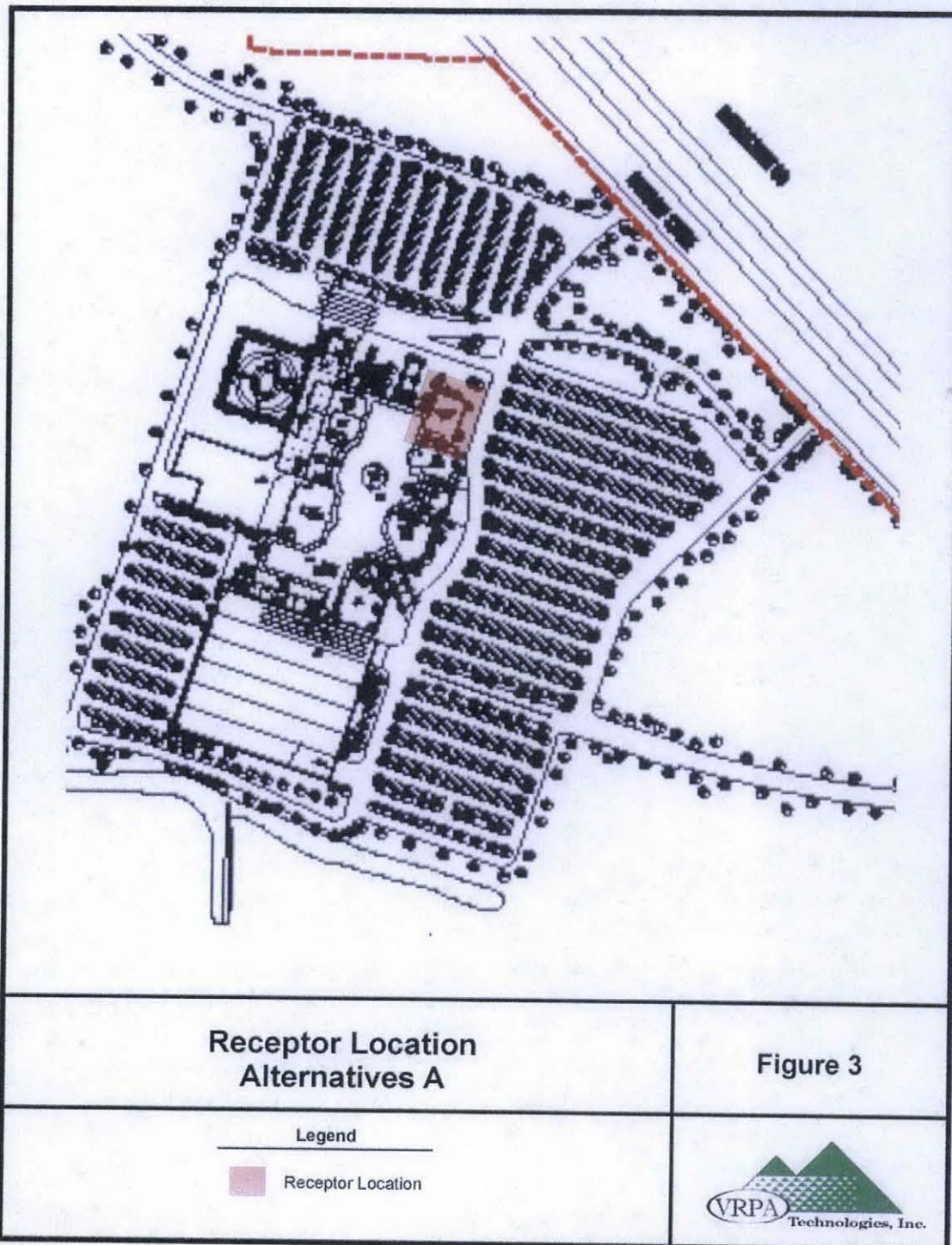
Noise monitoring equipment consisted of an Extech Type 2 sound level meter datalogger. Noise measurements were conducted in terms of the equivalent energy sound level ( $L_{eq}$ ). Measured  $L_{eq}$  were compared to  $L_{eq}$  values calculated (predicted) by the Sound 2000 model. Traffic volumes, truck mix and vehicle speeds were used as inputs to the model. The results of this comparison are shown in Table 3.

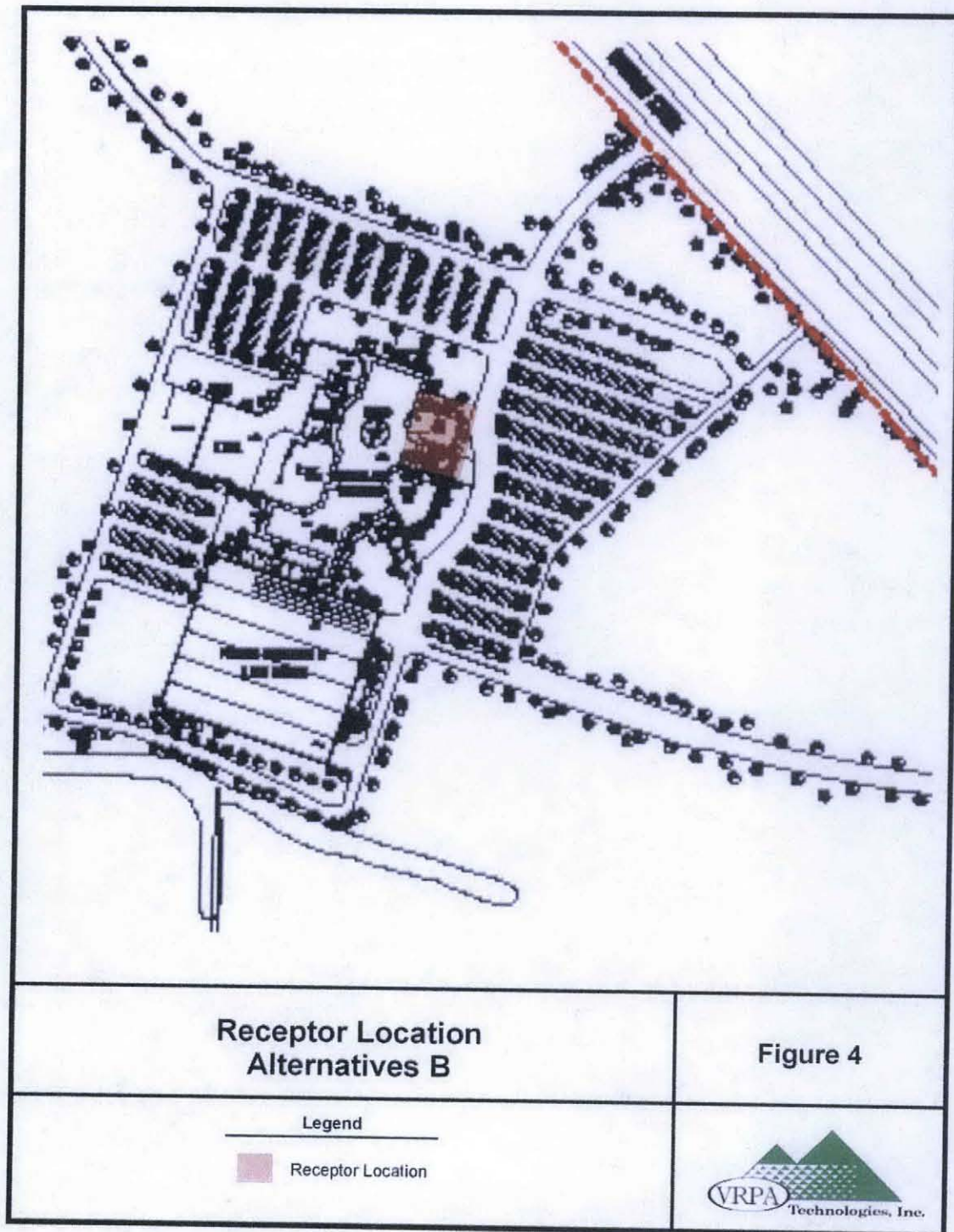
Noise measurements locations at the project site are shown in Figures 3, 4, 5, and 6, and are representative of the approximate location of the closest proposed building setback from State Route 99 and Golden State Boulevard or Mission Drive for Alternative D. Results of the noise analysis are reflected in Table 3, and are further described in technical worksheets at the back of this NIA. The existing noise levels for each alternative are currently below the FHWA standards for exterior noise.

**TABLE 3**  
**NOISE IMPACTS FOR EXISTING CONDITIONS**

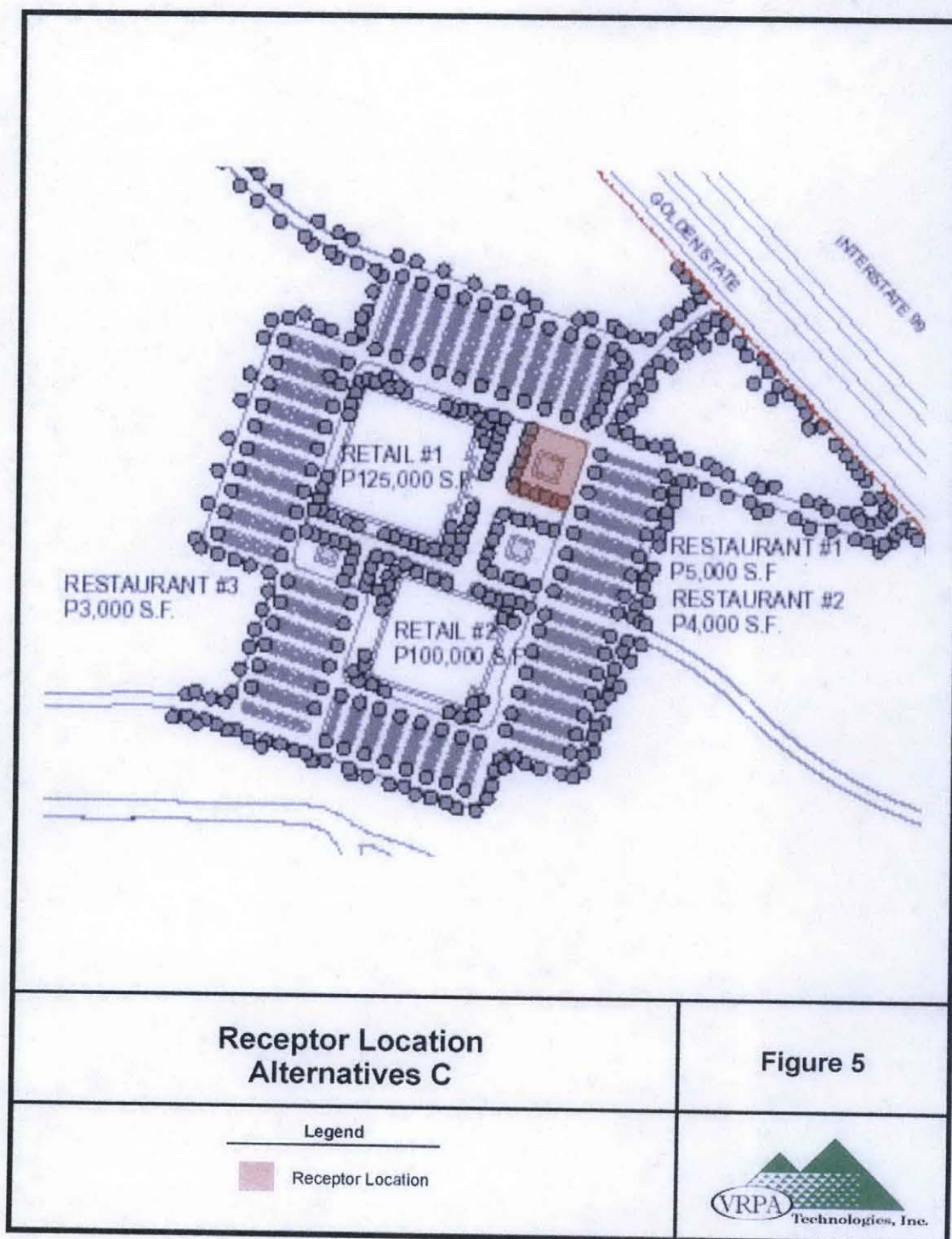
Receptor	Existing Leq Measured	Existing Leq Predicted	Diff. (Model Calibration Amount)
Alternative A	53.2	55.4	2.2
Alternative B	52.9	54.8	1.9
Alternative C	55.1	57.8	2.7
Alternative D	39.5	38.9	-0.6

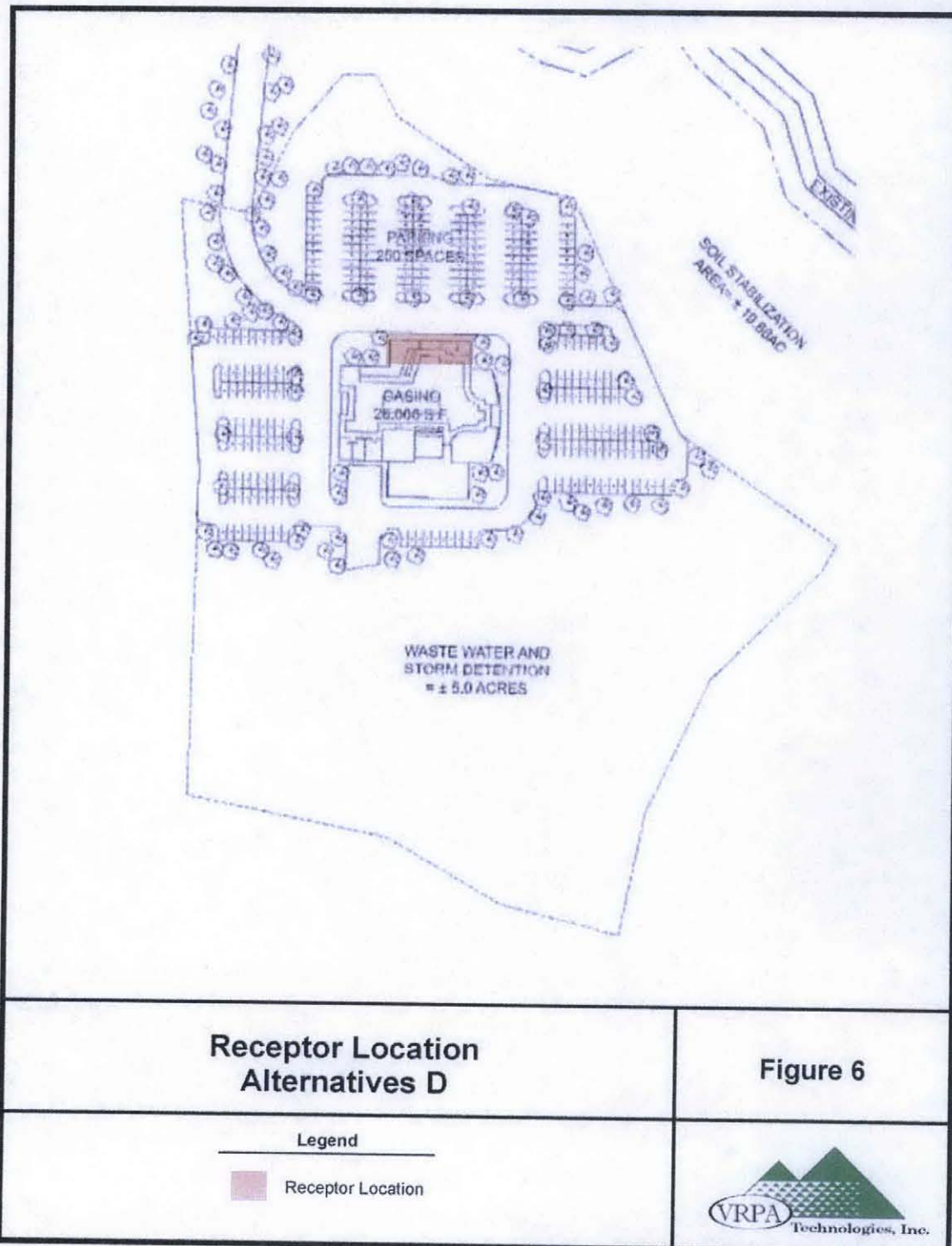
















### **Off-Site receptors**

Adjacent to the north and south of the project site for Alternatives A, B, and C, there are a few rural homes. The Madera County's General Plan Noise Element allows for a maximum 65 dB for outdoor areas of residences adjacent to State Route 99. The residential homes to the south are of importance because a majority of the project traffic will travel north and south on Golden State Boulevard as the traffic flows to and from Avenue 17. An analysis of the closest home to Golden State Boulevard proves that the addition of the proposed project will not exceed the Madera County noise criteria or the FICON noise criteria for the year 2008. In the year 2030, it is predicted that the noise levels at the outdoor areas will exceed Madera County's noise criteria with or without the project. The project however, will not exceed the +2 dB increase of traffic noise with the project. Results are shown in Table 3.

### **Madera Municipal Airport**

Madera Municipal Airport is located approximately 1.5 miles south of the Project location for Alternatives A, B, and C. There are approximately 139 Aircraft operations per day. The airport accommodates business jet and turbojet type aircrafts (No Commercial Airlines). Typical approach and departure noise produced by business type aircrafts are shown in the appendix. Existing noise measurements were taken while an aircraft was in the air and it was noted that the noise meter would jump to approximately 58.0 to 60.0 dB. Based on the existing noise level analysis and the typical aircraft noise pollution (FAA), the Madera Municipal Airport does not have a significant impact on the proposed project location for Alternatives A, B, and C.

### **Year 2010 and 2030 Traffic Conditions**

Impacts in the Project area resulting from opening day and 20 years of growth and development (2010 & 2030) are described in this Section. In these scenarios, forecasted traffic volumes for the year 2010 and 2030 were used in the model to analyze future year conditions. Results are identified in Table 3. Project traffic from the proposed Alternatives was then added to the forecasted 2010 and 2030 volumes and then used in the model to analyze Year 2010 and Year 2030 plus project conditions. These results are also identified in Table 3.

**TABLE 3**  
**NOISE IMPACTS FOR YEAR 2010 AND YEAR 2030 CONDITIONS**

Receptor	2010 No Project Leq	2010 Plus Project Leq	2010 no Project vs 2010 Plus Project (Diff)	2030 No Project Leq	2030 Plus Project Leq	2030 No Project vs 2030 Plus Project (Diff)
Alternative A	55.8	55.9	0.1	58.6	58.7	0.1
Alternative B	55.2	55.2	0.0	58.0	58.0	0.0
Alternative C	58.2	58.9	0.7	61.0	61.1	0.1
Alternative D	38.7	43.2	4.5	40.0	44.0	4.0
Residential Receptor	63.3	64.8	1.5	67.7	69.2	1.5

### Interior Noise Analysis

Construction methods complying with current building code requirements will reduce exterior noise levels by at least 20-25 dB if windows and doors are closed. An evaluation of existing and predicted future noise levels indicate that this reduction will be sufficient for compliance with the FHWA 52 dB interior standard.

### Exterior Noise Analysis

Results of the analysis indicate that Alternatives A, B, C, and D receptors will not exceed FICON's criterion of +5 dB with the addition of the proposed project alternative. For the undeveloped site, the future traffic noise exposure at the closest proposed building setback is shown in Table 3. Since 2030 traffic represents worst-case condition, it provides the basis for assessing noise mitigation requirements. Exterior noise mitigation will not be required for either of the proposed Alternatives to satisfy FICON noise standards.

### Construction Noise

Use of construction equipment during the development of the Project could lead to a temporary increase in noise levels in the immediate project area. The operation of typical equipment for road construction projects can range in noise levels from 78 dBA to 89 dBA as shown in Table 4. Temporary noise impacts ranging from 75 dBA to 85 dBA could result from construction at the identified sensitive receptors.

**TABLE 4**  
**TYPICAL CONSTRUCTION NOISE LEVELS**

Construction Phase	Noise Level (dBA, $L_{eq}$ )
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

NOTE: \* Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: Bolt, Baranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.

### Parking Lot Noise

Parking lot noise can be an annoyance to adjacent sensitive receptors. Estimates of the maximum noise levels associated with some parking lot activities are presented in Table 5, Maximum Noise Levels Generated by Parking Lots. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dB at 48 feet for normal speech to 50 dB at 50 feet for very loud speech. The adjacent properties to the project site's parking lot are more than 50 feet away; therefore parking lot noise from the project will not be significant to nearby receptors.

**TABLE 5**  
**Noise Levels Generated by Parking Lots**

Noise Source	Maximum Noise Levels @ 50 ft. from source
Car door slamming	63 dBA
Car starting	60 dBA
Car accelerating	55 dBA
Car idling	65 dBA
People shouting, laughing	61 dBA

Source: Wieland Associates, 2002

## INVESTIGATION OF APPROPRIATE MITIGATION MEASURES

### Temporary Noise Mitigation

Temporary noise impacts will result from construction of the proposed Project. As a result, the following mitigation measures and others in the FHWA's noise ordinance should be implemented to reduce the potential for noise impacts during construction:



- ♦ construction of the Project, along areas adjacent to existing residential land use development, shall be restricted to weekdays and normal daytime hours (7:00 a.m. to 7:00 p.m.) to minimize impacts;
- ♦ construction noise impacts in areas with large numbers of affected residences can be ameliorated by providing local residents with information on the expected type and duration of construction;
- ♦ construction equipment shall be properly muffled and maintained; and
- ♦ the contractor work specifications for all construction activities shall reflect these measures and shall be subject to review and approval.



## APPENDIX A

### ACOUSTICAL TERMINOLOGY

The following terminology has been used for purposes of this NIA:

<b>Ambient Noise Level:</b>	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
<b>CNEL:</b>	Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7 p.m. to 10p.m. and ten decibels to sound levels in the night before 7 a.m. and after 10 p.m.
<b>Decibel, dBA:</b>	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micro-newtons per square meter).
<b>DNL/<math>L_{dn}</math>:</b>	Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
<b><math>L_{eq}</math>:</b>	Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. $L_{eq}$ is typically computed over 1, 8 and 24-hour sample periods.
<b><math>L_{eq}(h)</math>:</b>	The hourly value of $L_{eq}$ .
<b><math>L_{max}</math>: event</b>	The maximum noise level recorded during a noise
<b><math>L_n</math>:</b>	The sound level exceeded "n" percent of the time during a sample interval ( $L_{90}$ , $L_{50}$ , $L_{10}$ , etc.). $L_{10}$ equals the level exceeded 10 percent of the time.



<b><math>L_n(h)</math>:</b>	The hourly value of $L_n$ .
<b>Noise Exposure Contours:</b>	Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.
<b>SEL or SENEL:</b>	Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to the duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and the reference duration of one second
<b>Sound Level:</b>	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

**Note:** CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while  $L_n$  represents the average noise exposure for a shorter time period, typically one hour.



**Appendix B  
Sound 2000 Analysis**

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

NORTH FORK CASINO 2010 NO PROJECT TRAFFIC

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
ALT A	55.8
ALT B	55.2
ALT C	58.2
RESIDENC	63.3

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00 sound32.out

TITLE:  
ALTERNATIVE D - 2010 NO PROJECT TRAFFIC

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
-----	
REC 1	38.7

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

NORTH FORK CASINO 2010 PLUS PROJECT TRAFFIC

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
-----	
ALT A	55.9
ALT B	55.2
ALT C	58.9
RESIDENC	64.8

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00 sound32.out

TITLE:  
ALTERNATIVE D - 2010 PLUS PROJECT

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
REC 1	43.2

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:

NORTH FORK CASINO 2030 NO PROJECT TRAFFIC

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
-----	-----
ALT A	58.6
ALT B	58.0
ALT C	61.0
RESIDENC	67.7



SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

sound32.out

TITLE:

ALTERNATIVE D - 2030 NO PROJECT TRAFFIC

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
REC 1	40.0

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00 sound32.out

TITLE:  
NORTH FORK CASINO 2030 PLUS PROJECT TRAFFIC

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
ALT A	58.7
ALT B	58.0
ALT C	61.1
RESIDENC	69.2

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00 sound32.out

TITLE:  
ALTERNATIVE D - 2030 PLUS PROJECT

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
REC 1	44.0

# **APPENDIX P**

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## *Environmental Site Assessments*





PHASE I  
ENVIRONMENTAL SITE ASSESSMENT  
**NORTH FORK CASINO SITE**

**NOVEMBER 2008**

Prepared For:  
North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643

Prepared By:  
Analytical Environmental Services  
1801 7th Street, Suite 100  
Sacramento, CA 95811

**AES**

PHASE I  
ENVIRONMENTAL SITE ASSESSMENT  
**NORTH FORK CASINO SITE**

**NOVEMBER 2008**

Prepared For:  
North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643

Prepared By:  
Analytical Environmental Services  
1801 7th Street, Suite 100  
Sacramento, CA 95811



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# **SECTION 1.0**

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## **INTRODUCTION**

# **SECTION 1.0**

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## **INTRODUCTION**

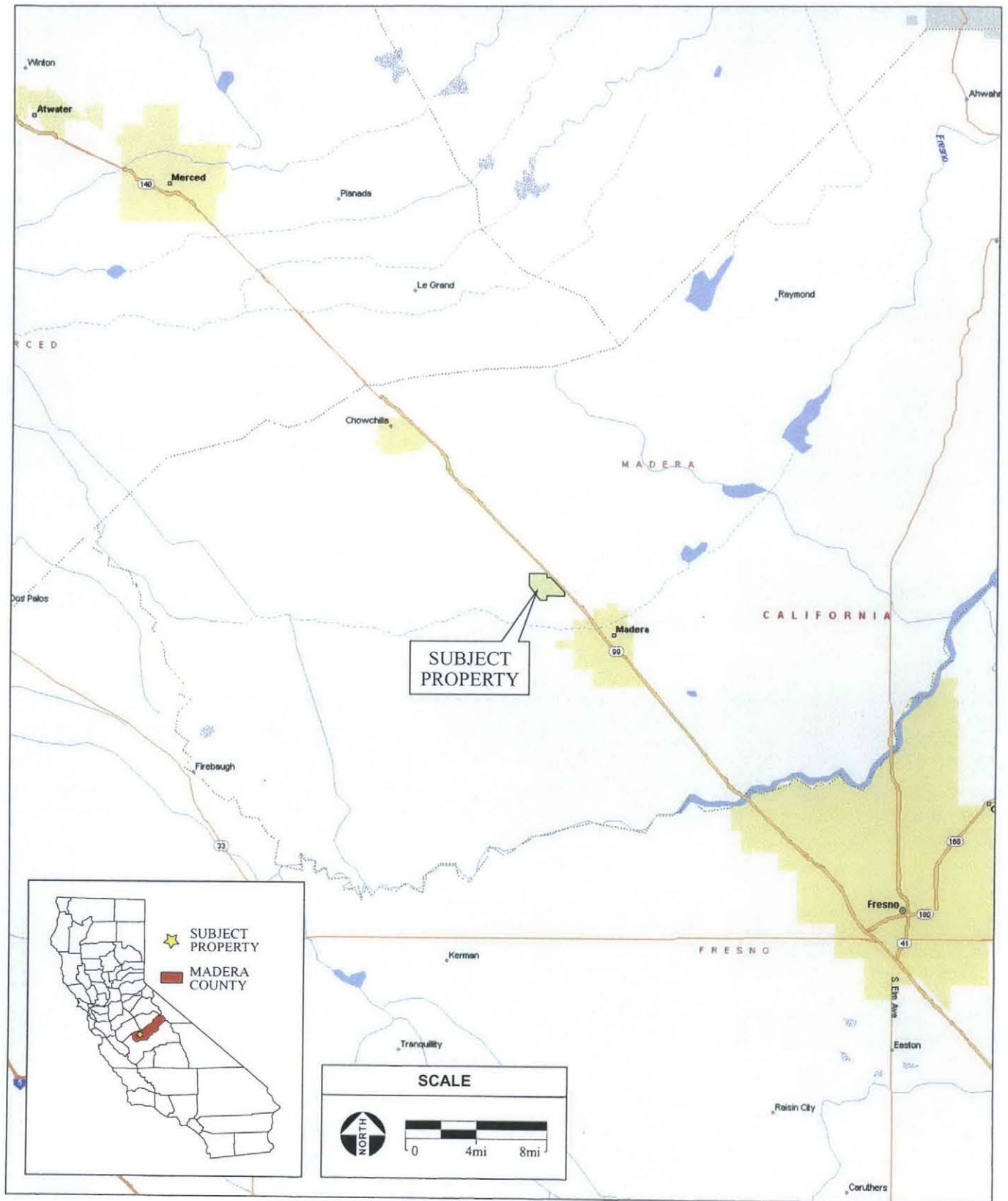
### **1.1 BACKGROUND**

Analytical Environmental Services (AES) prepared a Phase I Environmental Site Assessment (ESA) for the Subject Property in 2004 in accordance with American Society for Testing and Materials (ASTM) Standard Practice E 1527-00 and Bureau of Indian Affairs (BIA) guidelines (620 DM Chapter 2). In July 2007, AES accompanied representatives from the BIA as they performed an updated Phase I ESA to support a proposed fee to trust transaction. BIA performed a subsequent site visit on October 29, 2008. Several Recognized Environmental Conditions (RECs) were identified on the Subject Property in the 2007 Phase I ESA and during the subsequent site visit. The RECs identified on the Subject Property are documented in a letter from the BIA to the property owner (**Appendix E**). PARC Environmental was contracted by the current property owner (Station Casinos) to address several of these RECs as documented in Station Casinos response letter to the BIA (**Appendix F**). PARC environmental performed follow up site visits as part of this updated Phase I ESA on March 14, June 11, and June 27, 2008. The PARC Environmental work was divided into several tasks as documented in **Appendix F**.

### **1.2 PURPOSE**

AES has been retained by the North Fork Rancheria of Mono Indians (hereafter, "Tribe") to prepare this updated Phase I ESA in accordance with the ASTM Standard Practice E 1527-05 and BIA guidelines (620 DM Chapter 2) in support of proposed a fee to trust transaction. A new ASTM Standard (1527-05) was issued in 2005 and property ownership changed since preparation of the original 2004 Phase I ESA (AES, 2004), therefore an updated Phase I ESA is now necessary. This ESA encompasses seven contiguous parcels with an area of approximately 305-acres located in unincorporated Madera County just north of the City of Madera and west of State Route 99 (SR-99). As such, use of the term "Subject Property" refers to the seven parcels unless otherwise stated (**Figure 1**).

The purpose of this Phase I ESA is to identify RECs that may affect future uses of the Subject Property. AES has performed this assessment in conformance with the scope and limitations of ASTM Standard Practice ASTM-1527-05, which specifies the appropriate inquiry requirements



**Figure 1**  
Regional Location Map





**PHOTO 25:** Photo showing concrete debris associated with the debris pile in the previous photos.



**PHOTO 26:** Photo showing one of the transformers mounted on one of the power lines that supply the agricultural wells on the property.



**PHOTO 27:** Photo showing the private residence located in the southeast corner of the Subject Property.



**PHOTO 28:** Photo showing the metal storage building located adjacent to the private residence shown in the previous photo.



**PHOTO 29:** Photo showing the boat, jet ski, vehicles, tools and other equipment belonging to the tenant that currently occupies the Subject Property.



**PHOTO 30:** Photo showing fifth wheel trailer located on the Subject Property.



for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The Phase I ESA covers the Subject Property, adjacent areas, and surrounding known sources of contamination, up to 2.0 miles from a point roughly in the middle of the Subject Property. Site reconnaissance inspections of the Subject Property and adjacent properties were performed, local agencies were contacted and relevant database listings of hazardous waste sites, hazardous waste generators, and underground storage tanks were reviewed. AES also reviewed historical aerial photographs and topographic maps for the Subject Property. Years available for review were 1950, 1972, 1981, and 2004 (EDR, 2004).

### **1.3 RECOGNIZED ENVIRONMENTAL CONDITIONS**

The term Recognized Environmental Condition (REC) refers to the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Additionally, the term historical REC refers to an environmental condition associated with the Subject Property, including a past release of any hazardous substance or petroleum product, which in the past would have been considered a REC, however such condition has been remediated. Historical RECs will therefore be included in this Phase I ESA (ASTM 2005).

### **1.4 LIMITATIONS AND EXCEPTIONS**

No Environmental Site Assessment can completely eliminate uncertainty regarding the potential for RECs in connection with a property. Conformance of this assessment with ASTM Standard Practice E 1527-05 will reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with the Subject Property. While AES has made every effort to discover and interpret available historical and current information on the Subject Property, the possibility for undiscovered contamination remains. AES's report is a best-effort collection and interpretation of available information consistent with industry standards for the completion of Phase I ESAs.

This Phase I ESA is based on a regulatory agency records review, site reconnaissance visits, and several telephone interviews with representative from Madera County Planning Department and Madera County Agriculture Commission. Physical testing of soil or groundwater is not within the scope of a Phase I ESA; however confirmation soil sampling was conducted after stained soils

were removed within a small corral area on the Subject Property. The analytical results of the confirmation sampling are included in **Appendix E**. Surveys for the presence of asbestos containing materials (ACM) were not conducted in this Phase I ESA.

## 1.5 METHODOLOGY

A variety of data sources and agencies were consulted in completing this Phase I ESA. The following sections describes the methods used and the data sources consulted to accomplish each task.

### 1.5.1 Historical Review

Previous land uses and history of the study area was researched in an effort to identify potential sources of hazardous substances at or near the Subject Property. Historical aerial photographs (**Appendix A**) and topographic maps (**Appendix B**) of the Subject Property and immediate vicinity were reviewed and interpreted. Aerial photos are examined in order to provide indications of the presence of aboveground storage tanks, industrial buildings, gas station canopies or pump islands, as well as other indications of bulk hazardous material storage within the study areas (EDR, 2008).

### 1.5.2 Database Searches

Database search requests were made for records of known storage tank sites and known sites of hazardous materials generation, storage and/or contamination. Available information for federal, state, and local agency lists of: (a) known or potential hazardous waste sites and landfills; (b) sites currently under investigation for environmental violations; (c) site which manufacture, generate, use, store, and/or dispose of hazardous materials or hazardous wastes; (d) sites which have underground storage tanks (USTs); and (e) sites with recorded violations of regulations concerning USTs and hazardous materials/hazardous wastes. The database search is intended to identify facilities that may have the potential to impact surface and/or subsurface conditions at the Subject Property. A full listing of sites within the vicinity of the Subject Property is included in the database report (**Appendix C**).

### 1.5.3 Site Reconnaissance

Pete Connelly from AES performed a site reconnaissance of the Subject Property on February 12, 2004, February 9 and 10, 2005, and July 12, 2007. Two representatives from BIA, Pat O'Mallan and Teresa Draper, accompanied AES during the July 12, 2007 site visit. Subsequent visits occurred on March 14, June 11, and June 27, 2008. On October 29, 2008 BIA representatives again visited the site to perform a confirmation site visit. **Section 3.0** describes observed conditions during the site reconnaissance visits. Adjacent properties were visually inspected to

the extent possible without trespassing. There were no visible conditions present on adjacent properties that would affect surface and/or subsurface conditions on the Subject Property.

## **1.6 DEVIATIONS AND DATA GAPS**

ASTM Standard 1527-05 requires any significant data gaps, deviations and deletions from the ASTM Standard to be identified and commented on in the Phase I ESA. A significant data gap would be one that affected the ability to identify a REC on the Subject Property or adjacent properties.

Due to its rural location Sanborn Fire Insurance maps and City Directories were not available for the Subject Property. In addition, time period gaps in the aerial photo coverage exist for the Subject Property. The first coverage gap is comprised of a 22 year time frame that begins in 1950 and ends in 1971. The second coverage gap is comprised of a 23 year time frame that begins in 1981 and ends in 2004. Historic aerial photos indicate land use on the Subject Property has not changed since 1950. There is no historical data or physical indications that the property was occupied by a business that would have produced hazardous materials. The lack of Sanborn Fire Insurance maps, City Directories, and complete aerial photo coverage is not considered a significant data gap for this Phase I ESA.

## **SECTION 2.0**

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### *SITE DESCRIPTION*

## SECTION 2.0

### SITE DESCRIPTION

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#### 2.1 LOCATION AND LEGAL DESCRIPTION

The Subject Property is located within an unincorporated area of Madera County, north of the City of Madera, adjacent to State Route 99 (SR-99), and approximately 25 miles north of the City of Fresno, California (**Figure 2**). This Phase I ESA encompasses seven adjacent parcels with a total area of approximately 305-acres, including a 36.01-acre parcel, a 40.66-acre parcel, a 38.26-acre parcel, a 42.23-acre parcel, a 38.92-acre parcel, a 56.44-acre parcel, and a 52.97-acre parcel. **Figure 3** is an aerial photograph of the Subject Property. The Madera County Assessors Parcel Numbers (APNs) are included in the following table:

**TABLE 1**  
SUBJECT PROPERTY - PARCELS

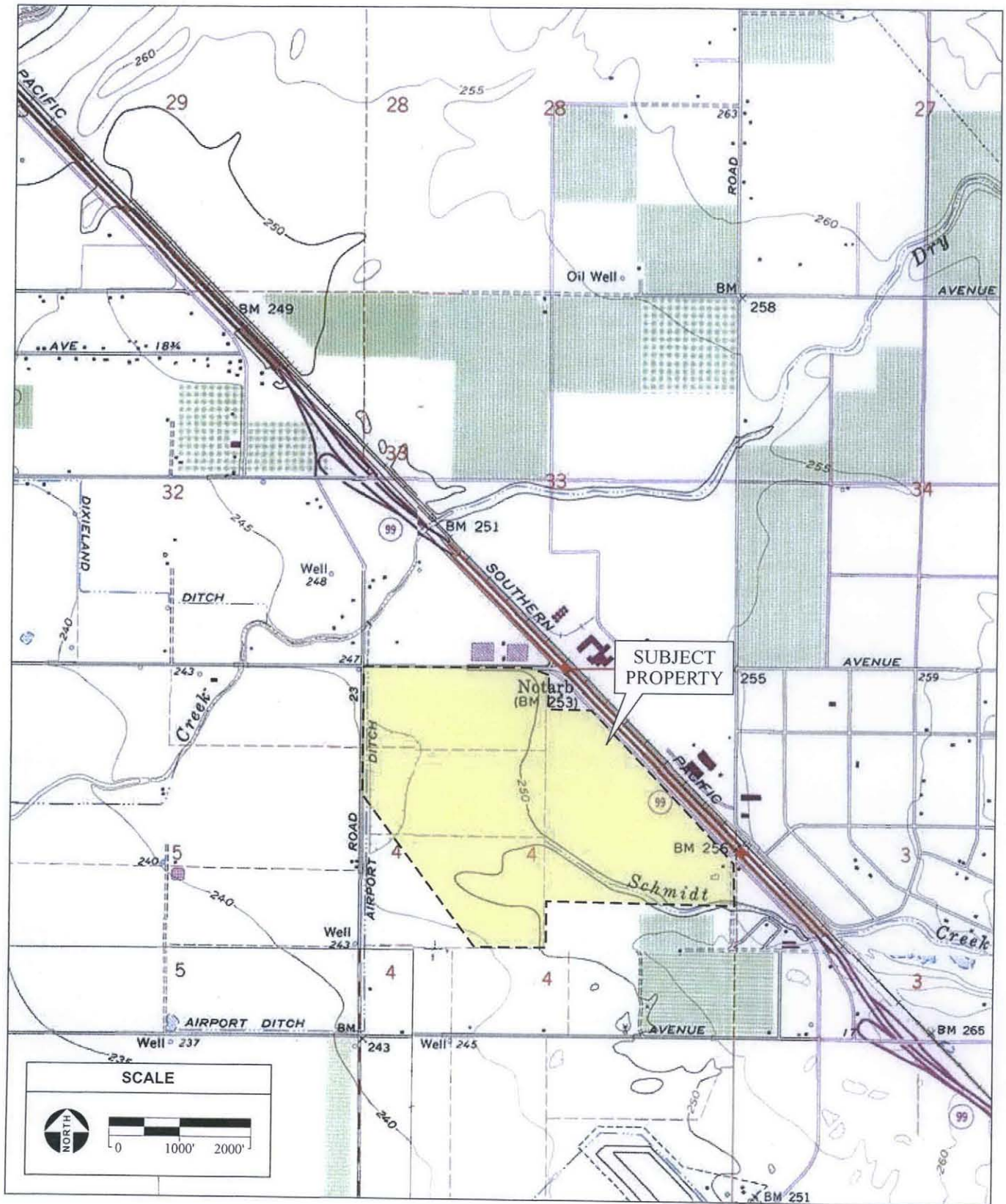
Assessors Parcel Number (APN)	Acres
033-030-010-000	36.01
033-030-011-000	40.66
033-030-012-000	38.26
033-030-013-000	42.23
033-030-014-000	38.92
033-030-015-000	56.44
033-030-017-000	52.97
<b>TOTAL</b>	<b>305.49</b>

Source: First American Title, 2003; Analytical Environmental Services, 2005.

#### 2.2 SITE AND VICINITY CHARACTERISTICS

The Subject Property is flat agricultural land comprised of seven contiguous parcels that are approximately 305 acres in size, most of which are plowed into crop furrows. A vacant, approximately 1400 square foot (sq/ft) residential structure is present on the eastern portion of the Subject Property. The address of this residence is 17488 Golden State Boulevard, Madera CA. The residence is constructed of wood frame, wood shingle roof, and concrete foundation. In addition to the residence, several ancillary buildings are present on the Subject Property including





SOURCE: "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles,  
 Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian; AES, 2008

North Fork Casino Site Phase I ESA / 204502 ■

**Figure 2**  
 Topographic Site Map







several detached garage/shop buildings and barn and corral areas located adjacent to the residence. The buildings include an approximately 500 sq/ft metal storage building and two approximately 300 sq/ft wood framed storage buildings. The metal storage building is constructed of a corrugated metal roof, metal frame, and concrete foundation. The two approximately 300 sq/ft buildings are constructed of wood frame, wood roof and wood post foundations. A barn and corral are located in close proximity to these structures.

The Subject Property elevation is approximately 250 feet above mean sea level (msl) and is generally bound by Road 23 to the west, Golden State Boulevard and SR-99 to the east, Avenue 18 and rural residential properties to the north, and Avenue 17 and rural residential properties to the south. Surrounding land uses include agricultural to the west, a small auto recycler on the northeast border, private residences and abandoned commercial greenhouses to the north, and private residences and vineyards to the south. Several north to south and an east-west trending dirt roads cross the Subject Property. Primary site access is through a dirt driveway located off Golden State Boulevard. The driveway also provides access to the residence and ancillary buildings. Secondary site access is on the north side of the Subject Property via a dirt road off Avenue 18.

## 2.3 HYDROLOGY

The Subject Property is located within the Madera Irrigation District (MID). MID is the main surface water supplier in the county, managing the Madera Canal (located east of the Subject Property) for the United States Army Corps of Engineers. A MID water supply ditch is located along the western border of the Subject Property. The majority of the Subject Property is classified by MID as capable of receiving irrigation water from this ditch, although the owner of the Subject Property is not currently under contract to receive MID water (AES, 2004).

The residence on the Subject Property is supplied with water through a private domestic well. Several agricultural wells with associated pumps, tanks, and electrical supply boxes are located on the Subject Property (Section 3.2). Some wells appeared functional while others appeared to be in a state of disrepair. In 2008, the property owner determined the wells are capped, but the caps needed to be secured. The wells were subsequently capped by Bradley and Sons Construction on June 27, 2008. The wells will be left in place until property owner determines whether the wells will be needed for future onsite development.

## 2.4 GEOLOGY AND SOIL

The rock stratigraphic unit is Cenozoic which is in the Tertiary system in the Pliocene series. The soils in the project area are primarily comprised of Positas sandy loam. Positas sandy loam is characterized as a fine sandy loam with very slow infiltration rates. Positas sandy loam is described as a well-drained soil with an intermediate water holding capacity (EDR, 2007).

## 2.5 CURRENT USES OF THE SUBJECT PROPERTY

As stated previously, the Subject Property is a vacant agricultural property with a residence and several ancillary structures. Site visits were conducted as described in **Section 1.5.3**. During the 2007 site visit, the Subject Property was vacant; areas that were not accessible during the previous site visits were available for inspection. As stated above, an approximately 1,400 square foot single-family residence and ancillary structures are present on the southeast corner of the Subject Property. Several agricultural wells and a concrete-watering cistern with associated piping were noted on the central/north eastern portion of the Subject Property; along a north to south trending dirt road. Several cattle feeding troughs were also noted in the south-central portion of the Subject Property.

During the February 12, 2004 site reconnaissance visit, the Subject Property growing fields were planted with a non-irrigated feed crop. According to the tenant that was occupying the Subject Property during the 2005 site visit; no crops would be planted during subsequent growing seasons (Wilton, 2005). No crops were planted during follow-up site visits. According to the property owner, the Subject Property is currently dry farmed. Environmental conditions are noted and site photos are provided in **Section 3.0** of this ESA.

## 2.6 HISTORICAL USES

Property ownership records do not suggest any ownership and/or occupation of the Subject Property by commercial businesses that use and/or generate hazardous materials. Historic uses of the Subject Property appear to have been very much as they are today, agricultural and rural in nature. Onsite indications of prior cattle ranching activities on the Subject Property include several cattle feeding troughs and watering cisterns. According to the tenant occupying the Subject Property during the 2005 site visit (Wilton, 2005) non-irrigated feed crops were grown on the property since 1995, which is when he moved onto the property.

## 2.7 AERIAL PHOTOGRAPHS

Historical aerial photographs were reviewed for the Subject Property. Years available for review were 1950 (1"=833'), 1950 (1"=666'), 1972 (1"=600'), 1981 (1"=1611'), and 2004 (1"=1200'). The 2004 aerial photo is included as **figure 3**. Due to the size of the Subject Property two aerials from 1950 were reviewed. Historical aerial photographs were of varying scale and clarity. Historical aerial images offer detailed review of previous land uses on the Subject Property and adjacent properties. Additionally, historical topographic maps can confirm the presence of man-made structures, including buildings, wells, pipelines, etc. The review of the aerial photographs and topographic maps are summarized by year below.

**1950 (A)**

Land use on the Subject Property from 1950 is shown as agricultural. There are several unimproved roads crossing the southeastern and northeastern portions of the Subject Property. There appears to be several small outbuildings, a barn, and possibly a small house present in the areas adjacent to the unimproved roads. Some of the buildings are in the area where large debris piles were observed during the site visit (**Section 3.2, photos 17 and 18**). State Route 99 (SR-99) is visible in this photo and runs diagonally through the 1950 (A) aerial photo. A drainage that originates on the west side of SR-99 appears inundated with water. As a result, the southern portion of the Subject Property appears flooded. The drainage is delineated as Schmidt Creek on the historical topographic maps (**Appendix B**). The private residence (**Section 3.2, photo 21**) that is currently present on the Subject Property is not visible in the 1950 (A) aerial photo. Due to the large size of the Subject Property and the scale of the aerial photo, the northern and western portions of the Subject Property are not visible in this photo. Adjacent land uses appear agricultural with outlying areas sparsely populated.

**1950 (B)**

The 1950 (B) aerial photo shows the northern, central, and the southwest portions of the Subject Property. Similar to the previous photo, Schmidt Creek is inundated with water. There appears to be significant ponding of water in the central and northwest portions of the Subject Property. The buildings that are visible in the previous photo are also visible. The land uses for outlying areas appear to be agricultural or undeveloped. There is no indication of gross historic hazardous materials involvement on the Subject Property.

**1972**

Due to the small scale of this aerial photo, only a small portion of the Subject Property is visible in the photo. The unimproved roads that cross the Subject Property are visible. The residence, barn, and corral areas currently present on the Subject Property is slightly visible, however due to the resolution of the photo, individual structures are not identifiable. Crop furrows are slightly visible on a portion of the Subject Property. Adjacent properties and outlying areas are agricultural and rural in nature.

**1981**

Similar to 1972, individual structures are not visible on the Subject Property. The 1981 aerial photo is of poor quality. The Subject Property appears as an agricultural parcel. Adjacent properties and outlying areas are similar to previous photos, agricultural and rural in nature.

## **2004**

Land use has not changed on the Subject Property or adjacent properties since 1981. The residence located on the Subject Property, associated buildings, and crop furrows are slightly visible in the 2004 aerial photo (**Figure 3**). The smaller structures that were visible in the 1950 aerial photos are no longer present in the 2004 aerial photo. The automobile recycler located to the northwest of the Subject Property is also visible in the 2004 aerial photo. Adjacent land uses are residential and agricultural with vineyards and orchards located on the southern and western borders of the Subject Property.

## **2.8 BUILDING PERMITS**

No building permits have been filed for the Subject Property as reported by the Madera County Planning Department (Madera County, 2005).

## **2.9 SANBORN FIRE INSURANCE MAPS**

Sanborn Fire Insurance Maps do not provide coverage of the Subject Property.

## **SECTION 3.0**

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### **SITE RECONNAISSANCE AND INTERVIEWS**

## SECTION 3.0

### SITE RECONNAISSANCE AND INTERVIEWS

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#### 3.1 OBJECTIVE

The objective of the site reconnaissance is to identify current or historic hazardous materials involvement on the Subject Property or in the vicinity of the Subject Property. Hazardous material involvement or signature environmental conditions include the presence or likely presence of any hazardous materials or petroleum products that indicate an existing release, past release, or a threat of release into any structure on the Subject Property, soil, or groundwater. Signs of possible hazardous materials involvement would include any indications of underground storage tanks existing on the Subject Property, stained soils and/or unusual odors originating from the Subject Property, indications of an excavation or removal of soils, including patched asphalt and large debris piles, and other obvious signs of hazardous materials involvement.

Interviews included contacting individuals familiar with the Subject Property and knowledgeable of their historic and existing conditions relative to hazardous materials.

#### 3.2 SITE RECONNAISSANCE FINDINGS

Site visits were conducted as described in **Section 1.5.3**. Adjacent properties were observed to the extent possible without encroaching on private property. **Figures 4 through 7** show conditions of the Subject Property during the site visits.

The following conditions were noted during the 2004 and 2005 site visits:

- The Subject Property is approximately 305-acres in size. Most of the site was planted with what appeared to be a cover crop (**Photos 1 and 2**).
- An automobile recycler is present along the northeast border of the Subject Property (**Photo 3**).
- Several agricultural wells with associated pumps, tanks and electrical supply boxes were observed on the Subject Property. It could not be determined whether these wells were capped, or if the wells were functional during the initial site visits (**Photos 4 through 8**).

- A concrete-watering cistern was also present on the Subject Property during the site visit (**Photo 9**).
- Several pieces of farm equipment were present on the Subject Property including a tractor that appeared non-functional, a plow, and what appeared to be cotton hopper.
- Adjacent to the farm equipment was a cattle feeding system. The feeder consisted of a concrete foundation with metal chains for feeding collars (**Photo 10**).
- Sulfur powder was present in one of the cattle feeders. Sulfur is commonly used as an insect repellant for cattle and a fungicide for grapes.
- Adjacent to the cattle feeder was a debris pile comprised of non-hazardous materials, mostly household appliances, lumber, and concrete.
- Several pole-mounted transformers were present along a north to south trending dirt access road that appear to be an age where they could contain PCBs. There was no evidence of leaks associated with the transformers (**Photo 11**).
- A private residence comprised of wood framing and stucco exterior with a concrete slab foundation is located along the eastern border of the Subject Property, adjacent to Highway 99. Several ancillary structures are also present on the Subject Property. These include and approximately 500 square foot metal garage/shop, barn and corral areas, and two approximately 300 foot storage buildings. The residence is equipped with a private well and septic system (**Photos 12 through 15**).
- A buried telephone cable is present along the northern border of the Subject Property. The cable runs in an east to west direction along Avenue 18 (**Photo 16**).

The contents of the residence and ancillary buildings could not be fully inventoried during the initial 2004 and 2005 site visits. **Appendix E** includes site photos showing conditions during the July 12, 2007 site visit. Approximately 50 one gallon and several five gallon buckets of household paints, unmarked plastic containers (one and five gallon buckets), and miscellaneous non hazardous household debris were noted in the ancillary buildings. The following conditions are noted in the 2007 Phase I (**Appendix E**):

- The Subject Property was vacant and most of the agricultural equipment, 10,000-gallon above ground tank, and livestock were removed by the tenant.



- The metal storage building and a detached shop/garage area were empty with the exception of household debris and several metal and plastic containers. Most of the containers were empty or contained residual amounts of fluids. These containers included a five gallon bucket of used motor oil, several buckets of hydraulic fluid, aerosol cans, and approximately 50 one gallon containers of household paint. Additionally, several five gallon buckets and a 55-gallon drum were left in one of the corral areas. These five gallon buckets contained waste oils and hydraulic fluids, the 55-gallon drum contained used automobile parts. Surface soil staining was noted next to the waste oil container.

## **SITE CLEAN-UP ACTIVITIES**

Recognized Environmental Conditions (RECs) and other environmental concerns identified in **Appendix E** were addressed by the Subject Property owner on March 14, June 11, and June 27, 2008. A letter from the property owner to the BIA dated July 2, 2008 documenting site clean up activities is provided in **Appendix F**. Documentation of waste oil removal, paints, fertilizers, 55-gallon drums, stained soils, non hazardous debris, and empty containers removed by the property owner in response to the 2007 BIA Phase I is included in **Appendix F**.

- All containers of paints were subsequently removed from the Subject Property by the property owner and properly disposed offsite. The waste oils were poured into approved containers and removed offsite. Hazardous waste manifests are included in **Appendix F** of this Phase I. The empty metal building after all materials were removed is included in **Photo 17**.
- Stained soils were removed and confirmation soil sampling was performed to assess the nature of the staining. Sampling determined the soils were affected with waste oil and diesel fuels. Additional sampling will be performed in July as part of a Limited Phase II Site Assessment.
- The condition of onsite domestic and agricultural groundwater wells were assessed in May 2008. It was determined the wells are already capped, but the wells caps needed to be secured. The securing of the well caps occurred on June 27, 2008 by Bradley and Sons Construction. Before and after photos showing the condition of the wells and subsequent securing of the well caps is included in **Appendix F**.

## **FOLLOW-UP SITE VISIT**

- As noted previously, BIA performed a follow-up site visit on October 29, 2008. A transformer that was observed during prior site visits showed signs of leakage. The stains on the transformer indicated the leak stopped (**Photo 18**).

- A pump attached to one of the wells heads appeared to have leaked hydraulic fluid as the side of the pump was stained (**Photo 19**). This well was capped and secured in November 2008.
- Additional non-hazardous debris was found in one of the concrete cattle feeders. This debris was removed in November 2008.

### **ADJACENT PROPERTIES**

Adjacent properties were observed to the extent feasible without trespassing on private property. The purpose is to determine if current/historical adjacent land uses could affect the future uses of the Subject Property. The following identifies adjacent land uses.

**North:** Private residences, undeveloped parcels, a small auto recycler (northeast border of the Subject Property) and what appeared to be vacant commercial greenhouses.

**South:** Private residences, vineyards, and undeveloped parcels.

**East:** Golden State Boulevard State Route 99.

**West:** Vineyards, orchards, and private residences.

During the site reconnaissance, there did not appear to be any observable adjacent land uses that would affect the planned use of the Subject Property.

### **3.3 INTERVIEWS AND QUESTIONNAIRES**

The tenant that occupied the Subject Property was interviewed during the February 9 and 10, 2005 site visit (Wilton, 2005). Mr. Wilton stated the property has been used for growing non-irrigated feed crops, mostly alfalfa during the previous 10 years. He also stated that he would remove the AST when he vacated the Subject Property.

A standard Phase I property owner and user questionnaire was completed by the property owner's representative on July 3, 2008 (**Appendix D**). AES contacted Madera County Department of Agriculture for more information on pesticide use and agricultural chemical disposal guidelines for Madera County (Key, 2005). Elemental Sulfur is generally used on cattle as an insect repellant. Ms. Key stated that sulfur is sold under several product names, the most prevalent is Thiolux. Sulfur is flammable and should not be disposed by burning. Sulfur can be taken to a sanitary landfill and disposed (Chemical Fact Sheet, 2008).



**PHOTO 1:** Photo of the northern border of the Subject Property. Photo was taken facing east on Avenue 18.



**PHOTO 2:** Photo of the northern portion of the Subject Property. Photo was taken facing west.



**PHOTO 3:** Photo showing a junkyard present along the northeast border of the Subject Property.

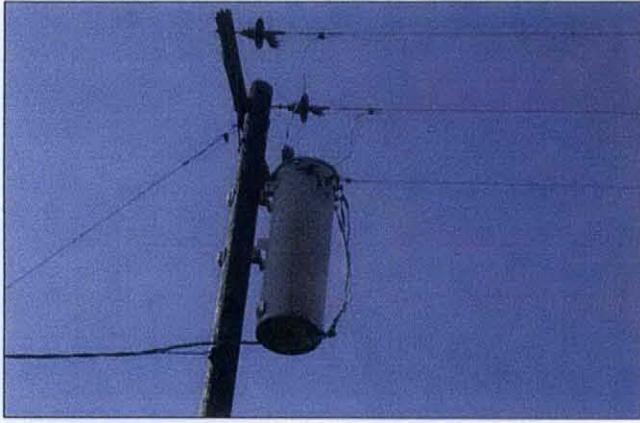


**PHOTO 4:** Photo of one of the agricultural wells located on the Subject Property.



**PHOTO 5:** Photo showing mounted electrical supply box associated with the well in photo 4.





**PHOTO 11:** Photo showing pole mounted transformer.



**PHOTO 13:** Residence, barn and coral areas, and ancillary structures.



**PHOTO 15:** Photo showing the barn, horse and sheep, and corral.



**PHOTO 12:** Private residence located on the southeast corner of the Subject Property.



**PHOTO 14:** Metal storage building.



**PHOTO 16:** Photo showing markers for the buried telephone cables along the northern border of the Subject Property along Avenue 18.



**PHOTO 18:** Pole mounted transformer showing signs of a potential leak.



**PHOTO 17:** Photo showing the empty metal storage building after all materials were removed.



**PHOTO 19:** Pump motor located on one of well showing signs of hydraulic fluid leak.



# **SECTION 4.0**

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## *RECORDS REVIEW*

## SECTION 4.0

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### RECORDS REVIEW

#### 4.1 DATABASE SEARCH

Database searches were conducted for records of known storage tank sites and known sites of hazardous materials generation, storage, and/or contamination. Databases were searched for sites and listings up to two miles from a point roughly equivalent to the center of the Subject Property. The environmental database review was accomplished by using the services of a computerized search firm *Environmental Data Resources, Inc.* (EDR). EDR uses a geographical information system to plot locations of existing or previous hazardous materials involvement. AES reviewed the EDR report to determine if the Subject Property and adjacent sites are listed on regulatory agency databases. The purpose is to determine if adjacent sites will impact surface and/or subsurface conditions on the Subject Property. Included in the EDR database report was a list of “unmapped sites”. AES reviewed the list of unmapped sites for the properties that may be located within the search radius specified for each governmental database. These sites do not appear to be located within the applicable search radius of the Subject Property. The complete list of reviewed databases is provided in the EDR report, included in **Appendix C** and is summarized in **Table 2**. Information on past and/or current hazardous materials involvement involving adjacent properties is summarized in **Section 4.2.2**.

#### 4.2 HAZARDOUS MATERIALS INVOLVEMENT

A regulatory agency database report was performed to identify locations of past and/or current hazardous materials involvement. Although a site may be listed within the database report, this does not mean the site is contaminated or that site would impact the environmental quality of the Subject Property. It should be noted that the database search is only as accurate as the data entered into the government agency maintained databases and the date on which those databases were last updated. Installation of underground storage tanks or hazardous material releases, if not reported to the appropriate agency, would not be listed on any of the databases searched.



**TABLE 2**  
**ENVIRONMENTAL DATA RESOURCES (EDR) SUMMARY OF AGENCY DATABASES**

Agency Database	Survey Distance	Sites Identified
Federal Superfund Liens (NPL <sup>1</sup> RECOVERY)	1.75 miles	0
NPL Liens	1.75 miles	0
Hazardous Materials Information Reporting System (HMIRS)	0.75 miles	0
U.S. EPA Emergency Response Notification System (ERNS) List	0.75 miles	0
U.S. EPA RCRA Registered Large and Small Generators of Hazardous Waste (RCRIS-LQG and RCRIS-SQG)	1.0 miles	0
Brownfields Sites (US BROWNFIELDS)	0.25 miles	0
Corrective Action Reports (Corracts)	1.75 miles	0
U.S. Engineering Controls <sup>2</sup>	0.50 miles	0
U.S. Institutional Controls <sup>3</sup>	0.50 miles	0
Department of Defense Sites (DOD)	1.75 miles	0
CERCIS-NFRAP <sup>4</sup>	1.25 miles	1
Open Dump Inventory (ODI)	1.25 miles	0
Formerly Used Defense Sites (FUDS)	1.75 miles	0
Facility Index System/Facility Registry System (FINDS)	0.75 miles	2
Historical State Hazardous Wastes Sites (Hist Cal-Sites)	1.75 miles	0
California Department of Health Services Bond Expenditure Plan (CA Bond Exp. Plan)	1.75 miles	1
California Waste Discharge System (WDS)	0.75 miles	1
Waste Management Unit Database (WMUDS)	1.25 miles	1
California State Hazardous Wastes and Substances Sites (Cortese)	1.25 miles	1
California Hazardous Material Incident Report System (CHMIRS)	0.75 miles	0
Leaking Underground Storage Tank (LUST) Sites	1.25 miles	1
State Facilities Inventory System (CA FID UST)	1.0 miles	1
State Solid Waste Information System (SWF/LF)	1.25 miles	1
State Spills, Leaks, Investigations, and Cleanups Listing (SLIC)	1.25 miles	1
State Hazardous Substance Storage Container Database (HIST UST)	1.0 miles	1
Statewide Environmental Evaluation and Planning System (SWEEPS UST)	1.0 miles	0
State Proposition 65 Notification Records (Notify 65)	1.75 miles	3
Voluntary Cleanup Program Properties (VCP)	1.25 miles	0
Hazardous Materials Facility and Manifest Data (Haznet)	0.75 miles	6
Drycleaners (DRYCLEANERS)	1.00 miles	0
Emission Inventory Data (EMI)	0.75 miles	0
DTSC's Site Mitigation and Brownfields Reuse Program's EnviroStar Database (ENVIROSTOR)	1.75 miles	2

<sup>1</sup> National Priority List

<sup>2</sup> Engineering controls include various forms of caps, building foundations, liners, and treatment methods to eliminate exposure pathways into environmental media (soils, water) or affect human health.

<sup>3</sup> Institutional controls include administrative measures such as groundwater use restrictions; construction restrictions, property use restrictions, and post remediation care requirements.

<sup>4</sup> Comprehensive Environmental Resource Conservation and Liability Act-No Further Remedial Actions Planned

Source: Environmental Data Resources, 2008

#### 4.2.1 SUBJECT PROPERTY

The Subject Property did not appear on any database searched by EDR as having hazardous materials involvement (EDR, 2008).

#### 4.2.2 ADJACENT PROPERTIES

The database search located nine sites within a two-mile search radius with known history of storage, use, and/or release of hazardous materials. These sites are described below:

1. The Valley Grains Products Inc site is located approximately 0.50 miles northeast of the Subject Property at 23865 Avenue 18. The Valley Grains Products Inc site is listed on several databases including Haznet, State Facilities Inventory System (CA FID UST), California Waste Discharge System (CA WDS), Facility Index System/Facility Registry System (CA FID), and Statewide Environmental Evaluation and Planning System (SWEEPS UST). The Valley Grains Products Inc site produces 0.22 tons of liquids with halogenated compounds. The wastes are removed for off site recycling. The site is also listed on the California Waste Discharge Systems (WDS) permitting database as a Class C industrial facility that treats and/or disposes liquid or semisolid wastes from a servicing, production, manufacturing, or processing operation. The Valley Grains site is under the regulatory authority of the Regional Water Quality Control Board as a Class C facility that poses a minor threat to water quality if a permit violation occurred. The Valley Grains site is listed on the CA FID and SWEEPS UST databases as having a single 500-gallon waste oil tank onsite. The EDR report did not list any reported leaks or spills associated with the Valley Grains Products Inc site.
2. The Horizon Enterprise site is located approximately 0.60 miles from the center of the Subject Property. The EDR radius map shows the Horizon Enterprise site as being located immediately south of the Subject Property at 17286 Golden State Boulevard. The Horizon Enterprise site is listed on the Haznet database as producing 6.74 tons of asbestos containing waste that were removed offsite and disposed within a landfill. The Horizon Enterprise site does not pose a threat to the environmental quality of the Subject Property.
3. The Andrew Tahan site is located approximately 0.25-miles south of the Subject Property at 23783 Avenue 17. The Andrew Tahan site is listed on the HAZNET database as producing 2.53 tons of asbestos containing wastes that were transferred to a landfill. The Andrew Tahan site does not pose a threat to the environmental quality of the Subject Property.

4. The Precision Endmill Grinding site is located approximately 0.25 miles east of the Subject Property at 17513 Baldwin Street. The Precision Endmill Grinding site is listed on the Haznet database as producing 0.18 tons of an aqueous solution containing less than 10% total organic residues. The wastes are transported offsite for recycling. There are no records of hazardous materials releases or violations for the Precision Endmill Grinding site. The Precision Endmill Grinding site does not pose a threat to the environmental quality of the Subject Property.
5. The A-Z Manufacturing site is located approximately 0.30 miles east-southeast of the Subject Property at 17462 Baldwin Street. The radius map identifies the A-Z Manufacturing site as the same location as the Precision Endmill Grinding site, although the EDR report site records show these sites to have different addresses. There are two Haznet records regarding the A-Z Manufacturing site. The first record identifies the site as producing 0.1485 tons of an aqueous solution containing oxygenated solvents (acetone, butanol, ethyl acetate). The second record identifies the site as producing 0.054 tons of an aqueous solution containing oxygenated solvents (acetone, butanol, ethyl acetate). These wastes are transported off site. The A-Z Manufacturing site is also listed on the FINDS database for emission controls systems that are in place at the site. There are no records of hazardous materials releases or violations for the A-Z Manufacturing site. The A-Z Manufacturing Grinding site does not pose a threat to the environmental quality of the Subject Property.
6. The AICO Madera site is located adjacent to the eastern border of the Subject Property at 17486 Road 23. The AICO Madera site is listed on the HAZNET database as producing .0208 tons of off-specification, aged, or surplus organics. The organics are removed off-site for recycling. There are no records of hazardous materials releases or violations for the AICO Madera site. As a result, the AICO Madera site does not pose a threat to the environmental quality of the Subject Property.
7. The Western Star Sandblasting Company site is located approximately 0.30 miles east-southeast of the Subject Property at 17378 Baldwin Street. The Western Star Sandblasting Company site is listed on the AIRS database for possessing a San Joaquin Valley Air Pollution Control District emission control permit. The Western Star Sandblasting Company site does not pose a threat to the environmental quality of the Subject Property.
8. The Pipco Inc site is located approximately 0.35 miles northeast of the Subject Property at 18485 Road 24 and is listed on the Hist UST database as the location of two gasoline storage tanks. The database does not identify whether these are underground or above ground tanks. There are no reported leaks or spills associated with these tanks. The

presence of the tanks does not pose a threat to the environmental quality of the Subject property.

9. The Madera Municipal Airport site is located approximately 0.30-miles south of the Subject Property at 23200 Avenue 17. The Airport site is listed on the CERCLIS and CA Bond Expedite Plan databases for soils contaminated with pesticides. The site is a municipal airport with crop dusting operations involving pesticide contaminated wash and rinse waters running off the site into an unlined ditch that exits the Airport site. Initial assessments were conducted in 1981 and determined soils were affected with dichloro-diphenyl-trichloroethane (DDT), dieldrin, ethion, malathion, and trithion. Samples collected in the ditch contained the following concentrations: DDT – 2,710 parts per million (ppm), dieldrin – 23.0 ppm, ethion – 112 ppm, malathion – 1,110 ppm, and trithion 161 ppm. The Department of Toxic Substance Control (formerly California Department Health Service) required a remedial action plan to be implemented in 1991. No other information regarding the Airport site remediation was included in the database report. The Airport site is also listed as a closed case on the LUST database for leaking tanks. Affected soils were removed and the case was subsequently closed. The Airport site is also listed on the WDS database as having a seasonal or continuous discharge under Waste Discharge Requirements (WDR) permitting through the Regional Water Quality Control Board (RWQCB). The Airport site is located beyond one mile from the Subject Property; is a closed case for LUST, and has over 15 years of documented remedial activities; as a result, the environmental quality of the Subject Property should not be affected by previous hazardous materials involvement at the Airport site.

## **SECTION 5.0**

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### **FINDINGS AND CONCLUSIONS**

## SECTION 5.0

---

### FINDINGS AND CONCLUSIONS

AES performed this Phase I Environmental Site Assessment (ESA) update in conformance with the scope and limitations of ASTM Standard Practice E1527-05 for the Subject Property located at 17488 Golden State Boulevard, Madera CA. Any exceptions to, or deletions from, this practice are described in **Section 1.6** of this Phase I ESA.

Bureau of Indian Affairs (BIA) and AES personnel observed several Recognized Environmental Conditions (RECs) on the Subject Property while performing a Phase I ESA update (**Appendix E**). All RECs were addressed by the property owner during subsequent clean up activities as documented in **Appendix F**. General observations are as follows:

- The Subject Property is comprised of seven contiguous parcels that comprise approximately 305 acres of land. An approximately 1400 square foot (sq/ft) residential structure is present on the eastern portion of the Subject Property. In addition to the residence, several ancillary structures are present on the Subject Property including several garage/shop buildings and barn and corral areas located adjacent to the residence. During the July 12, 2007 site visit, approximately 50 one gallon and several five gallon buckets of household paints, unmarked plastic containers (one and five gallon sized buckets), and miscellaneous non hazardous household debris were noted in these storage buildings. Historical uses of the Subject Property include ranching and agricultural activities.

The current land owner contracted with PARC Environmental to conduct site clean up activities. The work by PARC Environmental was conducted according to state and federal regulations under PARC Environmental Federal EPA number (CAC002627765). The following work occurred on March 24 and June 11, 2008 as documented in the Station Casinos letter to the BIA (**Appendix F**). That work is documented in **Appendix F** and described below:

- All 55-gallon drums, one gallon paint containers, waste oils, and any additional unmarked containers left on the site were removed. Removal of the drums and other items was conducted on March 14, 2008. The 55 gallon drums, paint, waste oils, and other materials were removed from the site and properly disposed of through Rho Chem Corporation. All materials were transported to an offsite facility licensed to accept these



materials. Federal regulations (40 CFR Chapter I Part 262) require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, and disposal facilities to use the Uniform Hazardous Waste Manifest form (8700-22) and for both inter and intrastate transportation of both hazardous materials and suspected hazardous materials. **Appendix F** includes a Uniform Hazardous Waste Manifest and site photos showing removal activities. Chemical analysis for toxicity and volatility were performed to ensure the liquids did not contain other hazardous materials other than waste oils. The 55-gallon drums contained non RCRA waste as noted in **Appendix F**. Any residual amounts of liquid within the 55- gallon drums and suspected hazardous materials containers (one and five gallon containers) were also tested for volatility and toxicity. These tests concluded the contents were not hazardous; the drums were subsequently transported to a metal recycler. All materials removed from the site are documented on the hazardous waste manifest included in **Appendix F**.

- Shane Killian Construction (SKC) conducted a visual inventory of the debris piles located in the central portion of the Subject Property. SKC subsequently removed all non hazardous debris piles (**Appendix F**). The debris was non hazardous in nature as documented in **Appendix F**.
- On June 11, 2008 the stained soils were removed and surface soil sampling was conducted in the areas of the stained soils. The lab report is attached to the Station Casinos letter as **Appendix F**. The results indicate a diesel concentration of 13,000 and 3,400 parts per million (ppm). Additional soil sampling is necessary to delineate affected soils and determine the extent of potential diesel fuel contamination.
- During the June 11, 2008 soil removal a representative from PARC Environmental was instructed to remove the sulfur that was contained within the cattle feeder. The powder was no longer present on June 11, 2008. It is likely the sulfur was dispersed as a result of recent high winds. This release does not pose an immediate threat to the environmental quality of the Subject Property because the amount of sulfur in the feeder was minimal and sulfur is not considered a potential soil and groundwater contaminant (Chemical Fact Sheet, Sulfur, 2008). Therefore, the sulfur requires no further consideration in this ESA.
- The onsite groundwater wells were evaluated by Bradley and Sons Construction in May, 2008 to determine the status of the wells. It was determined the wells are already capped but the well caps needed to be secured. On June 27, 2008, the wells caps were secured according to industry standards to ensure the wells are not a potential conduit for future groundwater contamination. Before and after photos are included in **Appendix F**.

The current land owner has contracted site clean up activities to resolve issues noted during the October 29, 2008 site visit. The work occurred in November 2008, is documented in **Appendix F** and is described below:

- SKC removed two tractor tires and several items of debris from a cattle feeder in November 2008 (**Appendix F**).
- Bradley and Sons Construction secured the well that was found to have leaked hydraulic fluid in November 2008 (**Appendix F**).

Based on information reviewed, limited soil sampling results, AES's site reconnaissance of the Subject Property and adjacent properties, and the interviews and questionnaires described, two outstanding RECs remains in connection with the Subject Property, as described below.

- A Limited Phase II ESA is recommended for the Subject Property to address soils potentially affected with diesel and gasoline. Based on the June 11, 2008 soil sampling data, additional soil sampling is recommended within one of the corral areas. Areas adjacent to the corral area should also be sampled to ensure impacted soils are limited to the corral area. A soil Sampling and Analysis Plan (SAP) should be prepared that includes a scaled map of the corral area; including the location of the stained soils, prior sampling locations, proposed sampling locations, and a summary of laboratory analytical methods, and proposed sampling activities. Based on the results of the limited Phase II ESA, further recommendations will be made to the Subject Property owner as to whether or not soil removal is necessary.
- During a subsequent site visit performed by BIA on October 29, 2008, a pole mounted transformer was observed to have signs of potential leakage. The age of the transformers indicates there is a potential for polychlorinated biphenyls (PCBs) to be present. The presence of the potentially leaking transformer is considered a REC. Therefore, additional surface soil sampling will be necessary under the pole-mounted transformer that appeared to be leaking. Based on the results of the limited Phase II ESA (AES, 2008), further recommendations will be made to the Subject Property owner as to whether or not soil removal is necessary.

## **SECTION 6.0**

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*REPORT AUTHORS/ REFERENCES*

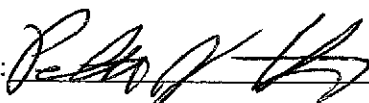
## SECTION 6.0

### REPORT AUTHORS AND REFERENCES

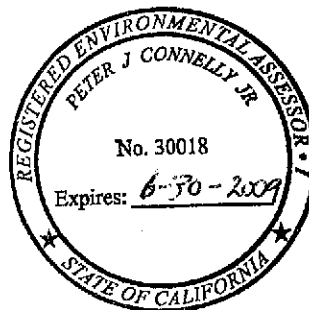
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The undersigned declare to the best of their professional opinion that they meet the definition of Environmental Professional (EP) as defined in §312.10 of 40 CFR 312. Peter Connelly, Registered Environmental Assessor I (REA-I), prepared this report, and has the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. He prepared this report under the professional supervision of David Zweig, P.E. who qualifies as an EP as defined in the ASTM Standard E1527-05. Pete Connelly and David Zweig's signatures appear below, and their resumes are included as **Appendix G**.

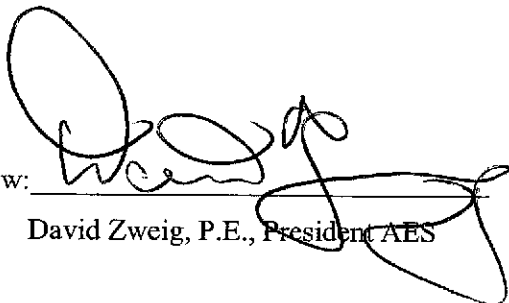
Author:



Peter J Connelly Jr, REA Associate



Review:



David Zweig, P.E., President AES



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American Society for Testing and Materials (ASTM). 2005. Practice E1527-05: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process."

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Key, Marilyn. 2005. Supervisor Pesticide Use Enforcement, Madera County Department of Agriculture, Agricultural Standards. Telephone number (559) 675-7876.

Madera County. 2005a. Madera County Planning Department. Telephone interview March 11 2005. Telephone number (559) 661-6333.

Madera County. 2008b. Madera County Agricultural Commission. Telephone interview June 9, 2008. Telephone number (559) 675-7876.

Shaw, Russ. 2005. Owner's representative. Telephone interview February 15 and February 23, 2005. Telephone number (520) 906-4984.

Wilton, Skip. 2005. On site interview, February 9 and 10, 2005. Subject Property Tenant. 17488 Golden State Blvd, Madera CA.

## ***APPENDICES***

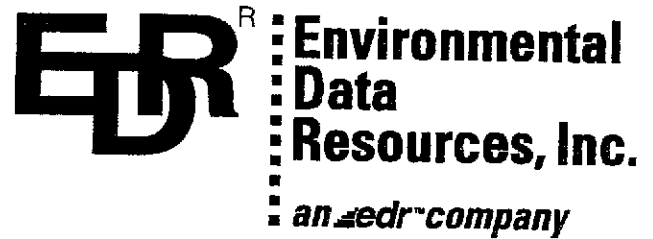
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# ***APPENDIX A***

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## ***HISTORICAL AERIAL PHOTOGRAPHS***



## **The EDR-Aerial Photography Print Service**

**North Fork Site  
Avenue 18  
Madera, CA 93637**

**February 9, 2004**

**Inquiry Number: 1123968-6**

## ***The Source For Environmental Risk Management Data***

**3530 Post Road  
Southport, Connecticut 06490**

**Nationwide Customer Service**

**Telephone: 1-800-352-0050  
Fax: 1-800-231-6802**

# Environmental Data Resources, Inc.

## Aerial Photography Print Service

Environmental Data Resources, Inc.'s (EDR) Aerial Photography Print Service is a screening tool designed to assist professionals in evaluating potential liability on a target property resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources*. *Reasonably ascertainable means information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.*

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.2, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2, page 11).

### Aerial Photographs

Aerial photographs are a valuable historical resource for documenting past land use and can be particularly helpful when other historical sources (such as city directories or fire insurance maps) are not reasonably ascertainable. The EDR Aerial Photograph Print Service includes a search of aerial photograph collections flown by public and private agencies for the state of California. EDR's professional field-based researchers provide digitally reproduced historical aerial photographs at approximately ten year intervals.

Please call EDR Nationwide Customer Service at  
1-800-352-0050 (8a.m-8pm EST)  
with questions or comments about your report.  
*Thank you for your business!*

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1950



1950





1972



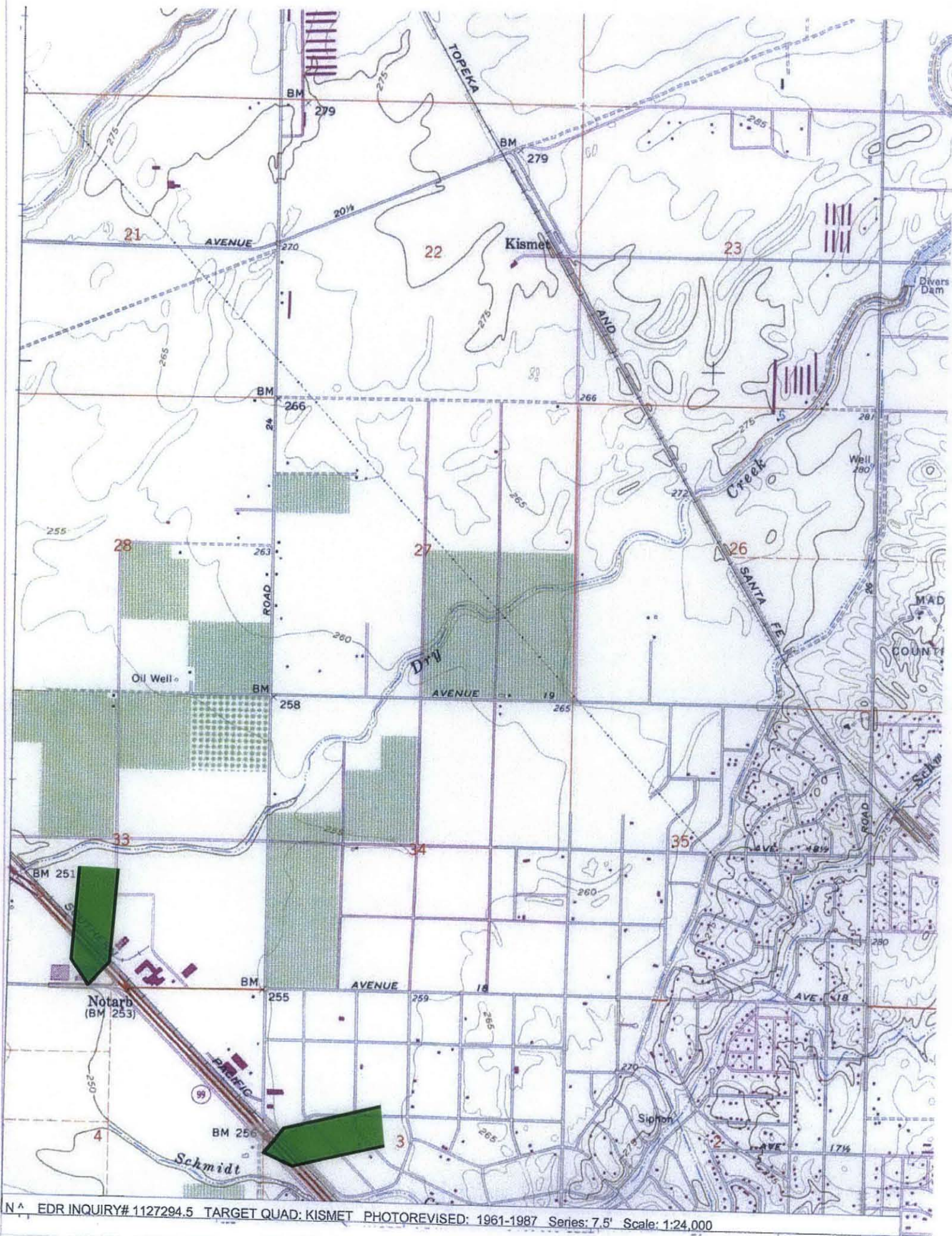


# ***APPENDIX B***

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## ***HISTORICAL TOPOGRAPHIC MAPS***





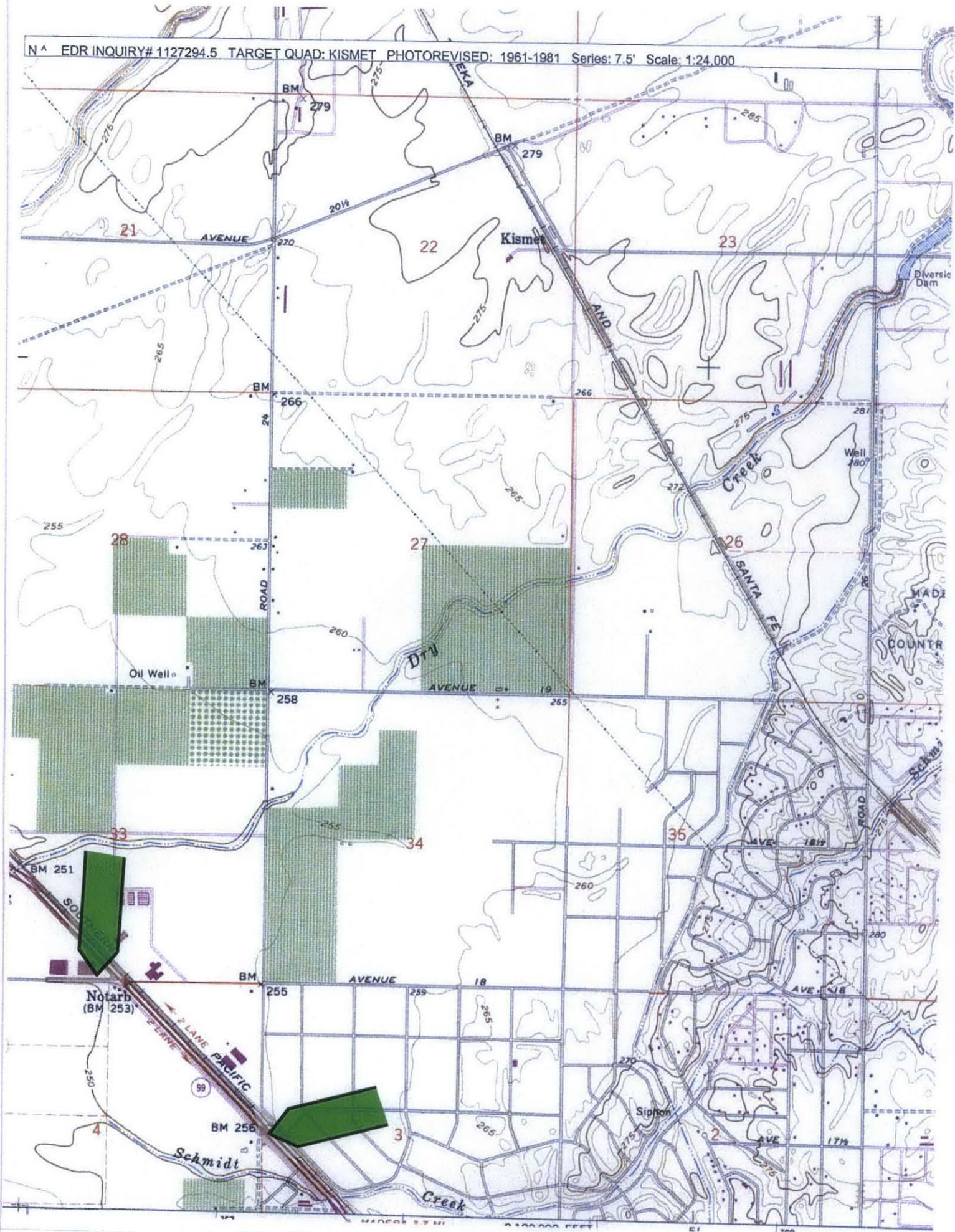


N ^ EDR INQUIRY# 1127294.5 ADJOINING QUAD: BERENDA PHOTOREVISED: 1961-1987 Series: 7.5' Scale: 1:24,000

The map shows a section of Louisiana with the following features:

- Railroads:** Southern Railway and Pacific Railway running diagonally from the top-left to the bottom-right.
- Water Features:** Berenda Creek flowing from the top-right towards the center, and a smaller creek at the bottom-right.
- Roads:** Avenue 20, Avenue 19, Avenue 18, and Dixieland Road.
- Landmarks:** Storage Bins, BM 250, BM 253, BM 249, and several wells (e.g., Well 254, Well 239, Well 248, Well 234, Well 238).
- Topography:** Contour lines indicating elevation, with labels like 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, 290, 295, 300, 305, 310, 315, 320, 325, 330, 335, 340, 345, 350, 355, 360, 365, 370, 375, 380, 385, 390, 395, 400, 405, 410, 415, 420, 425, 430, 435, 440, 445, 450, 455, 460, 465, 470, 475, 480, 485, 490, 495, 500, 505, 510, 515, 520, 525, 530, 535, 540, 545, 550, 555, 560, 565, 570, 575, 580, 585, 590, 595, 600, 605, 610, 615, 620, 625, 630, 635, 640, 645, 650, 655, 660, 665, 670, 675, 680, 685, 690, 695, 700, 705, 710, 715, 720, 725, 730, 735, 740, 745, 750, 755, 760, 765, 770, 775, 780, 785, 790, 795, 800, 805, 810, 815, 820, 825, 830, 835, 840, 845, 850, 855, 860, 865, 870, 875, 880, 885, 890, 895, 900, 905, 910, 915, 920, 925, 930, 935, 940, 945, 950, 955, 960, 965, 970, 975, 980, 985, 990, 995, 1000.
- Other Features:** A borrow pit, a ditch, and a green-shaded area in the bottom-right corner.



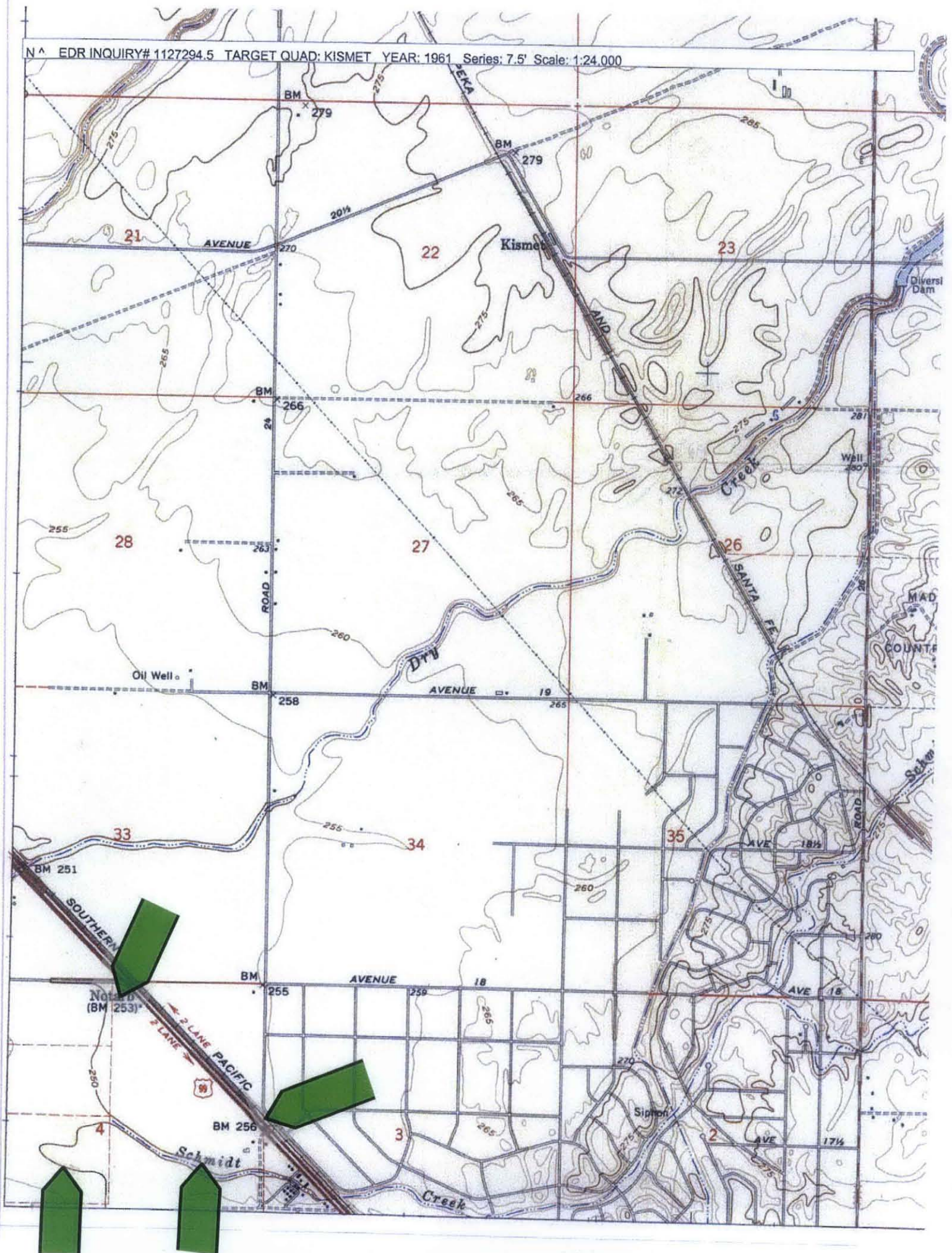






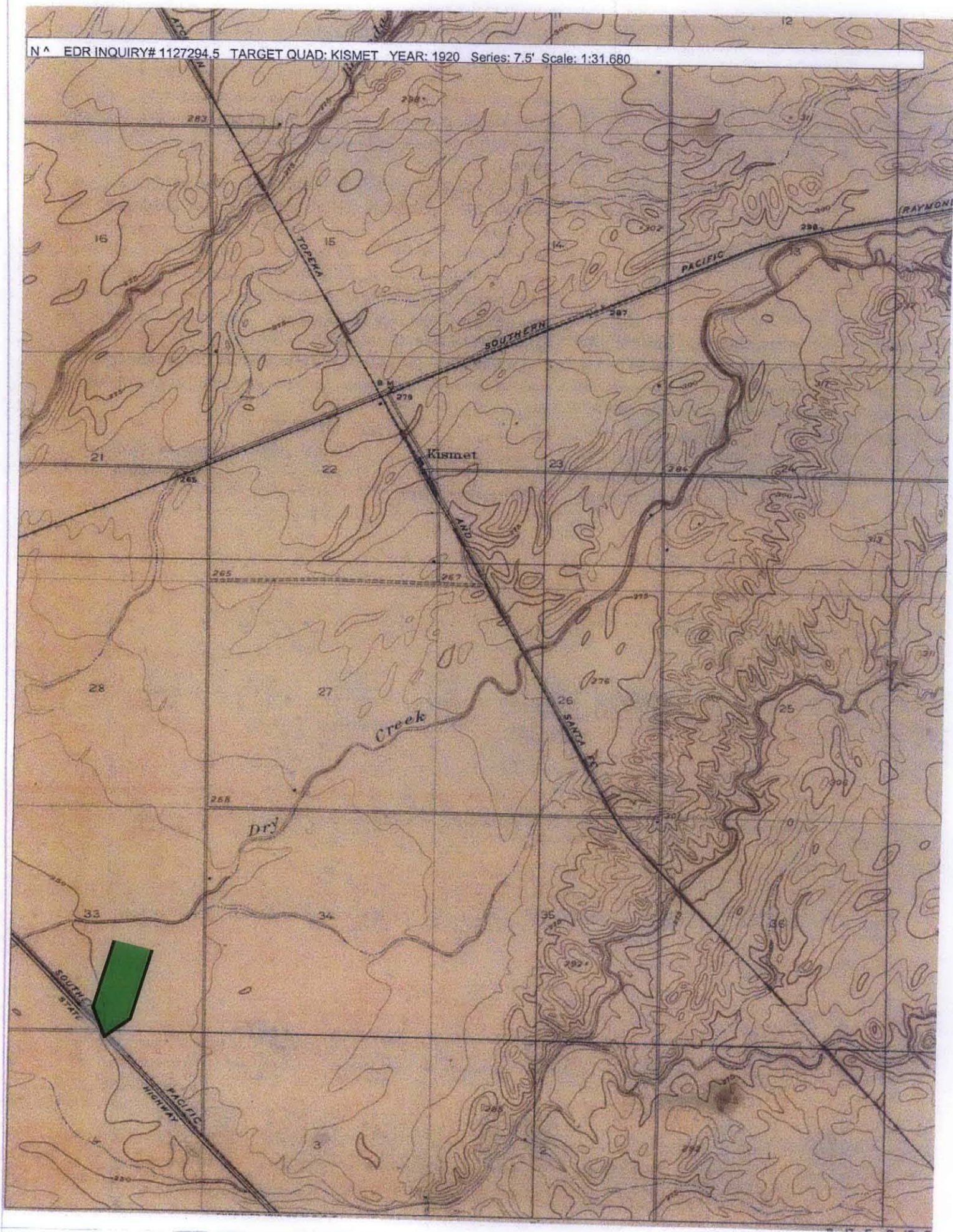


N ^ EDR INQUIRY# 1127294.5 TARGET QUAD: KISMET YEAR: 1961 Series: 7.5' Scale: 1:24,000



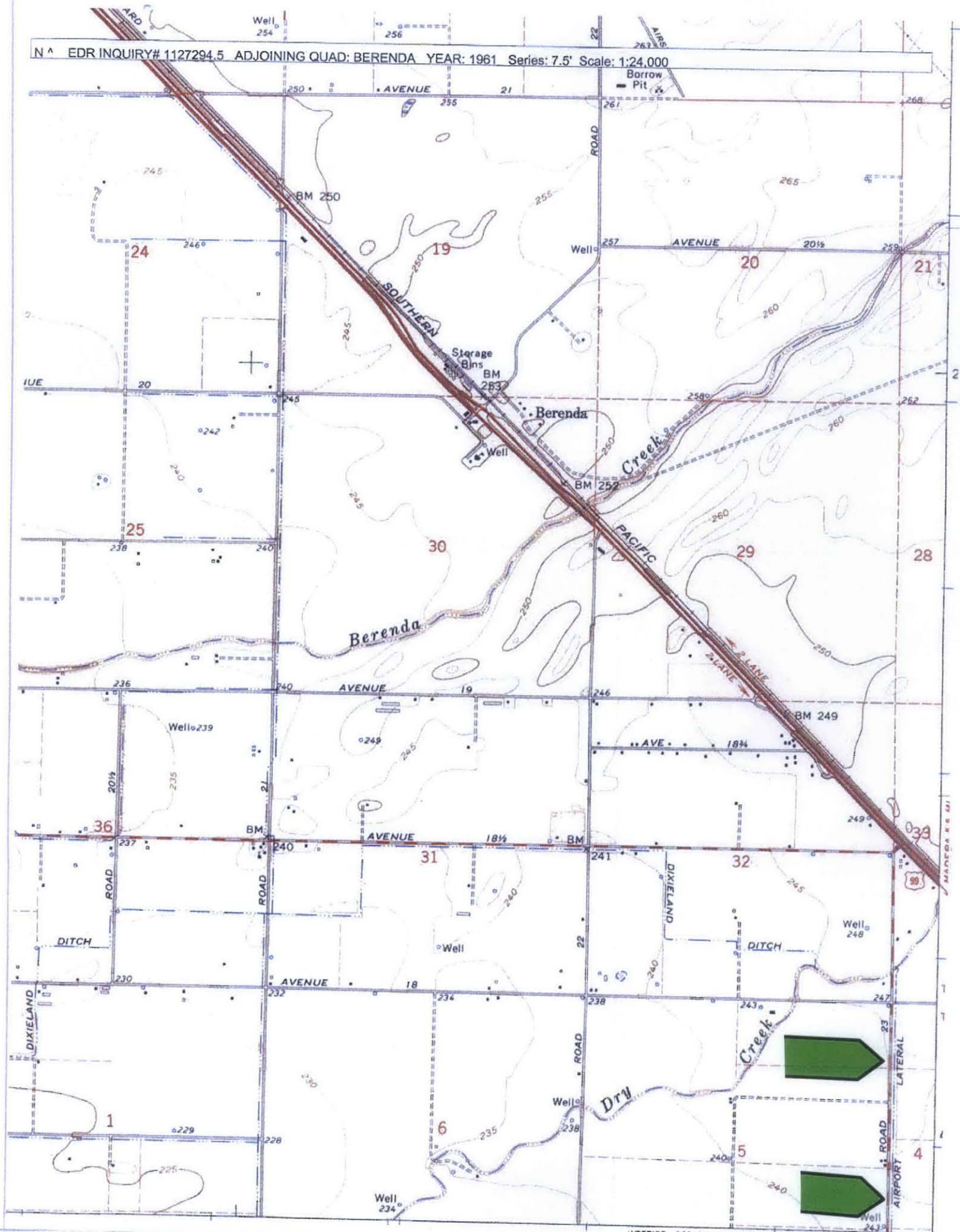


N ^ EDR INQUIRY# 1127294.5 TARGET QUAD: KISMET YEAR: 1920 Series: 7.5' Scale: 1:31,680





N ^ EDR INQUIRY# 1127294.5 ADJOINING QUAD: BERENDA YEAR: 1961 Series: 7.5' Scale: 1:24,000





N A EDR INQUIRY# 1127294.5 TARGET QUAD: LEGRAND YEAR: 1961 Series: 15' Scale: 1:62,500

The map displays a section of the Pacific Electric Railway line running diagonally from the bottom left towards the top right. Key features include:

- Water Features:** Berenda Creek, Slough, and a Diversion Dam on the right side.
- Roads:** A network of roads including Avenue 18, Avenue 19, Avenue 20, Avenue 21, Avenue 22, Avenue 23, Avenue 24, Avenue 25, Avenue 26, Avenue 27, and Avenue 28.
- Landmarks:** Fairmead (BM 251), Berenda (BM 253), Sharon, and Klamet.
- Infrastructure:** A weather station, a borrow pit, and a diversion dam.
- Grid:** A grid system with section numbers ranging from 1 to 36.
- Other Labels:** "MADERA COUNTRY SOLAR" and "HARDY LANE" are also visible.



# ***APPENDIX C***

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## ***ENVIRONMENTAL DATA RESOURCES - DATABASE REPORT***

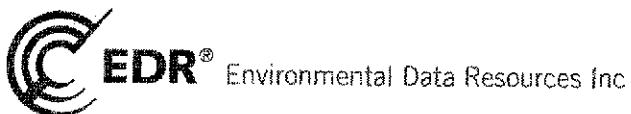


**North Fork Site**

17488 Golden State Boulevard  
Madera, CA 93637

Inquiry Number: 2233038.1s  
June 02, 2008

**The EDR Radius Map™ Report with GeoCheck®**



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*Thank you for your business.*  
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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

17488 GOLDEN STATE BOULEVARD  
MADERA, CA 93637

#### COORDINATES

Latitude (North): 37.005260 - 37° 0' 18.9"  
Longitude (West): 120.116770 - 120° 7' 0.4"  
Universal Transverse Mercator: Zone 10  
UTM X (Meters): 756557.1  
UTM Y (Meters): 4099140.0  
Elevation: 254 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37120-A1 KISMET, CA
Most Recent Revision:	1987
South Map:	36120-H1 MADERA, CA
Most Recent Revision:	1981
Southwest Map:	36120-H2 BONITA RANCH, CA
Most Recent Revision:	1978
West Map:	37120-A2 BERENDA, CA
Most Recent Revision:	1987

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### FEDERAL RECORDS

NPL..... National Priority List

## EXECUTIVE SUMMARY

<b>Proposed NPL</b>	Proposed National Priority List Sites
<b>Delisted NPL</b>	National Priority List Deletions
<b>NPL LIENS</b>	Federal Superfund Liens
<b>CERC-NFRAP</b>	CERCLIS No Further Remedial Action Planned
<b>LIENS 2</b>	CERCLA Lien Information
<b>CORRACTS</b>	Corrective Action Report
<b>RCRA-TSDF</b>	RCRA - Transporters, Storage and Disposal
<b>RCRA-LQG</b>	RCRA - Large Quantity Generators
<b>RCRA-SQG</b>	RCRA - Small Quantity Generators
<b>RCRA-CESQG</b>	RCRA - Conditionally Exempt Small Quantity Generator
<b>RCRA-NonGen</b>	RCRA - Non Generators
<b>US ENG CONTROLS</b>	Engineering Controls Sites List
<b>US INST CONTROL</b>	Sites with Institutional Controls
<b>ERNS</b>	Emergency Response Notification System
<b>HMIRS</b>	Hazardous Materials Information Reporting System
<b>DOT OPS</b>	Incident and Accident Data
<b>US CDL</b>	Clandestine Drug Labs
<b>US BROWNFIELDS</b>	A Listing of Brownfields Sites
<b>DOD</b>	Department of Defense Sites
<b>FUDS</b>	Formerly Used Defense Sites
<b>LUCIS</b>	Land Use Control Information System
<b>CONSENT</b>	Superfund (CERCLA) Consent Decrees
<b>ROD</b>	Records Of Decision
<b>UMTRA</b>	Uranium Mill Tailings Sites
<b>ODI</b>	Open Dump Inventory
<b>DEBRIS REGION 9</b>	Torres Martinez Reservation Illegal Dump Site Locations
<b>MINES</b>	Mines Master Index File
<b>TRIS</b>	Toxic Chemical Release Inventory System
<b>TSCA</b>	Toxic Substances Control Act
<b>FTTS</b>	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
<b>HIST FTTS</b>	FIFRA/TSCA Tracking System Administrative Case Listing
<b>SSTS</b>	Section 7 Tracking Systems
<b>ICIS</b>	Integrated Compliance Information System
<b>PADS</b>	PCB Activity Database System
<b>MLTS</b>	Material Licensing Tracking System
<b>RADINFO</b>	Radiation Information Database
<b>RAATS</b>	RCRA Administrative Action Tracking System

### STATE AND LOCAL RECORDS

<b>HIST Cal-Sites</b>	Historical Calsites Database
<b>SCH</b>	School Property Evaluation Program
<b>Toxic Pits</b>	Toxic Pits Cleanup Act Sites
<b>SWF/LF</b>	Solid Waste Information System
<b>SWRCY</b>	Recycler Database
<b>UST</b>	Active UST Facilities
<b>AST</b>	Aboveground Petroleum Storage Tank Facilities
<b>LIENS</b>	Environmental Liens Listing
<b>CHMIRS</b>	California Hazardous Material Incident Report System
<b>Notify 65</b>	Proposition 65 Records
<b>DEED</b>	Deed Restriction Listing
<b>VCP</b>	Voluntary Cleanup Program Properties
<b>DRYCLEANERS</b>	Cleaner Facilities
<b>WIP</b>	Well Investigation Program Case List



## EXECUTIVE SUMMARY

CDL..... Clandestine Drug Labs  
RESPONSE..... State Response Sites  
HAULERS..... Registered Waste Tire Haulers Listing

### TRIBAL RECORDS

INDIAN RESERV..... Indian Reservations  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land  
INDIAN UST..... Underground Storage Tanks on Indian Land

### EDR PROPRIETARY RECORDS

Manufactured Gas Plants... EDR Proprietary Manufactured Gas Plants

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### FEDERAL RECORDS

**CERCLIS:** The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 04/08/2008 has revealed that there is 1 CERCLIS site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b><i>MADERA MUNI ARPT</i></b>	<b><i>4020 AVIATION DR</i></b>	<b><i>1 - 2 SSE</i></b>	<b><i>C12</i></b>	<b><i>14</i></b>

**FINDS:** The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA

## EXECUTIVE SUMMARY

Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 04/03/2008 has revealed that there are 2 FINDS sites within approximately 0.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
VALLEY GRAIN/AZTECA MILLING	23865 AVENUE 18	1/4 - 1/2 NE	A2	9
A-Z MANUFACTURING	17462 BALDWIN STREET	1/2 - 1 ESE	B8	12

### STATE AND LOCAL RECORDS

**CA BOND EXP. PLAN:** Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there is 1 CA BOND EXP. PLAN site within approximately 1.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MADERA MUNICIPAL AIRPORT	4020 AVIATION DR	1 - 2 SSE	C13	15

**CA WDS:** California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 CA WDS site within approximately 0.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
VALLEY GRAIN PRODUCTS	23865 AVENUE 18	1/4 - 1/2 NE	A1	6

**WMUDS/SWAT:** The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there is 1 WMUDS/SWAT site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MADERA MUNICIPAL AIRPORT	4020 AVIATION DR	1 - 2 SSE	C13	15

**Cortese:** The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

A review of the Cortese list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 Cortese site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MADERA MUNICIPAL AIRPORT	4020 AVIATION DR	1 - 2 SSE	C13	15

## EXECUTIVE SUMMARY

**LUST:** The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 04/08/2008 has revealed that there is 1 LUST site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b> Facility Status: Case Closed	<b>4020 AVIATION DR</b>	<b>1 - 2 SSE</b>	<b>C13</b>	<b>15</b>

**CA FID UST:** The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>VALLEY GRAIN PRODUCTS, INC./BR</b>	<b>23865 AVENUE 18</b>	<b>1/4 - 1/2 NE</b>	<b>A3</b>	<b>9</b>

**SLIC:** SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 04/08/2008 has revealed that there is 1 SLIC site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b> Facility Status: Reopen Previously Closed Case	<b>4020 AVIATION DR</b>	<b>1 - 2 SSE</b>	<b>C13</b>	<b>15</b>

**HIST UST:** Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>PIPCO INC.</b>	<b>18485 ROAD 24</b>	<b>1/2 - 1 NNE</b>	<b>11</b>	<b>13</b>

**SWEEPS UST:** Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>VALLEY GRAIN PRODUCTS, INC./BR</b>	<b>23865 AVENUE 18</b>	<b>1/4 - 1/2 NE</b>	<b>A3</b>	<b>9</b>

## EXECUTIVE SUMMARY

**HAZNET:** The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2006 has revealed that there are 6 HAZNET sites within approximately 0.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>VALLEY GRAIN PRODUCTS</b>	<b>23865 AVENUE 18</b>	<b>1/4 - 1/2NE</b>	<b>A1</b>	<b>6</b>
HORIZON ENTERPRISE	17286 GOLDEN STATE BLVD	1/2 - 1 ESE	4	10
PRECISION ENDMILL GRINDING	17513 BALDWIN ST	1/2 - 1 ESE	B6	11
AZ MANUFACTURING	17462 BALDWIN ST	1/2 - 1 ESE	B7	11
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
ANDREW J TAHAN	23783 AVE 17	1/2 - 1 S	5	10
A I C O MADERA	17486 ROAD 23	1/2 - 1 W	9	12

**AIRS:** Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the AIRS list, as provided by EDR, and dated 12/31/2005 has revealed that there are 2 AIRS sites within approximately 0.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>VALLEY GRAIN PRODUCTS</b>	<b>23865 AVENUE 18</b>	<b>1/4 - 1/2NE</b>	<b>A1</b>	<b>6</b>
WESTERN STAR SANDBLASTING CO.	17378 BALDWIN ST	1/2 - 1 ESE	10	12

**ENVIROSTOR:** The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 02/26/2008 has revealed that there are 2 ENVIROSTOR sites within approximately 1.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b> Facility Status: Refer: RWQCB	<b>4020 AVIATION DR</b>	<b>1 - 2 SSE</b>	<b>C13</b>	<b>15</b>
<b>MADERA AIRPORT</b> Facility Status: Inactive - Needs Evaluation	<b>4020 AVIATION DRIVE</b>	<b>1 - 2 SSE</b>	<b>C14</b>	<b>20</b>

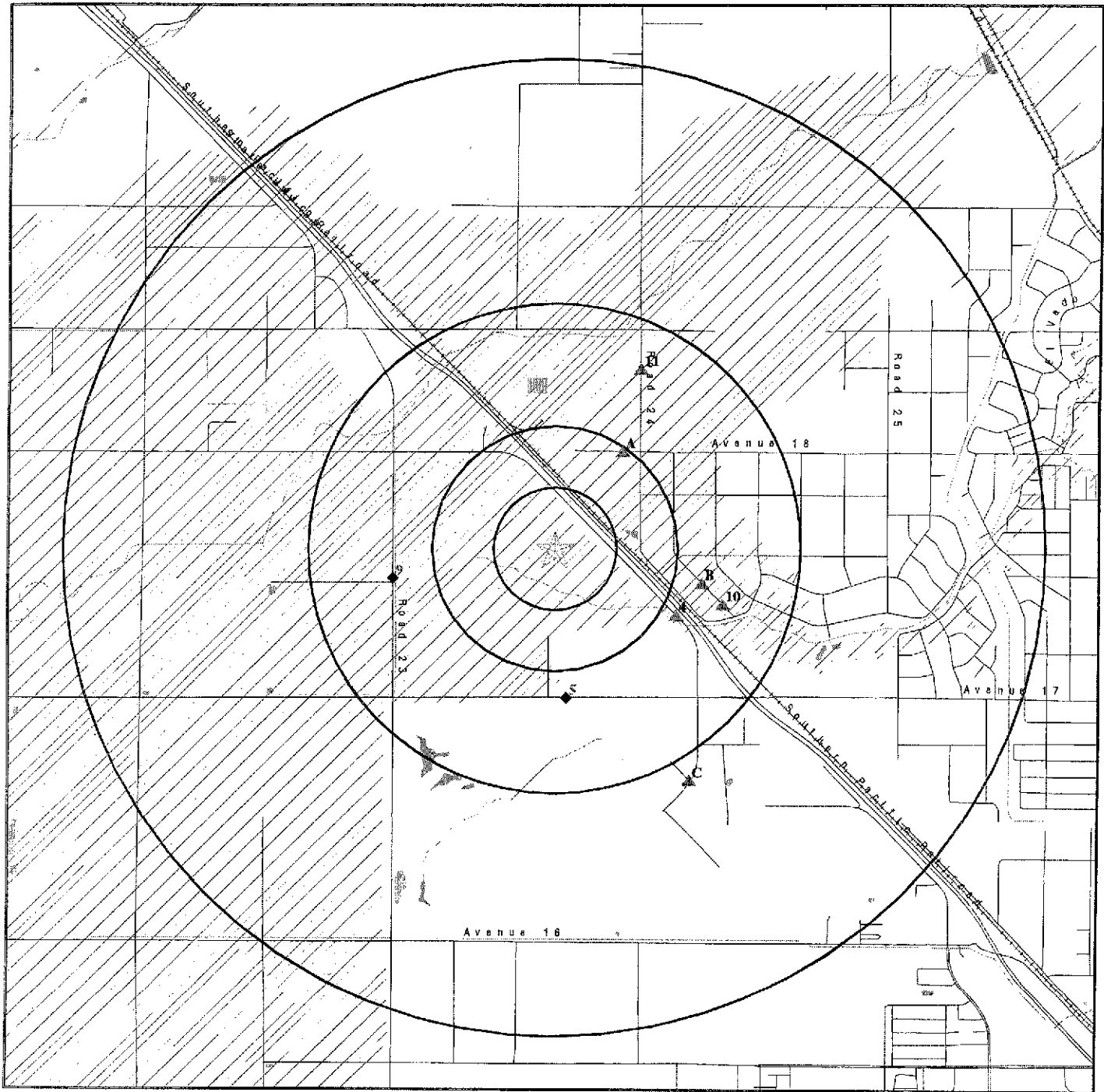


## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
DIXIELAND STORE	CA FID UST, SWEEPS UST
MADERA ALMOND PROCESSING PLANT/MR.	CA FID UST, SWEEPS UST
ROAD 11, S OF AVENUE 17 1/2, (	CDL
AVENUE 5 / ROAD 23 (INTERSECTI	CDL
AVENUE 9, 1/2 MI W OF ROAD 23	CDL
AVENUE 17 BETWEEN ROAD 20 / 19	CDL
AVENUE 14, 14 MI W OF ROAD 23,	CDL
1/2 MILE SOUTH OF AVENUE 18, 1	CDL
ROAD 16 / AVENUE 18 1/2, WEST	CDL
MELIKIAN FARMS, INC.	LUST, Cortese
SHOP-N-GO #598	LUST, Cortese
SHOP N GO	LUST, Cortese
PILOT TRUCK CENTER	UST
ZELINDA BIONDI	HIST UST
CLRJ RANCH PAM RANCH DIVISION	HIST UST
R & M FARMS	HIST UST
SAULSBURY ORCHARDS AND ALMOND	HIST UST
HILLVIEW ORCHARDS	HIST UST
MUSD/CENTRAL SERVICES	HAZNET
CALTRANS DIST 6/ENV AIR NOISE & WA	HAZNET
DEPT OF TRANSPORTATION/DIST 6	HAZNET
JP AUTOMOTIVE REPAIR	HAZNET
PILOT TRAVEL CENTERS LLC # 365	HAZNET
PILOT	HAZNET, AIRS
MADERA SUB STATION	HAZNET
GRAPHIC SCIENCES INC	HAZNET
BETTY CASTRO	HAZNET
SEMPER SPEED & MARINE	HAZNET
ARCANE AUTOMOTIVE	HAZNET
PG&E GREG SUBSTATION GARAGE	HAZNET
HASTSINGS IRRIGATION PIPE CO INC	HAZNET
P G & E	HAZNET
P G & E	HAZNET
GREGG SUBSTATION GARAGE	RCRA-SQG, FINDS
NORTH BOUND ROUTE 99 / .2 MILE SOU	ERNS
STATE ROUTE 99 NORTHBOUND NORTH OF	ERNS
HEARTLAND OPPORTUNITY CENTER	SWRCY
MADERA VALLEY WATER COMPANY	AIRS
FARMERS MARKET	AIRS

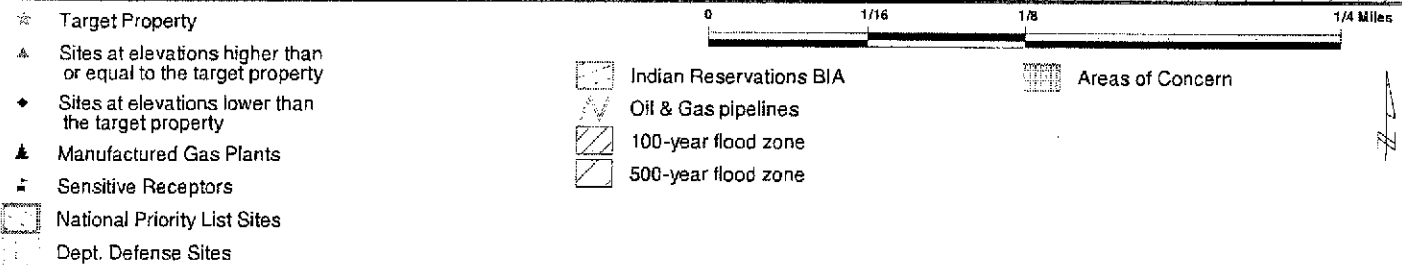
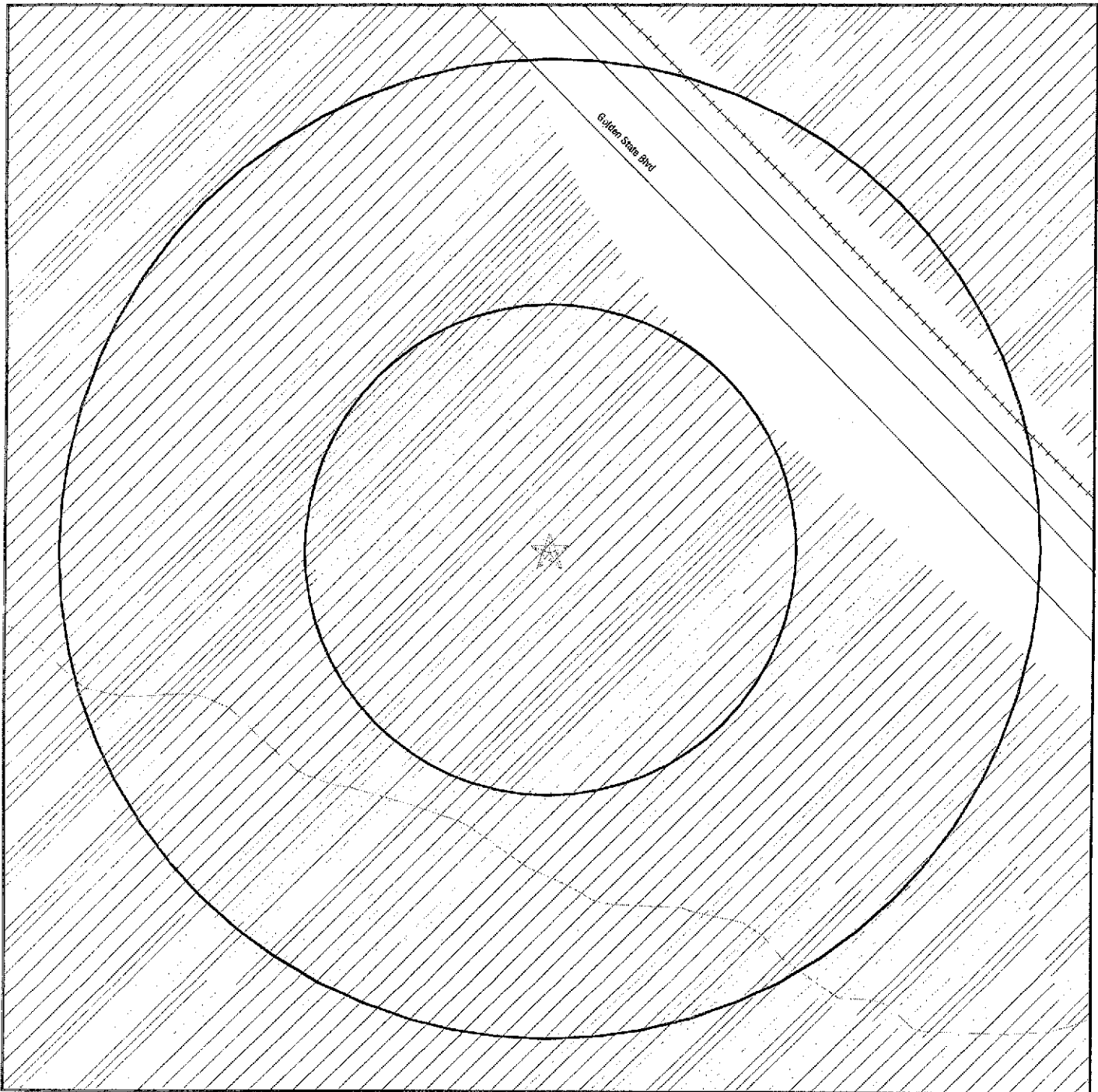
# OVERVIEW MAP - 2233038.1s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- ▲ Oil & Gas pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone
- ▨ National Wetland Inventory
- ▨ Areas of Concern

<p><b>SITE NAME:</b> North Fork Site  <b>ADDRESS:</b> 17488 Golden State Boulevard  Madera CA 93637  <b>LAT/LONG:</b> 37.0053 / 120.1168</p>	<p><b>CLIENT:</b> AES  <b>CONTACT:</b> Pete Connelly  <b>INQUIRY #:</b> 2233038.1s  <b>DATE:</b> June 02, 2008 8:07 am</p>
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# DETAIL MAP - 2233038.1s



SITE NAME: North Fork Site  
 ADDRESS: 17488 Golden State Boulevard  
 Madera CA 93637  
 LAT/LONG: 37.0053 / 120.1168

CLIENT: AES  
 CONTACT: Pete Connelly  
 INQUIRY #: 2233038.1s  
 DATE: June 02, 2008 8:07 am

## MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b><u>FEDERAL RECORDS</u></b>								
NPL		1.750	0	0	0	0	0	0
Proposed NPL		1.750	0	0	0	0	0	0
Delisted NPL		1.750	0	0	0	0	0	0
NPL LIENS		0.750	0	0	0	0	NR	0
CERCLIS		1.250	0	0	0	0	1	1
CERC-NFRAP		1.250	0	0	0	0	0	0
LIENS 2		0.750	0	0	0	0	NR	0
CORRACTS		1.750	0	0	0	0	0	0
RCRA-TSDF		1.250	0	0	0	0	0	0
RCRA-LQG		1.000	0	0	0	0	NR	0
RCRA-SQG		1.000	0	0	0	0	NR	0
RCRA-CESQG		1.000	0	0	0	0	NR	0
RCRA-NonGen		1.000	0	0	0	0	NR	0
US ENG CONTROLS		1.250	0	0	0	0	0	0
US INST CONTROL		1.250	0	0	0	0	0	0
ERNS		0.750	0	0	0	0	NR	0
HMIRS		0.750	0	0	0	0	NR	0
DOT OPS		0.750	0	0	0	0	NR	0
US CDL		0.750	0	0	0	0	NR	0
US BROWNFIELDS		1.250	0	0	0	0	0	0
DOD		1.750	0	0	0	0	0	0
FUDS		1.750	0	0	0	0	0	0
LUCIS		1.250	0	0	0	0	0	0
CONSENT		1.750	0	0	0	0	0	0
ROD		1.750	0	0	0	0	0	0
UMTRA		1.250	0	0	0	0	0	0
ODI		1.250	0	0	0	0	0	0
DEBRIS REGION 9		1.250	0	0	0	0	0	0
MINES		1.000	0	0	0	0	NR	0
TRIS		0.750	0	0	0	0	NR	0
TSCA		0.750	0	0	0	0	NR	0
FTTS		0.750	0	0	0	0	NR	0
HIST FTTS		0.750	0	0	0	0	NR	0
SSTS		0.750	0	0	0	0	NR	0
ICIS		0.750	0	0	0	0	NR	0
PADS		0.750	0	0	0	0	NR	0
MLTS		0.750	0	0	0	0	NR	0
RADINFO		0.750	0	0	0	0	NR	0
FINDS		0.750	0	0	1	1	NR	2
RAATS		0.750	0	0	0	0	NR	0
<b><u>STATE AND LOCAL RECORDS</u></b>								
HIST Cal-Sites		1.750	0	0	0	0	0	0
CA BOND EXP. PLAN		1.750	0	0	0	0	1	1
SCH		1.000	0	0	0	0	NR	0
Toxic Pits		1.750	0	0	0	0	0	0
SWF/LF		1.250	0	0	0	0	0	0



## MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CA WDS		0.750	0	0	1	0	NR	1
WMUDS/SWAT		1.250	0	0	0	0	1	1
Cortese		1.250	0	0	0	0	1	1
SWRCY		1.250	0	0	0	0	0	0
LUST		1.250	0	0	0	0	1	1
CA FID UST		1.000	0	0	1	0	NR	1
SLIC		1.250	0	0	0	0	1	1
UST		1.000	0	0	0	0	NR	0
HIST UST		1.000	0	0	0	1	NR	1
AST		1.000	0	0	0	0	NR	0
LIENS		0.750	0	0	0	0	NR	0
SWEEPS UST		1.000	0	0	1	0	NR	1
CHMIRS		0.750	0	0	0	0	NR	0
Notify 65		1.750	0	0	0	0	0	0
DEED		1.250	0	0	0	0	0	0
VCP		1.250	0	0	0	0	0	0
DRYCLEANERS		1.000	0	0	0	0	NR	0
WIP		1.000	0	0	0	0	NR	0
CDL		0.750	0	0	0	0	NR	0
RESPONSE		1.750	0	0	0	0	0	0
HAZNET		0.750	0	0	1	5	NR	6
AIRS		0.750	0	0	1	1	NR	2
HAULERS		0.750	0	0	0	0	NR	0
ENVIROSTOR		1.750	0	0	0	0	2	2
<b>TRIBAL RECORDS</b>								
INDIAN RESERV		1.750	0	0	0	0	0	0
INDIAN ODI		1.250	0	0	0	0	0	0
INDIAN LUST		1.250	0	0	0	0	0	0
INDIAN UST		1.000	0	0	0	0	NR	0
<b>EDR PROPRIETARY RECORDS</b>								
Manufactured Gas Plants		1.750	0	0	0	0	0	0

### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s) EDR ID Number  
EPA ID Number

**A1** **VALLEY GRAIN PRODUCTS**  
**NE** **23865 AVENUE 18**  
**1/4-1/2** **MADERA, CA 93638**  
**0.484 mi.**  
**2555 ft.** **Site 1 of 3 in cluster A**

**HAZNET** **S102004472**  
**AIRS** **N/A**  
**CA WDS**

**Relative:**  
**Higher**

**HAZNET:**

**Actual:**  
**256 ft.**

Gepaid: CAL000092014  
Contact: KATHY ROW  
Telephone: 5596753400  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 23865 AVENUE 18  
Mailing City,St,Zip: MADERA, CA 936389644  
Gen County: Madera  
TSD EPA ID: IND000646943  
TSD County: 99  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Not reported  
Tons: 0.22  
Facility County: Not reported

Gepaid: CAL000092014  
Contact: KATHY ROW  
Telephone: 5596753400  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 23865 AVENUE 18  
Mailing City,St,Zip: MADERA, CA 936389644  
Gen County: Madera  
TSD EPA ID: IND000646943  
TSD County: 99  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Not reported  
Tons: 0.22  
Facility County: Not reported

Gepaid: CAL000092014  
Contact: KATHY ROW  
Telephone: 5596753400  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 23865 AVENUE 18  
Mailing City,St,Zip: MADERA, CA 936389644  
Gen County: Madera  
TSD EPA ID: IND000646943  
TSD County: 99  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Recycler  
Tons: 0.45  
Facility County: Madera

Gepaid: CAL000092014  
Contact: KATHY ROW  
Telephone: 5596753400  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 23865 AVENUE 18  
Mailing City,St,Zip: MADERA, CA 936389644

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VALLEY GRAIN PRODUCTS (Continued)**

**S102004472**

Gen County: Madera  
TSD EPA ID: Not reported  
TSD County: 99  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Not reported  
Tons: 0.2  
Facility County: Not reported

Gepaid: CAL000092014  
Contact: KATHY ROW  
Telephone: 5596753400  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 23865 AVENUE 18  
Mailing City,St,Zip: MADERA, CA 936389644  
Gen County: Madera  
TSD EPA ID: Not reported  
TSD County: 99  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Recycler  
Tons: 0.22  
Facility County: Not reported

[Click this hyperlink](#) while viewing on your computer to access  
20 additional CA\_HAZNET: record(s) in the EDR Site Report.

**EMI:**

Year: 2000  
Carbon Monoxide Emissions Tons/Yr: 20  
Air Basin: SJV  
Facility ID: 2041  
Air District Name: SJU  
SIC Code: 2096  
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 1  
Reactive Organic Gases Tons/Yr: 0  
Carbon Monoxide Emissions Tons/Yr: 1  
NOX - Oxides of Nitrogen Tons/Yr: 21  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2001  
Carbon Monoxide Emissions Tons/Yr: 20  
Air Basin: SJV  
Facility ID: 2041  
Air District Name: SJU  
SIC Code: 2096  
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System: Y  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 0  
Reactive Organic Gases Tons/Yr: 0  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 16

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VALLEY GRAIN PRODUCTS (Continued)**

**S102004472**

SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0  
  
Year: 2002  
Carbon Monoxide Emissions Tons/Yr: 20  
Air Basin: SJV  
Facility ID: 2041  
Air District Name: SJU  
SIC Code: 2096  
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System: Y  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 1  
Reactive Organic Gases Tons/Yr: 0  
Carbon Monoxide Emissions Tons/Yr: 3  
NOX - Oxides of Nitrogen Tons/Yr: 7  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

**CA WDS:**

Facility ID: San Joaquin 202008001  
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.  
  
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.  
  
NPDES Number: Not reported  
Subregion: 0  
Facility Telephone: Not reported  
Facility Contact: DIANA WATKINS  
Agency Name: AZTECA MILLING/VALLEY GRAIN  
Agency Address: 23865 AVE 18  
Agency City,St,Zip: MADERA 93638  
Agency Contact: BARRY RUNYON  
Agency Telephone: Not reported  
Agency Type: Private  
SIC Code: 723  
SIC Code 2: Not reported  
Primary Waste: Process Waste (Waste produced as part of the industrial/manufacturing process)  
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.  
  
Secondary Waste: Not reported  
Secondary Waste Type: Not reported  
Design Flow: 0  
Baseline Flow: 0  
Reclamation: No reclamation requirements associated with this facility.  
POTW: The facility is not a POTW.  
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

VALLEY GRAIN PRODUCTS (Continued)

S102004472

Complexity:

to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.  
Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

A2 VALLEY GRAIN/AZTECA MILLING  
NE 23865 AVENUE 18  
1/4-1/2 MADERA, CA 93638  
0.484 mi.  
2555 ft. Site 2 of 3 in cluster A

FINDS 1008243002  
110021345034

Relative: FINDS:  
Higher Other Pertinent Environmental Activity Identified at Site

Actual: The NEI (National Emissions Inventory) database contains information  
256 ft. on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

A3 VALLEY GRAIN PRODUCTS, INC./BRIAN OKLAND OPERATION  
NE 23865 AVENUE 18  
1/4-1/2 MADERA, CA 93639  
0.484 mi.  
2555 ft. Site 3 of 3 in cluster A

CA FID UST S101588406  
SWEEPS UST N/A

Relative: CA FID UST:  
Higher Facility ID: 20000370  
Regulated By: UTKI  
Actual: Regulated ID: Not reported  
256 ft. Cortese Code: Not reported  
SIC Code: Not reported  
Facility Phone: 2096753400  
Mail To: Not reported  
Mailing Address: 23865 AVENUE 18  
Mailing Address 2: Not reported  
Mailing City, St, Zip: MADERA 93639  
Contact: Not reported  
Contact Phone: Not reported  
DUNs Number: Not reported  
NPDES Number: Not reported  
EPA ID: Not reported  
Comments: Not reported  
Status: Inactive

SWEEPS UST:  
Status: Not reported  
Comp Number: 100157  
Number: Not reported  
Board Of Equalization: 44-013712  
Ref Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

VALLEY GRAIN PRODUCTS, INC./BRIAN OKLAND OPERATION (Continued)

S101588406

Act Date: Not reported  
Created Date: Not reported  
Tank Status: Not reported  
Owner Tank Id: Not reported  
Swrcb Tank Id: 20-000-100157-001148  
Actv Date: Not reported  
Capacity: 500  
Tank Use: OIL  
Stg: WASTE  
Content: Not reported  
Number Of Tanks: 1

4  
ESE  
1/2-1  
0.562 mi.  
2969 ft.

HORIZON ENTERPRISE  
17286 GOLDEN STATE BLVD  
MADERA, CA 93637

HAZNET S108748523  
N/A

Relative:  
Higher

HAZNET:  
Gepaid: CAC002606602  
Contact: STEVEN WEIL  
Telephone: 5594491775  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 586 W BARSTOW AVE  
Mailing City,St,Zip: FRESNO, CA 937041935  
Gen County: Madera  
TSD EPA ID: CAL000190080  
TSD County: San Joaquin  
Waste Category: Asbestos-containing waste  
Disposal Method: Disposal, Land Fill  
Tons: 6.74  
Facility County: Madera

Actual:  
257 ft.

5  
South  
1/2-1  
0.610 mi.  
3219 ft.

ANDREW J TAHAN  
23783 AVE 17  
MADERA, CA 93637

HAZNET S103950185  
N/A

Relative:  
Lower

HAZNET:  
Gepaid: CAC001031752  
Contact: ANDREW TAHAN  
Telephone: 0000000000  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 31355 AVE 10  
Mailing City,St,Zip: MADERA, CA 936380000  
Gen County: Madera  
TSD EPA ID: CAL000027741  
TSD County: 5  
Waste Category: Asbestos-containing waste  
Disposal Method: Disposal, Land Fill  
Tons: 2.5284  
Facility County: Madera

Actual:  
252 ft.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

B6  
ESE  
1/2-1  
0.616 mi.  
3252 ft.

PRECISION ENDMILL GRINDING  
17513 BALDWIN ST  
MADERA, CA 93638

Site 1 of 3 in cluster B

Relative:  
Higher

Actual:  
258 ft.

HAZNET:

Gepaid: CAL000254488  
Contact: RICHARD TOGNOTTI  
Telephone: 5596738140  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 17513 BALDWIN ST  
Mailing City,St,Zip: MADERA, CA 93638  
Gen County: Madera  
TSD EPA ID: CAT080033681  
TSD County: Los Angeles  
Waste Category: Aqueous solution with less than 10% total organic residues  
Disposal Method: Recycler  
Tons: 0.18  
Facility County: Not reported

Database(s)

EDR ID Number  
EPA ID Number

HAZNET S108217201  
N/A

B7  
ESE  
1/2-1  
0.655 mi.  
3456 ft.

AZ MANUFACTURING  
17462 BALDWIN ST  
MADERA, CA 93638

Site 2 of 3 in cluster B

Relative:  
Higher

Actual:  
259 ft.

HAZNET:

Gepaid: CAL000177564  
Contact: WILBUR OLSON  
Telephone: 0000000000  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 15429 ROAD 28 1/2  
Mailing City,St,Zip: MADERA, CA 936382326  
Gen County: Madera  
TSD EPA ID: CAT000613893  
TSD County: Los Angeles  
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)  
Disposal Method: Transfer Station  
Tons: .1485  
Facility County: Madera

Gepaid: CAL000177564  
Contact: WILBUR OLSON  
Telephone: 0000000000  
Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: 15429 ROAD 28 1/2  
Mailing City,St,Zip: MADERA, CA 936382326  
Gen County: Madera  
TSD EPA ID: CAT000613893  
TSD County: Los Angeles  
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)  
Disposal Method: Not reported  
Tons: .0540  
Facility County: Madera

HAZNET S103636271  
N/A

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number

EPA ID Number

**B8**  
**ESE**  
**1/2-1**  
**0.655 mi.**  
**3456 ft.**  
**A-Z MANUFACTURING**  
**17462 BALDWIN STREET**  
**MADERA, CA 93638**  
**Site 3 of 3 in cluster B**

**FINDS** **1007467043**  
**110017404655**

**Relative:** **FINDS:**  
**Higher** Other Pertinent Environmental Activity Identified at Site

**Actual:** RACT/BACT/LAER Clearinghouse (RBLC) data base contains case-specific  
**259 ft.** information on the 'Best Available' air pollution technologies that  
have been required to reduce the emission of air pollutants from  
stationary sources (e.g., power plants, steel mills, chemical plants,  
etc.). This information has been provided by State and local  
permitting agencies. The Clearinghouse also contains a regulation data  
base that summarizes EPA emission limits required in New Source  
Performance Standards (NSPS), National Emission Standards for  
Hazardous Air Pollutants (NESHAP), and Maximum Achievable Control  
Technology (MACT) standards.

**9**  
**West**  
**1/2-1**  
**0.668 mi.**  
**3528 ft.**  
**A I C O MADERA**  
**17486 ROAD 23**  
**MADERA, CA 93637**

**HAZNET** **S103636288**  
**N/A**

**Relative:** **HAZNET:**  
**Lower** Gepaid: CAC001346904  
Contact: NADIM JABJI/PRES  
**Actual:** Telephone: 0000000000  
**248 ft.** Facility Addr2: Not reported  
Mailing Name: Not reported  
Mailing Address: PO BOX 5994  
Mailing City,St,Zip: FRESNO, CA 937550000  
Gen County: Madera  
TSD EPA ID: CAD008302903  
TSD County: Los Angeles  
Waste Category: Off-specification, aged, or surplus inorganics  
Disposal Method: Recycler  
Tons: .0208  
Facility County: Madera

**10**  
**ESE**  
**1/2-1**  
**0.721 mi.**  
**3806 ft.**  
**WESTERN STAR SANDBLASTING CO.**  
**17378 BALDWIN ST**  
**MADERA, CA 93638**

**AIRS** **S106921762**  
**N/A**

**Relative:** **EMI:**  
**Higher** Year: 2003  
Carbon Monoxide Emissions Tons/Yr: 20  
**Actual:** Air Basin: SJV  
**259 ft.** Facility ID: 1371  
Air District Name: SJU  
SIC Code: 3471  
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System: Not reported



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

WESTERN STAR SANDBLASTING CO. (Continued)

S106921762

Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 0  
Reactive Organic Gases Tons/Yr: 0  
Carbon Monoxide Emissions Tons/Yr: 0  
NOX - Oxides of Nitrogen Tons/Yr: 0  
SOX - Oxides of Sulphur Tons/Yr: 0  
Particulate Matter Tons/Yr: 0  
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2004  
Carbon Monoxide Emissions Tons/Yr: 20  
Air Basin: SJV  
Facility ID: 1371  
Air District Name: SJU  
SIC Code: 3471  
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: 0.024246685  
Reactive Organic Gases Tons/Yr: 0.020287201  
Carbon Monoxide Emissions Tons/Yr: 0.064464003  
NOX - Oxides of Nitrogen Tons/Yr: 0.296408014  
SOX - Oxides of Sulphur Tons/Yr: 0.019718401  
Particulate Matter Tons/Yr: 0.055672001  
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0.050333873

Year: 2005  
Carbon Monoxide Emissions Tons/Yr: 20  
Air Basin: SJV  
Facility ID: 1371  
Air District Name: SJU  
SIC Code: 3471  
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System: Not reported  
Consolidated Emission Reporting Rule: Not reported  
Total Organic Hydrocarbon Gases Tons/Yr: .0242466845149931875  
Reactive Organic Gases Tons/Yr: .0202872009336948  
Carbon Monoxide Emissions Tons/Yr: .0644640029668808  
NOX - Oxides of Nitrogen Tons/Yr: .296408013641834  
SOX - Oxides of Sulphur Tons/Yr: .0197184009075165  
Particulate Matter Tons/Yr: .0556720009744167  
Part. Matter 10 Micrometers & Smllr Tons/Yr: .0503338729510306992

11  
NNE  
1/2-1  
0.813 mi.  
4292 ft.

PIPCO INC.  
18485 ROAD 24  
MADERA, CA 93638

HIST UST U001589577  
N/A

Relative:  
Higher

HIST UST:  
Region: STATE  
Facility ID: 00000038183  
Facility Type: Other  
Other Type: FARMING  
Total Tanks: 0002  
Contact Name: ROBERT PAUL  
Telephone: 2096746675  
Owner Name: PIPCO, INC. GROWERS-PACKERS-SH

Actual:  
256 ft.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PIPCO INC. (Continued)**

**U001589577**

Owner Address: 18485 ROAD 24  
Owner City,St,Zip: MADERA, CA 93638

Tank Num: 001  
Container Num: 1  
Year Installed: 1965  
Tank Capacity: 00000500  
Tank Used for: PRODUCT  
Type of Fuel: UNLEADED  
Tank Construction: 1/4 inches  
Leak Detection: Not reported

Tank Num: 002  
Container Num: 2  
Year Installed: 1965  
Tank Capacity: 00000500  
Tank Used for: PRODUCT  
Type of Fuel: REGULAR  
Tank Construction: 1/4 inches  
Leak Detection: Not reported

**C12** **MADERA MUNI ARPT**  
**SSE** **4020 AVIATION DR**  
**> 1** **MADERA, CA 93637**  
**1.095 mi.**  
**5781 ft.** **Site 1 of 3 in cluster C**

**CERCLIS** **1000212190**  
**FINDS** **CAD980636898**

**Relative:** **CERCLIS:**  
**Higher** **Site ID:** 0901852  
**Actual:** **Federal Facility:** Not a Federal Facility  
**256 ft.** **NPL Status:** Not on the NPL  
**Non NPL Status:** NFRAP

**CERCLIS Site Contact Name(s):**

**Contact Name:** Dawn Richmond  
**Contact Tel:** (415) 972-3097  
**Contact Title:** Site Assessment Manager (SAM)

**Contact Name:** Karen Jurist  
**Contact Tel:** (415) 972-3219  
**Contact Title:** Site Assessment Manager (SAM)

**Contact Name:** Jeff Inglis  
**Contact Tel:** (415) 972-3095  
**Contact Title:** Site Assessment Manager (SAM)

**Site Description:** PRPs are actively remediating the site, EPA to receive closure reports

**CERCLIS Assessment History:**

**Action:** DISCOVERY  
**Date Started:** Not reported  
**Date Completed:** 12/01/1979  
**Priority Level:** Not reported

**Action:** PRELIMINARY ASSESSMENT  
**Date Started:** Not reported  
**Date Completed:** 04/01/1987  
**Priority Level:** Low

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

MADERA MUNI ARPT (Continued)

1000212190

Action: HAZARD RANKING SYSTEM PACKAGE  
Date Started: Not reported  
Date Completed: 08/01/1987  
Priority Level: Not reported

Action: SITE INSPECTION  
Date Started: Not reported  
Date Completed: 09/01/1987  
Priority Level: High

Action: EXPANDED SITE INSPECTION  
Date Started: Not reported  
Date Completed: 03/09/1989  
Priority Level: Recommended for HRS Scoring

Action: SITE REASSESSMENT  
Date Started: 07/01/2002  
Date Completed: 07/06/2004  
Priority Level: NFRAP (No Further Remedial Action Planned)

FINDS:

Other Pertinent Environmental Activity Identified at Site

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

C13 MADERA MUNICIPAL AIRPORT  
SSE 4020 AVIATION DR  
> 1 MADERA, CA 93637  
1.095 mi.  
5781 ft. Site 2 of 3 in cluster C

Relative:  
Higher

Actual:  
256 ft.

LUST:  
Region: STATE  
Case Type: Soil only  
Cross Street: AVE 17  
Enf Type: Not reported  
Funding: Undefined  
How Discovered: Tank Test  
How Stopped: Not reported  
Leak Cause: Overfill  
Leak Source: Tank  
Global Id: T0603900044  
Stop Date: Not reported  
Confirm Leak: Not reported  
Workplan: Not reported  
Prelim Assess: Not reported  
Pollution Char: Not reported  
Remed Plan: Not reported  
Remed Action: Not reported

LUST S100833198  
Cortese N/A  
WMUDS/SWAT  
CA BOND EXP. PLAN  
SLIC  
ENVIROSTOR

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**MADERA MUNICIPAL AIRPORT (Continued)**

**S100833198**

Monitoring: Not reported  
Close Date: 1987-12-29 00:00:00  
Discover Date: 1987-12-16 00:00:00  
Enforcement Dt: 1965-01-01 00:00:00  
Release Date: 1987-12-29 00:00:00  
Review Date: 1987-12-29 00:00:00  
Enter Date: 1988-01-07 00:00:00  
MTBE Date: Not reported  
GW Qualifier: Not reported  
Soil Qualifier: Not reported  
Max MTBE GW ppb: Not reported  
Max MTBE Soil ppb: Not reported  
County: 20  
Org Name: Not reported  
Reg Board: 5F  
Status: Case Closed  
Chemical: Gasoline  
Contact Person: Not reported  
Responsible Party: CITY OF MADERA  
RP Address: 205 W. FOURTH, MADERA, CA 93637  
Interim: Not reported  
Oversight Prgm: LUST  
MTBE Class: \*  
MTBE Conc: 0  
MTBE Fuel: 1  
MTBE Tested: Site NOT Tested for MTBE. Includes Unknown and Not Analyzed.  
Staff: JWH  
Staff Initials: DEL  
Lead Agency: Local Agency  
Local Agency: 20000  
Hydr Basin #: SAN JOAQUIN VALLEY (  
Beneficial: Not reported  
Priority: 4  
Cleanup Fund Id: Not reported  
Work Suspended: No  
Local Case #: Not reported  
Case Number: 5T20000044  
Qty Leaked: Not reported  
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)  
Operator: SUALLEY, JIM  
Water System Name: Not reported  
Well Name: Not reported  
Distance To Lust: 0  
Waste Discharge Global ID: Not reported  
Waste Disch Assigned Name: Not reported  
Summary: AIRCRAFT FUEL.

**LUST:**

Region: 5  
Case Number: 5T20000044  
Staff Initials: JWH  
Substance: GASOLINE  
Case Type: Soil only  
Status: Case Closed  
Lead Agency: Local  
Program: LUST



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**MADERA MUNICIPAL AIRPORT (Continued)**

**S100833198**

MTBE Code: N/A

**Cortese:**

Region: CORTESE  
Facility Addr2: 4020 AVIATION DR

**WMUDS/SWAT:**

Edit Date: Not reported  
Complexity: Category A - Any major NPDES facility, any non-NPDES facility (particularly those with toxic wastes) that would be a major if discharge was made to surface or ground waters, or any Class I disposal site. Includes any small-volume complex facility (particularly those with toxicwastes) with numerous discharge points, leak detection systems or ground water monitoring wells.  
Primary Waste: Process Waste (Waste produced as part of the industrial/manufacturing process)  
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.  
Secondary Waste: Not reported  
Secondary Waste Type: Not reported  
Base Meridian: Not reported  
NPID: Not reported  
Tonnage: 0  
Regional Board ID: Not reported  
Municipal Solid Waste: False  
Superorder: False  
Open To Public: False  
Waste List: False  
Agency Type: City  
Agency Name: MADERA, CITY OF  
Agency Department: Not reported  
Agency Address: 205 W 4TH ST  
Agency City,St,Zip: MADERA CA 93637  
Agency Contact: SAM M SCHEIDER  
Agency Telephone: 5596746958  
Land Owner Name: Not reported  
Land Owner Address: Not reported  
Land Owner City,St,Zip: Not reported  
Land Owner Contact: Not reported  
Land Owner Phone: Not reported  
Region: 5F  
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)  
Facility Description: Not reported  
Facility Telephone: Not reported  
SWAT Facility Name: Not reported  
Primary SIC: 2879  
Secondary SIC: Not reported  
Comments: Not reported  
Last Facility Editors: Not reported  
Waste Discharge System: True  
Solid Waste Assessment Test Program: False  
Toxic Pits Cleanup Act Program: False  
Resource Conservation Recovery Act: False

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

EDR ID Number  
EPA ID Number

Database(s)

**MADERA MUNICIPAL AIRPORT (Continued)**

**S100833198**

Department of Defence: False  
Solid Waste Assessment Test Program: Not reported  
Threat to Water Quality: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.  
Sub Chapter 15: True  
Regional Board Project Officer: ESB  
Number of WMUDS at Facility: 1  
Section Range: Not reported  
RCRA Facility: No  
Waste Discharge Requirements: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.  
Self-Monitoring Rept. Frequency: Annual Submittal  
Waste Discharge System ID: 5C200101003  
Solid Waste Information ID: Not reported

**CA BOND EXP. PLAN:**

Responsible Party: RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN  
Project Revenue Source Company: Not reported  
Project Revenue Source Addr: Not reported  
Project Revenue Source City,St,Zip: Not reported  
Project Revenue Source Desc: In September, 1984, the City of Madera hired Twining Labs, Inc., to complete a

proposal for a geotechnical investigation. This proposal was completed in December, 1984. The City of Madera will fund further characterization and remedial action at this site. The Department has budgeted \$50,000 for direct costs associated with the site. DHS will attempt to recover 100 percent of direct costs plus staff costs and overhead related to the project. The responsible parties will pay all costs associated with remedial investigations and cleanup activities.  
Site Description: The site is a municipal airport with crop dusting operations, involving pesticide-contaminated wash and rinse waters running off to an unlined ditch. There is an irrigation and drainage evaporation pond approximately 1.5 miles downstream from the point of discharge.

Hazardous Waste Desc: DDT, malathion, dieldrin, ethion and trithion were found at high levels at the point of discharge to the ditch. DDT was found in a soil sample taken at the pond. The estimated waste volume is 1,500 drums. Samples taken from the canal/ditch indicated the following analyses: DDT - 2,710 milligrams per kilogram (mg/kg); dieldrin - 23.0 mg/kg; ethion - 112 mg/kg; malathion - 1,110 mg/kg; and trithion - 161 mg/kg.

Threat To Public Health & Env: Within a one mile radius, there is a trailer park with 50 trailers; also approximately 20 residences and 50 industrial employees. No critical animal habitats are within a one mile radius. Pathways for migration or contact are surface water and direct contact. Depth to ground water is 90 feet. The site geology is alluvium, chiefly from granitic sources and clay lenses 3 to 20 feet from the surface. A barbed wire fence surrounds the airport.

Site Activity Status: DHS will be negotiating a stipulated remedial action order in July, 1991. DHS will require a closure plan for the unlined ditch and pond at this facility.

**SLIC:**

Region: STATE  
Global Id: SLT5FS594624  
Assigned Name: SLICSITE  
Lead Agency Contact: GREG ISSINGHOFF

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**MADERA MUNICIPAL AIRPORT (Continued)**

**S100833198**

Lead Agency: CENTRAL VALLEY RWQCB (REGION 5F)  
Lead Agency Case Number: SLT5FS059  
Responsible Party: Not reported  
Recent Dtw: Not reported  
Substance Released: NOT\_SELECTED  
Facility Status: Reopen Previously Closed Case

**ENVIROSTOR:**

Site Type: Evaluation  
Site Type Detailed: Evaluation  
Acres: 543  
NPL: NO  
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley, MADERA COUNTY  
Lead Agency: RWQCB 5R - Central Valley  
Program Manager: Not reported  
Supervisor: Steven Becker  
Division Branch: Central California  
Facility ID: 20070001  
Site Code: 100099  
Assembly: 29  
Senate: 12  
Special Program: Not reported  
Status: Refer: RWQCB  
Status Date: 1994-11-02 00:00:00  
Restricted Use: NO  
Funding: Not reported  
Latitude: 36.9916666666667  
Longitude: -120.109444444444  
Alias Name: 20070001  
CAD980636898  
100099  
Alias Type: Envirostor ID Number  
Project Code (Site Code)  
EPA Identification Number

APN: NONE SPECIFIED  
APN Description: Not reported  
Comments: "According to 1984 sample results, the drainage ditch is contaminated with DDT up to 1510 ppm and DDD up to 1090 ppm, as well as dieldrin, ethion, malathion, and trithion. 1985 sample results revealed DDT up to 23.9 ppm, trithion, DEF, ethylparathion, and ethion. The shallow aquifer is contaminated with toxaphene and DDT. RWQCB will work on the site."

**Completed Info:**

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Site Screening  
Completed Date: 11/15/90

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Site Screening  
Completed Date: 02/10/87

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**MADERA MUNICIPAL AIRPORT (Continued)**

**S100833198**

Completed Document Type: Discovery  
Completed Date: 11/07/97

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Discovery  
Completed Date: 12/12/03

Confirmed: NONE SPECIFIED  
Confirmed Description: Not reported  
Future Area Name: Not reported  
Future Sub Area Name: Not reported  
Future Document Type: Not reported  
Future Due Date: Not reported  
Media Affected: NONE SPECIFIED  
Media Affected Desc: Not reported

Management:  
Management Required: NONE SPECIFIED  
Management Required Desc: Not reported  
Potential: NONE SPECIFIED  
Potential Description: Not reported  
Schedule Area Name: Not reported  
Schedule Sub Area Name: Not reported  
Schedule Document Type: Not reported  
Schedule Due Date: Not reported  
Schedule Revised Date: Not reported  
PastUse: NONE SPECIFIED

**C14**  
**SSE**  
**> 1**  
**1.095 mi.**  
**5781 ft.**

**MADERA AIRPORT**  
**4020 AVIATION DRIVE**  
**MADERA, CA 93637**

**Site 3 of 3 in cluster C**

**CA WDS** **S106571402**  
**ENVIROSTOR** **N/A**

**Relative:**  
**Higher**

**Actual:**  
**256 ft.**

CA WDS:  
Facility ID: 5F 20I002618  
Facility Type: Not reported  
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.  
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board  
Subregion: 0  
Facility Telephone: Not reported  
Facility Contact: Not reported  
Agency Name: CITY OF MADERA  
Agency Address: Not reported  
Agency City,St,Zip: 0  
Agency Contact: Not reported  
Agency Telephone: Not reported  
Agency Type: Not reported  
SIC Code: 0  
SIC Code 2: Not reported  
Primary Waste: Not reported  
Primary Waste Type: Not reported  
Secondary Waste: Not reported  
Secondary Waste Type: Not reported  
Design Flow: 0

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**MADERA AIRPORT (Continued)**

**S106571402**

Baseline Flow: 0  
Reclamation: Not reported  
POTW: Not reported  
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.  
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

**ENVIROSTOR:**

Site Type: Military Evaluation  
Site Type Detailed: FUDS  
Acres: Not reported  
NPL: NO  
Regulatory Agencies: SMBRP  
Lead Agency: NONE SPECIFIED  
Program Manager: Not reported  
Supervisor: Donn Diebert  
Division Branch: OMF - No (Sacramento)  
Facility ID: 80000583  
Site Code: Not reported  
Assembly: 25  
Senate: 12  
Special Program: Not reported  
Status: Inactive - Needs Evaluation  
Status Date: 2005-07-01 00:00:00  
Restricted Use: NO  
Funding: DERA  
Latitude: 36.979166666667  
Longitude: -120.077777777778  
Alias Name: CA99799F578900  
J09CA0859  
80000583  
Alias Type: INPR  
FFID  
Envirostor ID Number

APN: NONE SPECIFIED  
APN Description: Not reported  
Comments: Not reported

**Completed Info:**

Completed Area Name: Not reported  
Completed Sub Area Name: Not reported  
Completed Document Type: Not reported  
Completed Date: Not reported

Confirmed: NONE SPECIFIED  
Confirmed Description: Not reported  
Future Area Name: Not reported



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**MADERA AIRPORT (Continued)**

**S106571402**

Future Sub Area Name: Not reported  
Future Document Type: Not reported  
Future Due Date: Not reported  
Media Affected: NONE SPECIFIED  
Media Affected Desc: Not reported

**Management:**

Management Required: NONE SPECIFIED  
Management Required Desc: Not reported  
Potential: NONE SPECIFIED  
Potential Description: Not reported  
Schedule Area Name: Not reported  
Schedule Sub Area Name: Not reported  
Schedule Document Type: Not reported  
Schedule Due Date: Not reported  
Schedule Revised Date: Not reported  
PastUse: NONE SPECIFIED

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CHOWCHILLA	S107540427		ROAD 11, S OF AVENUE 17 1/2, (	93638	CDL
MADERA	S103631999	MUSD/CENTRAL SERVICES	1505 HWY 145	93637	HAZNET
MADERA	S105024803	MELIKIAN FARMS, INC.	10606 HWY 145	93638	LUST, Cortese
MADERA	S106085947	CALTRANS DIST 8/ENV AIR NOISE & WA	6850 HWY 145(CHERVON,NE CORNER	93637	HAZNET
MADERA	S105024830	SHOP-N-GO #598	10480 HWY 41	93637	LUST, Cortese
MADERA	S105024829	SHOP N GO	10480 HWY 41	93637	LUST, Cortese
MADERA	S103678956	DEPT OF TRANSPORTATION/DIST 6	HWY 41 / RIVER	93637	HAZNET
MADERA	S107146586	JP AUTOMOTIVE REPAIR	11040 HWY 41 UNIT B	93638	HAZNET
MADERA	S107537736		AVENUE 5 / ROAD 23 (INTERSECTI	93637	CDL
MADERA	S107537683		AVENUE 9, 1/2 MI W OF ROAD 23	93637	CDL
MADERA	S107537657		AVENUE 17 BETWEEN ROAD 20 / 19	93637	CDL
MADERA	S106921103	MADERA VALLEY WATER COMPANY	AVENUE 17 / AVELLAR WELL #1	93637	AIRS
MADERA	S105723740	PILOT TRAVEL CENTERS LLC # 365	22717 AVENUE 18 1/2 HWY 99	93637	HAZNET
MADERA	S104565707	PILOT	22717 AVENUE 18 1/2	93637	HAZNET, AIRS
MADERA	S101621171	DIXIELAND STORE	19110 AVENUE 18	93637	UST
MADERA	U003787003	PILOT TRUCK CENTER	22717 AVENUE 18 1/2	93638	CDL
MADERA	S108723804		AVENUE 14, 14 MI W OF ROAD 23,	93638	ERNS
MADERA	98433231	NORTH BOUND ROUTE 99 / 2 MILE SOU	NORTH BOUND ROUTE 99 / 2 MILE	93638	HAZNET
MADERA	S103975953	MADERA SUB STATION	CORNER OF HWY 145 / AVE 12	93637	HAZNET
MADERA	S104565803	GRAPHIC SCIENCES INC	18 1/2 EXIT ON HWY 99	93637	SWRCY
MADERA	S107137099	HEARTLAND OPPORTUNITY CENTER	2910 FALCON DR STE 8 / C	93637	HAZNET
MADERA	S102803557	BETTY CASTRO	20199 N HWY 41	93638	HAZNET
MADERA	S108220162	SEMPER SPEED & MARINE	10816 N HWY 41	93637	CDL
MADERA	S107526613		1/2 MILE SOUTH OF AVENUE 18, 1	93638	HAZNET
MADERA	S103950522	ARCANE AUTOMOTIVE	10816 B N HWY 41	93637	CDL
MADERA	S103981728	PG&E GREG SUBSTATION GARAGE	3MI EAST OF HWY99 /34657 AVE 7	93638	HAZNET
MADERA	1000234542	GREGG SUBSTATION GARAGE	3MI EAST OF HWY99	93637	HAZNET
MADERA	U001589490	ZELINDA BIONDI	13645 ROAD 24 1/2	93637	RCRA-SQG, FINDS
MADERA	U001589106	CLRJ RANCH PAM RANCH DIVISION	ROAD 23	93637	HIST UST
MADERA	S107620920	FARMERS MARKET	8104 ROAD 24	93637	HIST UST
MADERA	S107540444		ROAD 16 / AVENUE 18 1/2, WEST	93637	AIRS
MADERA	S101588420	MADERA ALMOND PROCESSING PLANT/MR.	17710 ROAD 24	93637	CDL
MADERA	U001589616	R & M FARMS	17710 ROAD 24	93637	CA FID UST, SWEEPS UST
MADERA	U001589588	SAULSBURY ORCHARDS AND ALMOND	17710 ROAD 24	93638	HIST UST
MADERA	U001589533	HILLVIEW ORCHARDS	17710 ROAD 24	93638	HIST UST
MADERA	S108748253	HASTSINGS IRRIGATION PIPE CO INC	17619 ROAD 24	93638	HIST UST
MADERA	98429261	STATE ROUTE 99 NORTHBOUND NORTH OF	STATE ROUTE 99 NORTHBOUND NORTH	93638	HAZNET
MADERA	S106087045	P G & E	13 MI SW OF HWY 145 / AVE 7	ERNS	
MADERA	S106087044	P G & E	11 MI SW OF HWY 145 / AVE 7	93637	HAZNET
				93637	HAZNET

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

### FEDERAL RECORDS

#### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/31/2008	Source: EPA
Date Data Arrived at EDR: 02/08/2008	Telephone: N/A
Date Made Active in Reports: 03/17/2008	Last EDR Contact: 04/28/2008
Number of Days to Update: 38	Next Scheduled EDR Contact: 07/28/2008
	Data Release Frequency: Quarterly

#### **NPL Site Boundaries**

##### Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 01/31/2008	Source: EPA
Date Data Arrived at EDR: 02/04/2008	Telephone: N/A
Date Made Active in Reports: 03/17/2008	Last EDR Contact: 04/28/2008
Number of Days to Update: 42	Next Scheduled EDR Contact: 07/28/2008
	Data Release Frequency: Quarterly

#### **DELISTED NPL: National Priority List Deletions**

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/31/2008	Source: EPA
Date Data Arrived at EDR: 02/08/2008	Telephone: N/A
Date Made Active in Reports: 03/17/2008	Last EDR Contact: 04/28/2008
Number of Days to Update: 38	Next Scheduled EDR Contact: 07/28/2008
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **NPL LIENS:** Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 05/19/2008
Number of Days to Update: 56	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: No Update Planned

### **CERCLIS:** Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/08/2008	Source: EPA
Date Data Arrived at EDR: 04/25/2008	Telephone: 703-412-9810
Date Made Active in Reports: 05/21/2008	Last EDR Contact: 04/25/2008
Number of Days to Update: 26	Next Scheduled EDR Contact: 06/16/2008
	Data Release Frequency: Quarterly

### **CERCLIS-NFRAP:** CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/03/2007	Source: EPA
Date Data Arrived at EDR: 12/06/2007	Telephone: 703-412-9810
Date Made Active in Reports: 02/20/2008	Last EDR Contact: 05/20/2008
Number of Days to Update: 76	Next Scheduled EDR Contact: 06/16/2008
	Data Release Frequency: Quarterly

### **LIENS 2:** CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/08/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/07/2008	Telephone: 202-564-6023
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 13	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Varies

### **CORRACTS:** Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/26/2008	Source: EPA
Date Data Arrived at EDR: 04/02/2008	Telephone: 800-424-9346
Date Made Active in Reports: 05/06/2008	Last EDR Contact: 03/03/2008
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/02/2008
	Data Release Frequency: Quarterly

### **RCRA-TSDF:** RCRA - Transporters, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/06/2008  
Date Data Arrived at EDR: 03/06/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 43

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 05/21/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly

### **RCRA-LQG:** RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2008  
Date Data Arrived at EDR: 03/06/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 43

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 05/21/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly

### **RCRA-SQG:** RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2008  
Date Data Arrived at EDR: 03/06/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 43

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 05/21/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly

### **RCRA-CESQG:** RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2008  
Date Data Arrived at EDR: 03/06/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 43

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 05/21/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Varies

### **RCRA-NonGen:** RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/06/2008  
Date Data Arrived at EDR: 03/06/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 43

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 05/21/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 04/04/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/17/2008	Telephone: 703-603-0695
Date Made Active in Reports: 05/15/2008	Last EDR Contact: 03/31/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 06/30/2008
	Data Release Frequency: Varies

### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 04/04/2008	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/17/2008	Telephone: 703-603-0695
Date Made Active in Reports: 05/15/2008	Last EDR Contact: 03/31/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 06/30/2008
	Data Release Frequency: Varies

### ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2007	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/23/2008	Telephone: 202-267-2180
Date Made Active in Reports: 03/17/2008	Last EDR Contact: 04/22/2008
Number of Days to Update: 54	Next Scheduled EDR Contact: 07/21/2008
	Data Release Frequency: Annually

### HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2007	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 04/16/2008	Telephone: 202-366-4555
Date Made Active in Reports: 05/15/2008	Last EDR Contact: 04/16/2008
Number of Days to Update: 29	Next Scheduled EDR Contact: 07/14/2008
	Data Release Frequency: Annually

### DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 02/14/2008	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 02/27/2008	Telephone: 202-366-4595
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 05/28/2008
Number of Days to Update: 22	Next Scheduled EDR Contact: 08/25/2008
	Data Release Frequency: Varies

### CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/01/2007  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 12/28/2007  
Number of Days to Update: 25

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 03/28/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: Quarterly

### US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 04/01/2008  
Date Data Arrived at EDR: 04/30/2008  
Date Made Active in Reports: 05/30/2008  
Number of Days to Update: 30

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 04/30/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Semi-Annually

### DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 11/10/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 62

Source: USGS  
Telephone: 703-692-8801  
Last EDR Contact: 05/09/2008  
Next Scheduled EDR Contact: 08/04/2008  
Data Release Frequency: Semi-Annually

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 08/31/2007  
Date Made Active in Reports: 10/11/2007  
Number of Days to Update: 41

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 04/03/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Varies

### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005  
Date Data Arrived at EDR: 12/11/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 31

Source: Department of the Navy  
Telephone: 843-820-7326  
Last EDR Contact: 03/10/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Varies

### CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/08/2008  
Date Data Arrived at EDR: 04/25/2008  
Date Made Active in Reports: 05/30/2008  
Number of Days to Update: 35

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 04/22/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: Varies

### **ROD: Records Of Decision**

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/14/2008  
Date Data Arrived at EDR: 01/22/2008  
Date Made Active in Reports: 01/30/2008  
Number of Days to Update: 8

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 03/31/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Annually

### **UMTRA: Uranium Mill Tailings Sites**

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 07/13/2007  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Department of Energy  
Telephone: 505-845-0011  
Last EDR Contact: 03/17/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Varies

### **ODI: Open Dump Inventory**

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### **DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations**

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 03/25/2008  
Date Data Arrived at EDR: 04/17/2008  
Date Made Active in Reports: 05/15/2008  
Number of Days to Update: 28

Source: EPA, Region 9  
Telephone: 415-972-3336  
Last EDR Contact: 03/24/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: Varies

### **MINES: Mines Master Index File**

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/07/2008  
Date Data Arrived at EDR: 03/26/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 23

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 03/26/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: Semi-Annually

### **TRIS: Toxic Chemical Release Inventory System**

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 02/29/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Annually

### **TSCA:** Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002  
Date Data Arrived at EDR: 04/14/2006  
Date Made Active in Reports: 05/30/2006  
Number of Days to Update: 46

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 04/28/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Every 4 Years

### **FTTS:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/11/2008  
Date Data Arrived at EDR: 04/24/2008  
Date Made Active in Reports: 05/21/2008  
Number of Days to Update: 27

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 03/17/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Quarterly

### **FTTS INSP:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/11/2008  
Date Data Arrived at EDR: 04/24/2008  
Date Made Active in Reports: 05/21/2008  
Number of Days to Update: 27

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 03/17/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Quarterly

### **HIST FTTS:** FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### **HIST FTTS INSP:** FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### **SSTS:** Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 03/14/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Annually

### **ICIS:** Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 02/28/2008  
Date Data Arrived at EDR: 03/18/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 49

Source: Environmental Protection Agency  
Telephone: 202-564-5088  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Quarterly

### **PADS:** PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/04/2007  
Date Data Arrived at EDR: 02/07/2008  
Date Made Active in Reports: 03/17/2008  
Number of Days to Update: 39

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 05/30/2008  
Next Scheduled EDR Contact: 08/04/2008  
Data Release Frequency: Annually

### **MLTS:** Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008  
Date Data Arrived at EDR: 02/07/2008  
Date Made Active in Reports: 03/17/2008  
Number of Days to Update: 39

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 03/31/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Quarterly

### **RADINFO:** Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/29/2008  
Date Data Arrived at EDR: 05/01/2008  
Date Made Active in Reports: 05/21/2008  
Number of Days to Update: 20

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 05/01/2008  
Next Scheduled EDR Contact: 07/28/2008  
Data Release Frequency: Quarterly



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **FINDS:** Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/03/2008	Source: EPA
Date Data Arrived at EDR: 04/08/2008	Telephone: (415) 947-8000
Date Made Active in Reports: 05/06/2008	Last EDR Contact: 03/31/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 06/30/2008
	Data Release Frequency: Quarterly

### **RAATS:** RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 03/03/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 06/02/2008
	Data Release Frequency: No Update Planned

### **BRS:** Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005	Source: EPA/NTIS
Date Data Arrived at EDR: 03/06/2007	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2007	Last EDR Contact: 03/13/2008
Number of Days to Update: 38	Next Scheduled EDR Contact: 06/09/2008
	Data Release Frequency: Biennially

## **STATE AND LOCAL RECORDS**

### **HIST CAL-SITES:** Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 05/27/2008
Number of Days to Update: 21	Next Scheduled EDR Contact: 08/25/2008
	Data Release Frequency: No Update Planned

### **CA BOND EXP. PLAN:** Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **SCH:** School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/26/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/27/2008  
Number of Days to Update: 29

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/28/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Quarterly

### **TOXIC PITS:** Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995  
Date Data Arrived at EDR: 08/30/1995  
Date Made Active in Reports: 09/26/1995  
Number of Days to Update: 27

Source: State Water Resources Control Board  
Telephone: 916-227-4364  
Last EDR Contact: 04/28/2008  
Next Scheduled EDR Contact: 07/28/2008  
Data Release Frequency: No Update Planned

### **SWF/LF (SWIS):** Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/10/2008  
Date Data Arrived at EDR: 03/12/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 33

Source: Integrated Waste Management Board  
Telephone: 916-341-6320  
Last EDR Contact: 03/12/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Quarterly

### **WMUDS/SWAT:** Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000  
Date Data Arrived at EDR: 04/10/2000  
Date Made Active in Reports: 05/10/2000  
Number of Days to Update: 30

Source: State Water Resources Control Board  
Telephone: 916-227-4448  
Last EDR Contact: 03/03/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Quarterly

### **CA WDS:** Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007  
Date Data Arrived at EDR: 06/20/2007  
Date Made Active in Reports: 06/29/2007  
Number of Days to Update: 9

Source: State Water Resources Control Board  
Telephone: 916-341-5227  
Last EDR Contact: 03/17/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Quarterly

### **CORTESE:** "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2001  
Date Data Arrived at EDR: 05/29/2001  
Date Made Active in Reports: 07/26/2001  
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information  
Telephone: 916-323-3400  
Last EDR Contact: 04/21/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: No Update Planned

### **SWRCY: Recycler Database**

A listing of recycling facilities in California.

Date of Government Version: 04/07/2008  
Date Data Arrived at EDR: 04/09/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 27

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 04/09/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Quarterly

### **LUST REG 9: Leaking Underground Storage Tank Report**

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001  
Date Data Arrived at EDR: 04/23/2001  
Date Made Active in Reports: 05/21/2001  
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)  
Telephone: 858-637-5595  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: No Update Planned

### **LUST REG 8: Leaking Underground Storage Tanks**

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005  
Date Data Arrived at EDR: 02/15/2005  
Date Made Active in Reports: 03/28/2005  
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)  
Telephone: 909-782-4496  
Last EDR Contact: 05/05/2008  
Next Scheduled EDR Contact: 08/04/2008  
Data Release Frequency: Varies

### **LUST REG 6V: Leaking Underground Storage Tank Case Listing**

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005  
Date Data Arrived at EDR: 06/07/2005  
Date Made Active in Reports: 06/29/2005  
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)  
Telephone: 760-241-7365  
Last EDR Contact: 03/31/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: No Update Planned

### **LUST REG 6L: Leaking Underground Storage Tank Case Listing**

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003  
Date Data Arrived at EDR: 09/10/2003  
Date Made Active in Reports: 10/07/2003  
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)  
Telephone: 530-542-5572  
Last EDR Contact: 03/03/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: No Update Planned

### **LUST REG 5: Leaking Underground Storage Tank Database**

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calaveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 04/01/2008  
Date Data Arrived at EDR: 04/23/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 13

Source: California Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-4834  
Last EDR Contact: 04/23/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004  
Date Data Arrived at EDR: 09/07/2004  
Date Made Active in Reports: 10/12/2004  
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6710  
Last EDR Contact: 03/24/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: No Update Planned

### LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003  
Date Data Arrived at EDR: 05/19/2003  
Date Made Active in Reports: 06/02/2003  
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)  
Telephone: 805-542-4786  
Last EDR Contact: 05/12/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: No Update Planned

### LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004  
Date Data Arrived at EDR: 10/20/2004  
Date Made Active in Reports: 11/19/2004  
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)  
Telephone: 510-622-2433  
Last EDR Contact: 04/07/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Quarterly

### LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001  
Date Data Arrived at EDR: 02/28/2001  
Date Made Active in Reports: 03/29/2001  
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)  
Telephone: 707-570-3769  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: No Update Planned

### LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 04/08/2008  
Date Data Arrived at EDR: 04/09/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 27

Source: State Water Resources Control Board  
Telephone: see region list  
Last EDR Contact: 04/09/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Quarterly

### LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004  
Date Data Arrived at EDR: 02/26/2004  
Date Made Active in Reports: 03/24/2004  
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)  
Telephone: 760-776-8943  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994  
Date Data Arrived at EDR: 09/05/1995  
Date Made Active in Reports: 09/29/1995  
Number of Days to Update: 24

Source: California Environmental Protection Agency  
Telephone: 916-341-5851  
Last EDR Contact: 12/28/1998  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/08/2008  
Date Data Arrived at EDR: 04/09/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 27

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 01/09/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Varies

### SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003  
Date Data Arrived at EDR: 04/07/2003  
Date Made Active in Reports: 04/25/2003  
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)  
Telephone: 707-576-2220  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: No Update Planned

### SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004  
Date Data Arrived at EDR: 10/20/2004  
Date Made Active in Reports: 11/19/2004  
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)  
Telephone: 510-266-0457  
Last EDR Contact: 04/07/2008  
Next Scheduled EDR Contact: 04/07/2008  
Data Release Frequency: Quarterly

### SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006  
Date Data Arrived at EDR: 05/18/2006  
Date Made Active in Reports: 06/15/2006  
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)  
Telephone: 805-549-3147  
Last EDR Contact: 05/12/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Semi-Annually

### SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004  
Date Data Arrived at EDR: 11/18/2004  
Date Made Active in Reports: 01/04/2005  
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6600  
Last EDR Contact: 04/21/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: Varies



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing**

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005  
Date Data Arrived at EDR: 04/05/2005  
Date Made Active in Reports: 04/21/2005  
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-3291  
Last EDR Contact: 03/31/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Semi-Annually

### **SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing**

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005  
Date Data Arrived at EDR: 05/25/2005  
Date Made Active in Reports: 06/16/2005  
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch  
Telephone: 619-241-6583  
Last EDR Contact: 03/31/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Semi-Annually

### **SLIC REG 6L: SLIC Sites**

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004  
Date Data Arrived at EDR: 09/07/2004  
Date Made Active in Reports: 10/12/2004  
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region  
Telephone: 530-542-5574  
Last EDR Contact: 03/03/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: No Update Planned

### **SLIC REG 7: SLIC List**

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004  
Date Data Arrived at EDR: 11/29/2004  
Date Made Active in Reports: 01/04/2005  
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region  
Telephone: 760-346-7491  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: No Update Planned

### **SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing**

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008  
Date Data Arrived at EDR: 04/03/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)  
Telephone: 951-782-3298  
Last EDR Contact: 03/31/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Semi-Annually

### **SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing**

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007  
Date Data Arrived at EDR: 09/11/2007  
Date Made Active in Reports: 09/28/2007  
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)  
Telephone: 858-467-2980  
Last EDR Contact: 05/27/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Annually

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **UST:** Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/08/2008	Source: SWRCB
Date Data Arrived at EDR: 04/09/2008	Telephone: 916-480-1028
Date Made Active in Reports: 05/01/2008	Last EDR Contact: 04/09/2008
Number of Days to Update: 22	Next Scheduled EDR Contact: 07/07/2008
	Data Release Frequency: Semi-Annually

### **UST MENDOCINO:** Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/24/2008	Source: Department of Public Health
Date Data Arrived at EDR: 03/25/2008	Telephone: 707-463-4466
Date Made Active in Reports: 04/09/2008	Last EDR Contact: 03/24/2008
Number of Days to Update: 15	Next Scheduled EDR Contact: 06/23/2008
	Data Release Frequency: Varies

### **HIST UST:** Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990	Source: State Water Resources Control Board
Date Data Arrived at EDR: 01/25/1991	Telephone: 916-341-5851
Date Made Active in Reports: 02/12/1991	Last EDR Contact: 07/26/2001
Number of Days to Update: 18	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### **AST:** Aboveground Petroleum Storage Tank Facilities

Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/27/2007	Telephone: 916-341-5712
Date Made Active in Reports: 02/14/2008	Last EDR Contact: 04/28/2008
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/28/2008
	Data Release Frequency: Quarterly

### **LIENS:** Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/05/2008	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 02/06/2008	Telephone: 916-323-3400
Date Made Active in Reports: 03/14/2008	Last EDR Contact: 05/05/2008
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/04/2008
	Data Release Frequency: Varies

### **SWEEPS UST:** SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/07/2005	Telephone: N/A
Date Made Active in Reports: 08/11/2005	Last EDR Contact: 06/03/2005
Number of Days to Update: 35	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### **CHMIRS:** California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 02/23/2007  
Date Made Active in Reports: 04/06/2007  
Number of Days to Update: 42

Source: Office of Emergency Services  
Telephone: 916-845-8400  
Last EDR Contact: 05/02/2008  
Next Scheduled EDR Contact: 05/19/2008  
Data Release Frequency: Varies

### **NOTIFY 65:** Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993  
Date Data Arrived at EDR: 11/01/1993  
Date Made Active in Reports: 11/19/1993  
Number of Days to Update: 18

Source: State Water Resources Control Board  
Telephone: 916-445-3846  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: No Update Planned

### **DEED:** Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 04/01/2008  
Date Data Arrived at EDR: 04/02/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 12

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 04/02/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Semi-Annually

### **VCP:** Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/26/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/27/2008  
Number of Days to Update: 29

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/28/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Quarterly

### **DRYCLEANERS:** Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/31/2007  
Date Data Arrived at EDR: 07/31/2007  
Date Made Active in Reports: 08/09/2007  
Number of Days to Update: 9

Source: Department of Toxic Substance Control  
Telephone: 916-327-4498  
Last EDR Contact: 05/30/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Annually

### **WIP:** Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/26/2008  
Date Data Arrived at EDR: 04/23/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board  
Telephone: 213-576-6726  
Last EDR Contact: 04/23/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: Varies

### **CDL:** Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2007  
Date Data Arrived at EDR: 04/22/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 14

Source: Department of Toxic Substances Control  
Telephone: 916-255-6504  
Last EDR Contact: 04/21/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: Varies

### **RESPONSE:** State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/26/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/27/2008  
Number of Days to Update: 29

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/28/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Quarterly

### **HAZNET:** Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 10/04/2007  
Date Made Active in Reports: 11/07/2007  
Number of Days to Update: 34

Source: California Environmental Protection Agency  
Telephone: 916-255-1136  
Last EDR Contact: 05/09/2008  
Next Scheduled EDR Contact: 08/04/2008  
Data Release Frequency: Annually

### **EMI:** Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 04/17/2007  
Date Made Active in Reports: 05/10/2007  
Number of Days to Update: 23

Source: California Air Resources Board  
Telephone: 916-322-2990  
Last EDR Contact: 04/18/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Varies

### **HAULERS:** Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 04/28/2008  
Date Data Arrived at EDR: 04/29/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 7

Source: Integrated Waste Management Board  
Telephone: 916-341-6422  
Last EDR Contact: 04/28/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Varies

### **ENVIROSTOR:** EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/26/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/27/2008  
Number of Days to Update: 29

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/28/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Quarterly

### TRIBAL RECORDS

#### **INDIAN RESERV:** Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 12/08/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 34

Source: USGS  
Telephone: 202-208-3710  
Last EDR Contact: 05/09/2008  
Next Scheduled EDR Contact: 08/04/2008  
Data Release Frequency: Semi-Annually

#### **INDIAN ODI:** Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 05/27/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Varies

#### **INDIAN LUST R10:** Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/21/2008  
Date Data Arrived at EDR: 02/26/2008  
Date Made Active in Reports: 03/20/2008  
Number of Days to Update: 23

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly

#### **INDIAN LUST R6:** Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 02/28/2008  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 03/17/2008  
Number of Days to Update: 17

Source: EPA Region 6  
Telephone: 214-665-6597  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Varies

#### **INDIAN LUST R9:** Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2008  
Date Data Arrived at EDR: 02/26/2008  
Date Made Active in Reports: 03/17/2008  
Number of Days to Update: 20

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly

#### **INDIAN LUST R8:** Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 02/20/2008  
Date Data Arrived at EDR: 03/04/2008  
Date Made Active in Reports: 03/17/2008  
Number of Days to Update: 13

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/17/2008	Source: EPA Region 7
Date Data Arrived at EDR: 03/27/2008	Telephone: 913-551-7003
Date Made Active in Reports: 05/06/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Varies

### INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 03/17/2008	Source: EPA Region 4
Date Data Arrived at EDR: 03/27/2008	Telephone: 404-562-8677
Date Made Active in Reports: 05/06/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Semi-Annually

### INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008	Source: EPA Region 1
Date Data Arrived at EDR: 03/14/2008	Telephone: 617-918-1313
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 6	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Varies

### INDIAN UST R1: Underground Storage Tanks on Indian Land

A listing of underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008	Source: EPA, Region 1
Date Data Arrived at EDR: 03/14/2008	Telephone: 617-918-1313
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 6	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Varies

### INDIAN UST R4: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 03/17/2008	Source: EPA Region 4
Date Data Arrived at EDR: 03/27/2008	Telephone: 404-562-9424
Date Made Active in Reports: 05/06/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Semi-Annually

### INDIAN UST R10: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 02/21/2008	Source: EPA Region 10
Date Data Arrived at EDR: 02/26/2008	Telephone: 206-553-2857
Date Made Active in Reports: 03/20/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 23	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Quarterly

### INDIAN UST R8: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 02/20/2008	Source: EPA Region 8
Date Data Arrived at EDR: 03/04/2008	Telephone: 303-312-6137
Date Made Active in Reports: 03/17/2008	Last EDR Contact: 05/19/2008
Number of Days to Update: 13	Next Scheduled EDR Contact: 08/18/2008
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R6: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 02/28/2008  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 03/17/2008  
Number of Days to Update: 17

Source: EPA Region 6  
Telephone: 214-665-7591  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Semi-Annually

### INDIAN UST R5: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 12/21/2007  
Date Data Arrived at EDR: 12/21/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 34

Source: EPA Region 5  
Telephone: 312-886-6136  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Varies

### INDIAN UST R9: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 02/25/2008  
Date Data Arrived at EDR: 02/26/2008  
Date Made Active in Reports: 03/20/2008  
Number of Days to Update: 23

Source: EPA Region 9  
Telephone: 415-972-3368  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Quarterly

### INDIAN UST R7: Underground Storage Tanks on Indian Land

No description is available for this data

Date of Government Version: 06/01/2007  
Date Data Arrived at EDR: 06/14/2007  
Date Made Active in Reports: 07/05/2007  
Number of Days to Update: 21

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Varies

## EDR PROPRIETARY RECORDS

### Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## COUNTY RECORDS

### ALAMEDA COUNTY:

#### Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/28/2008  
Date Data Arrived at EDR: 01/29/2008  
Date Made Active in Reports: 02/14/2008  
Number of Days to Update: 16

Source: Alameda County Environmental Health Services  
Telephone: 510-567-6700  
Last EDR Contact: 05/05/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: Semi-Annually

### Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/28/2008  
Date Data Arrived at EDR: 01/29/2008  
Date Made Active in Reports: 02/08/2008  
Number of Days to Update: 10

Source: Alameda County Environmental Health Services  
Telephone: 510-567-6700  
Last EDR Contact: 05/05/2008  
Next Scheduled EDR Contact: 07/21/2008  
Data Release Frequency: Semi-Annually

### CONTRA COSTA COUNTY:

#### Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/07/2008  
Date Data Arrived at EDR: 03/11/2008  
Date Made Active in Reports: 03/27/2008  
Number of Days to Update: 16

Source: Contra Costa Health Services Department  
Telephone: 925-646-2286  
Last EDR Contact: 05/27/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Semi-Annually

### FRESNO COUNTY:

#### CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/2008  
Date Data Arrived at EDR: 04/18/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 18

Source: Dept. of Community Health  
Telephone: 559-445-3271  
Last EDR Contact: 04/18/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Semi-Annually

### KERN COUNTY:

#### Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 04/01/2008  
Date Data Arrived at EDR: 04/18/2008  
Date Made Active in Reports: 05/01/2008  
Number of Days to Update: 13

Source: Kern County Environment Health Services Department  
Telephone: 661-862-8700  
Last EDR Contact: 04/16/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Quarterly

### LOS ANGELES COUNTY:

#### San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 07/07/1999  
Date Made Active in Reports: N/A  
Number of Days to Update: 0

Source: EPA Region 9  
Telephone: 415-972-3178  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: No Update Planned

### HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 02/28/2008  
Date Data Arrived at EDR: 04/16/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 20

Source: Department of Public Works  
Telephone: 626-458-3517  
Last EDR Contact: 05/12/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Semi-Annually

### List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 02/12/2008  
Date Data Arrived at EDR: 02/21/2008  
Date Made Active in Reports: 03/27/2008  
Number of Days to Update: 35

Source: La County Department of Public Works  
Telephone: 818-458-5185  
Last EDR Contact: 05/14/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Varies

### City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2008  
Date Data Arrived at EDR: 03/20/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 25

Source: Engineering & Construction Division  
Telephone: 213-473-7869  
Last EDR Contact: 03/12/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Varies

### Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/14/2008  
Date Data Arrived at EDR: 04/10/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 26

Source: Community Health Services  
Telephone: 323-890-7806  
Last EDR Contact: 05/12/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Annually

### City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 02/11/2008  
Date Data Arrived at EDR: 02/21/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 22

Source: City of El Segundo Fire Department  
Telephone: 310-524-2236  
Last EDR Contact: 05/27/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Semi-Annually

### City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003  
Date Data Arrived at EDR: 10/23/2003  
Date Made Active in Reports: 11/26/2003  
Number of Days to Update: 34

Source: City of Long Beach Fire Department  
Telephone: 562-570-2563  
Last EDR Contact: 05/21/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Annually

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/26/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 16

Source: City of Torrance Fire Department  
Telephone: 310-618-2973  
Last EDR Contact: 05/27/2008  
Next Scheduled EDR Contact: 08/11/2008  
Data Release Frequency: Semi-Annually

### MARIN COUNTY:

#### Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 02/04/2008  
Date Data Arrived at EDR: 02/21/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 22

Source: Public Works Department Waste Management  
Telephone: 415-499-6647  
Last EDR Contact: 04/28/2008  
Next Scheduled EDR Contact: 07/28/2008  
Data Release Frequency: Semi-Annually

### NAPA COUNTY:

#### Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 04/24/2008  
Date Data Arrived at EDR: 04/25/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 11

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 04/07/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: Semi-Annually

#### Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008  
Date Data Arrived at EDR: 01/16/2008  
Date Made Active in Reports: 02/08/2008  
Number of Days to Update: 23

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: Annually

### ORANGE COUNTY:

#### List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 03/03/2008  
Date Data Arrived at EDR: 03/20/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 25

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 03/06/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Annually

#### List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/03/2008  
Date Data Arrived at EDR: 03/25/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 20

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 03/06/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Quarterly



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 03/03/2008  
Date Data Arrived at EDR: 03/18/2008  
Date Made Active in Reports: 04/09/2008  
Number of Days to Update: 22

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 03/06/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Quarterly

## PLACER COUNTY:

### Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007  
Date Data Arrived at EDR: 07/23/2007  
Date Made Active in Reports: 08/09/2007  
Number of Days to Update: 17

Source: Placer County Health and Human Services  
Telephone: 530-889-7312  
Last EDR Contact: 03/17/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Semi-Annually

## RIVERSIDE COUNTY:

### Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 08/06/2007  
Date Data Arrived at EDR: 08/07/2007  
Date Made Active in Reports: 09/26/2007  
Number of Days to Update: 50

Source: Department of Public Health  
Telephone: 951-358-5055  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Quarterly

### Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 08/06/2007  
Date Data Arrived at EDR: 08/07/2007  
Date Made Active in Reports: 09/24/2007  
Number of Days to Update: 48

Source: Health Services Agency  
Telephone: 951-358-5055  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Quarterly

## SACRAMENTO COUNTY:

### Contaminated Sites

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/11/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 16

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406  
Last EDR Contact: 05/02/2008  
Next Scheduled EDR Contact: 07/28/2008  
Data Release Frequency: Quarterly

### ML - Regulatory Compliance Master List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/11/2008  
Date Data Arrived at EDR: 02/27/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 16

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406  
Last EDR Contact: 05/02/2008  
Next Scheduled EDR Contact: 07/28/2008  
Data Release Frequency: Quarterly

## SAN BERNARDINO COUNTY:

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/18/2008  
Date Data Arrived at EDR: 03/19/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 26

Source: San Bernardino County Fire Department Hazardous Materials Division  
Telephone: 909-387-3041  
Last EDR Contact: 03/03/2008  
Next Scheduled EDR Contact: 12/03/2007  
Data Release Frequency: Quarterly

### SAN DIEGO COUNTY:

#### Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005  
Date Data Arrived at EDR: 05/18/2005  
Date Made Active in Reports: 06/16/2005  
Number of Days to Update: 29

Source: Hazardous Materials Management Division  
Telephone: 619-338-2268  
Last EDR Contact: 04/02/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Quarterly

#### Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/2007  
Date Data Arrived at EDR: 02/05/2008  
Date Made Active in Reports: 02/14/2008  
Number of Days to Update: 9

Source: Department of Health Services  
Telephone: 619-338-2209  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Varies

#### Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 11/28/2007  
Date Data Arrived at EDR: 03/13/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 32

Source: San Diego County Department of Environmental Health  
Telephone: 619-338-2371  
Last EDR Contact: 04/23/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Varies

### SAN FRANCISCO COUNTY:

#### Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 03/03/2008  
Date Data Arrived at EDR: 03/04/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County  
Telephone: 415-252-3920  
Last EDR Contact: 03/03/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 03/03/2008  
Date Data Arrived at EDR: 03/04/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 10

Source: Department of Public Health  
Telephone: 415-252-3920  
Last EDR Contact: 03/03/2008  
Next Scheduled EDR Contact: 06/02/2008  
Data Release Frequency: Quarterly

## SAN JOAQUIN COUNTY:

### San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 02/01/2008  
Date Data Arrived at EDR: 02/26/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 17

Source: Environmental Health Department  
Telephone: N/A  
Last EDR Contact: 04/14/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Semi-Annually

## SAN MATEO COUNTY:

### Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/31/2008  
Date Data Arrived at EDR: 02/01/2008  
Date Made Active in Reports: 02/14/2008  
Number of Days to Update: 13

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 04/07/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Annually

### Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 04/10/2008  
Date Data Arrived at EDR: 04/11/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 25

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 04/07/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Semi-Annually

## SANTA CLARA COUNTY:

### HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005  
Date Data Arrived at EDR: 03/30/2005  
Date Made Active in Reports: 04/21/2005  
Number of Days to Update: 22

Source: Santa Clara Valley Water District  
Telephone: 408-265-2600  
Last EDR Contact: 03/24/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: No Update Planned

### LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 04/28/2008  
Date Data Arrived at EDR: 04/29/2008  
Date Made Active in Reports: 05/06/2008  
Number of Days to Update: 7

Source: Department of Environmental Health  
Telephone: 408-918-3417  
Last EDR Contact: 04/28/2008  
Next Scheduled EDR Contact: 06/23/2008  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 03/04/2008	Source: City of San Jose Fire Department
Date Data Arrived at EDR: 03/04/2008	Telephone: 408-277-4659
Date Made Active in Reports: 03/14/2008	Last EDR Contact: 03/03/2008
Number of Days to Update: 10	Next Scheduled EDR Contact: 06/02/2008
	Data Release Frequency: Annually

### SOLANO COUNTY:

#### Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 04/04/2008	Source: Solano County Department of Environmental Management
Date Data Arrived at EDR: 04/22/2008	Telephone: 707-784-6770
Date Made Active in Reports: 05/06/2008	Last EDR Contact: 03/24/2008
Number of Days to Update: 14	Next Scheduled EDR Contact: 06/23/2008
	Data Release Frequency: Quarterly

#### Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 04/04/2008	Source: Solano County Department of Environmental Management
Date Data Arrived at EDR: 04/22/2008	Telephone: 707-784-6770
Date Made Active in Reports: 05/01/2008	Last EDR Contact: 03/24/2008
Number of Days to Update: 9	Next Scheduled EDR Contact: 06/23/2008
	Data Release Frequency: Quarterly

### SONOMA COUNTY:

#### Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/22/2008	Source: Department of Health Services
Date Data Arrived at EDR: 01/22/2008	Telephone: 707-565-6565
Date Made Active in Reports: 02/14/2008	Last EDR Contact: 04/21/2008
Number of Days to Update: 23	Next Scheduled EDR Contact: 07/21/2008
	Data Release Frequency: Quarterly

### SUTTER COUNTY:

#### Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007	Source: Sutter County Department of Agriculture
Date Data Arrived at EDR: 05/04/2007	Telephone: 530-822-7500
Date Made Active in Reports: 05/24/2007	Last EDR Contact: 03/31/2008
Number of Days to Update: 20	Next Scheduled EDR Contact: 06/30/2008
	Data Release Frequency: Semi-Annually

### VENTURA COUNTY:

#### Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/27/2008  
Date Data Arrived at EDR: 03/25/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 20

Source: Ventura County Environmental Health Division  
Telephone: 805-654-2813  
Last EDR Contact: 03/12/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Quarterly

### Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2007  
Date Data Arrived at EDR: 08/29/2007  
Date Made Active in Reports: 09/26/2007  
Number of Days to Update: 28

Source: Environmental Health Division  
Telephone: 805-654-2813  
Last EDR Contact: 05/19/2008  
Next Scheduled EDR Contact: 08/18/2008  
Data Release Frequency: Annually

### Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 02/27/2008  
Date Data Arrived at EDR: 03/25/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 20

Source: Environmental Health Division  
Telephone: 805-654-2813  
Last EDR Contact: 03/12/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Quarterly

### Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 03/26/2008  
Date Data Arrived at EDR: 04/09/2008  
Date Made Active in Reports: 05/01/2008  
Number of Days to Update: 22

Source: Environmental Health Division  
Telephone: 805-654-2813  
Last EDR Contact: 04/09/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Quarterly

## YOLO COUNTY:

### Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 01/29/2008  
Date Data Arrived at EDR: 02/20/2008  
Date Made Active in Reports: 03/14/2008  
Number of Days to Update: 23

Source: Yolo County Department of Health  
Telephone: 530-666-8646  
Last EDR Contact: 05/12/2008  
Next Scheduled EDR Contact: 07/14/2008  
Data Release Frequency: Annually

### OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 06/15/2007  
Date Made Active in Reports: 08/20/2007  
Number of Days to Update: 66

Source: Department of Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 03/14/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Annually



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **NJ MANIFEST:** Manifest Information

Hazardous waste manifest information.

Date of Government Version: 09/30/2007  
Date Data Arrived at EDR: 12/04/2007  
Date Made Active in Reports: 12/31/2007  
Number of Days to Update: 27

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 04/03/2008  
Next Scheduled EDR Contact: 06/30/2008  
Data Release Frequency: Annually

### **NY MANIFEST:** Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/15/2008  
Date Data Arrived at EDR: 02/28/2008  
Date Made Active in Reports: 04/09/2008  
Number of Days to Update: 41

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 05/29/2008  
Next Scheduled EDR Contact: 08/25/2008  
Data Release Frequency: Annually

### **PA MANIFEST:** Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 12/21/2007  
Date Made Active in Reports: 01/10/2008  
Number of Days to Update: 20

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 03/10/2008  
Next Scheduled EDR Contact: 06/09/2008  
Data Release Frequency: Annually

### **RI MANIFEST:** Manifest information

Hazardous waste manifest information

Date of Government Version: 10/01/2007  
Date Data Arrived at EDR: 11/09/2007  
Date Made Active in Reports: 01/15/2008  
Number of Days to Update: 67

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 03/17/2008  
Next Scheduled EDR Contact: 06/16/2008  
Data Release Frequency: Annually

### **WI MANIFEST:** Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2006  
Date Data Arrived at EDR: 04/27/2007  
Date Made Active in Reports: 06/08/2007  
Number of Days to Update: 42

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 04/07/2008  
Next Scheduled EDR Contact: 07/07/2008  
Data Release Frequency: Annually

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

### **Electric Power Transmission Line Data**

Source: PennWell Corporation  
Telephone: (800) 823-6277

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**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

### **AHA Hospitals:**

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **Medical Centers: Provider of Services Listing**

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

### **Nursing Homes**

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

### **Public Schools**

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

### **Private Schools**

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

### **Daycare Centers: Licensed Facilities**

Source: Department of Social Services

Telephone: 916-657-4041

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

### **STREET AND ADDRESS INFORMATION**

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## **GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

NORTH FORK SITE  
17488 GOLDEN STATE BOULEVARD  
MADERA, CA 93637

### **TARGET PROPERTY COORDINATES**

Latitude (North):	37.00526 - 37° 0' 18.9"
Longitude (West):	120.11677 - 120° 7' 0.4"
Universal Transverse Mercator:	Zone 10
UTM X (Meters):	756557.1
UTM Y (Meters):	4099140.0
Elevation:	254 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	37120-A1 KISMET, CA
Most Recent Revision:	1987
South Map:	36120-H1 MADERA, CA
Most Recent Revision:	1981
Southwest Map:	36120-H2 BONITA RANCH, CA
Most Recent Revision:	1978
West Map:	37120-A2 BERENDA, CA
Most Recent Revision:	1987

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

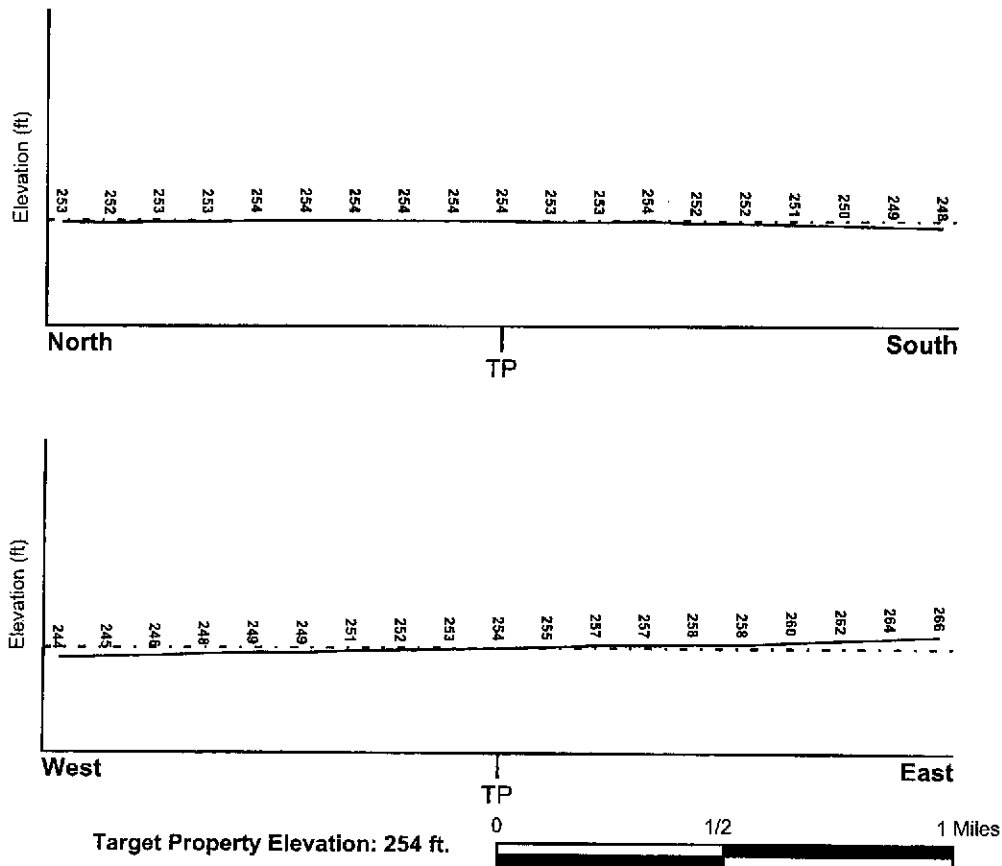
### TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

Target Property County  
MADERA, CA

FEMA Flood Electronic Data  
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0601700605B

Additional Panels in search area: 0601700600B  
0601720005B

### NATIONAL WETLAND INVENTORY

NWI Quad at Target Property  
KISMET

NWI Electronic Data Coverage  
YES - refer to the Overview Map and Detail Map

### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### *Site-Specific Hydrogeological Data\*:*

Search Radius: 1.25 miles  
Status: Not found

### AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

\* ©1996 Site-specific hydrogeological data gathered by CERCLUS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.



## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

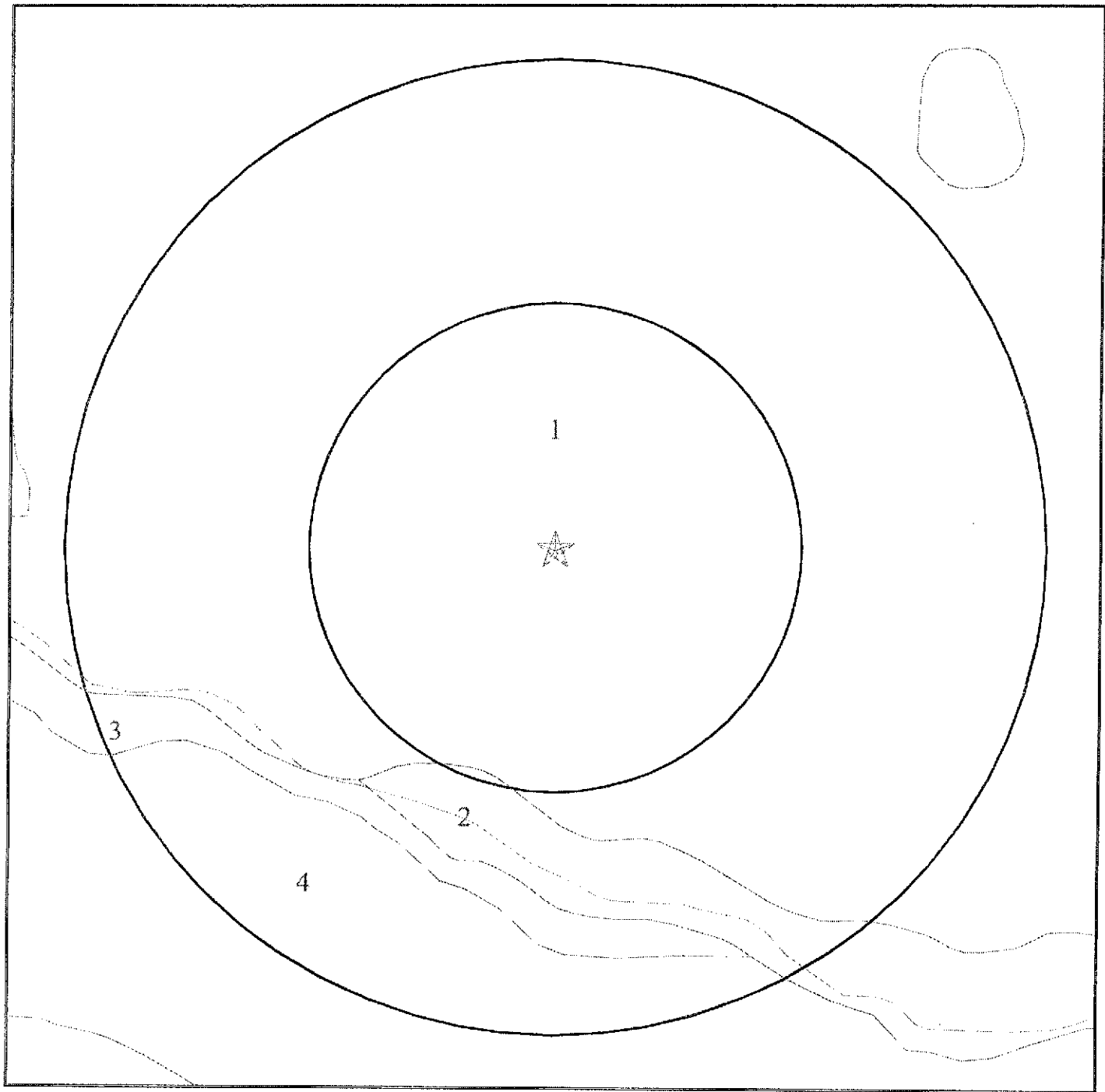
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q (decoded above as Era, System & Series)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 2233038.1s



★ Target Property  
--- SSURGO Soil  
--- Water

0 1/16 1/8 1/4 Miles

SITE NAME: North Fork Site  
ADDRESS: 17488 Golden State Boulevard  
Madera CA 93637  
LAT/LONG: 37.0053 / 120.1168

CLIENT: AES  
CONTACT: Pete Connelly  
INQUIRY #: 2233038.1s  
DATE: June 02, 2008 8:07 am

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

#### Soil Map ID: 1

Soil Component Name: San Joaquin

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
2	11 inches	18 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
3	18 inches	22 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
4	22 inches	59 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

### Soil Map ID: 2

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:
2	11 inches	35 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
3	35 inches	59 inches	cemented	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:

### Soil Map ID: 3

Soil Component Name: Tujunga

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1
2	11 inches	24 inches	stratified sand to loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
3	24 inches	59 inches	stratified gravelly sand to gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

### Soil Map ID: 4

Soil Component Name: Atwater

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	24 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.01 Min: 0	Max: Min:



## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	24 inches	42 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.01 Min: 0	Max: Min:
3	42 inches	59 inches	cemented	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.01 Min: 0	Max: Min:

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS3208009	1/4 - 1/2 Mile ESE
A3	USGS3207848	1/4 - 1/2 Mile NE
5	USGS3208140	1/2 - 1 Mile SSW
6	USGS3208033	1/2 - 1 Mile East
7	USGS3207962	1/2 - 1 Mile SW
8	USGS3208141	1/2 - 1 Mile SW
9	USGS3207904	1/2 - 1 Mile NNE
10	USGS3200819	1/2 - 1 Mile SSE

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	CADW20000034496	1/4 - 1/2 Mile SE
A4	10253	1/2 - 1 Mile NE

### OTHER STATE DATABASE INFORMATION

### STATE OIL/GAS WELL INFORMATION

<u>DISTANCE FROM TP (Miles)</u>	<u>DISTANCE FROM TP (Miles)</u>
1 - 2 Miles North	

# PHYSICAL SETTING SOURCE MAP - 2233038.1s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: North Fork Site  
 ADDRESS: 17488 Golden State Boulevard  
 Madera CA 93637  
 LAT/LONG: 37.0053 / 120.1168

CLIENT: AES  
 CONTACT: Pete Connelly  
 INQUIRY #: 2233038.1s  
 DATE: June 02, 2008 8:07 am

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

**1**

**ESE**

**1/4 - 1/2 Mile  
Higher**

**FED USGS**

**USGS3208009**

Agency cd:	USGS	Site no:	370014120063501
Site name:	011S017E04J001M		
Latitude:	370014		
Longitude:	1200635	Dec lat:	37.00383542
Dec lon:	-120.11072073	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	250.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San Joaquin Lower Chowchilla, California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19650101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	345	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-03-01	Ground water data end date:	1965-03-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1965-03-01	89.00		1965-03-01	89.00	

**2**

**SE**

**1/4 - 1/2 Mile  
Higher**

**CA WELLS**

**CADW20000034496**

Longitude: 120.1097  
Latitude: 37.0003  
Stwellno: 11S17E04R001M  
Districtco: 8  
Welluseco: Z  
Countycode: 20  
Gwcode: 502206  
Site id: CADW20000034496

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

**A3**

**NE**

**1/4 - 1/2 Mile**

**Higher**

**FED USGS**

**USGS3207848**

Agency cd:	USGS	Site no:	370039120063701
Site name:	011S017E04A001M		
Latitude:	370039		
Longitude:	1200637	Dec lat:	37.01077979
Dec lon:	-120.1112765	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	225.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San Joaquin Lower Chowchilla, California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-03-01	Ground water data end date:	1965-03-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-03-01	68.00	

**A4**

**NE**

**1/2 - 1 Mile**

**Higher**

**CA WELLS**

**10253**

**Water System Information:**

Prime Station Code:	10S/17E-33Q01 M	User ID:	20C
FRDS Number:	2000658001	County:	Madera
District Number:	50	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	370042.0 1200636.0	Precision:	100 Feet (one Second)
Source Name:	WELL 01		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

System Number: 2000658  
System Name: VALLEY GRAIN PRODUCTS WATER  
Organization That Operates System:  
Not Reported  
Pop Served: Unknown, Small System  
Area Served: Not Reported  
Connections: Unknown, Small System

5  
SSW  
1/2 - 1 Mile  
Lower

FED USGS USGS3208140

Agency cd:	USGS	Site no:	365947120072301
Site name:	011S017E09D001M		
Latitude:	365947		
Longitude:	1200723	Dec lat:	36.99633538
Dec lon:	-120.12405447	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	245.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San Joaquin Lower Chowchilla, California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19560101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	160	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

6  
East  
1/2 - 1 Mile  
Higher

FED USGS USGS3208033



# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency cd:	USGS	Site no:	370026120060701
Site name:	011S017E04F001M		
Latitude:	370026		
Longitude:	1200607	Dec lat:	37.00716877
Dec lon:	-120.1029427	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	2.5		
Altitude datum:	Not Reported		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19510101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM OF THE SIERRA NEVADA		
Well depth:	206	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1965-06-18
Water quality data end date:	1965-06-18	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

7

SW

1/2 - 1 Mile

Lower

FED USGS

USGS3207962

Agency cd:	USGS	Site no:	365955120073801
Site name:	011S017E04N001M		
Latitude:	365955		
Longitude:	1200738	Dec lat:	36.99855757
Dec lon:	-120.12822138	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	241.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San JoaquinLower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	90.0	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

8  
SW  
1/2 - 1 Mile  
Lower

FED USGS USGS3208141

Agency cd:	USGS	Site no:	365947120074001
Site name:	011S017E08A001M		
Latitude:	365947		
Longitude:	1200740	Dec lat:	36.99633535
Dec lon:	-120.12877691	Coor meth:	M
Coor acc:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	240.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San Joaquin Lower Chowchilla, California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1964-12-01	Ground water data end date:	1964-12-01
Ground water data count:	1		

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1964-12-01	77.00		1964-12-01	77.00	

9

NNE

1/2 - 1 Mile

Lower

FED USGS

USGS3207904

Agency cd:	USGS	Site no:	370105120063801
Site name:	010S017E33H001M		
Latitude:	370105		
Longitude:	1200638	Dec lat:	37.01800194
Dec lon:	-120.11155448	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	254.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San Joaquin Lower Chowchilla, California. Area = 2640 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1965-03-01	Ground water data end date:	1965-03-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-03-01	88.00	

10

SSE

1/2 - 1 Mile

Higher

FED USGS

USGS3200819

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency cd:	USGS	Site no:	365936120062901
Site name:	011S017E10E001M		
Latitude:	365936		
Longitude:	1200629	Dec lat:	36.99327992
Dec lon:	-120.10905374	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	039
Country:	US	Land net:	Not Reported
Location map:	MADERA	Map scale:	24000
Altitude:	250		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Middle San Joaquin Lower Chowchilla. California. Area = 2640 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19780504
Date inventoried:	19870403	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	600	Hole depth:	625
Source of depth data:	driller		
Project number:	470642800		
Real time data flag:	0		
Daily flow data end date:	0000-00-00	Daily flow data begin date:	0000-00-00
Peak flow data begin date:	0000-00-00	Daily flow data count:	0
Peak flow data count:	0	Peak flow data end date:	0000-00-00
Water quality data end date:	1987-06-16	Water quality data begin date:	1987-06-16
Ground water data begin date:	1987-04-03	Water quality data count:	1
Ground water data count:	1	Ground water data end date:	1987-04-03

Ground-water levels, Number of Measurements: 1

	Feet below Surface	Feet to Sealevel
1987-04-03	105.80	

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction  
Distance

Database EDR ID Number

North  
1 - 2 Miles

OIL\_GAS CAOG40000187460

Apinumber: 03900106  
Lease: Chuck  
Field: Madera County  
Map: W5-3  
Source: hud  
Latitude: 37.027006  
Longitude: -120.115963  
Td: 3922  
Sec: 28  
Twn: 10S  
Bm: MD  
X coord: 0  
Y coord: 0  
Zone: Not Reported  
Abanddate: 11/14/1952 00:00:00  
District: 5

Operator: Thos M. Blake  
Well no: 1  
Cagasoil m2 area: Not Reported  
Status cod: 006

Rge: 17E

Spuddate: 09/26/1946 00:00:00  
Comments: Not Reported  
Site id: CAOG40000187460

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

## RADON

### AREA RADON INFORMATION

State Database: CA Radon

#### Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
93637	10	0	0.00

Federal EPA Radon Zone for MADERA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93637

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported



# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### **USGS 7.5' Digital Elevation Model (DEM)**

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

## HYDROGEOLOGIC INFORMATION

### **AQUIFLOW<sup>®</sup> Information System**

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### **Geologic Age and Rock Stratigraphic Unit**

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### **STATSGO: State Soil Geographic Database**

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### **SSURGO: Soil Survey Geographic Database**

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

## LOCAL / REGIONAL WATER AGENCY RECORDS

### **FEDERAL WATER WELLS**

#### **PWS: Public Water Systems**

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### **PWS ENF:** Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

### **USGS Water Wells:** USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## **STATE RECORDS**

### **Water Well Database**

Source: Department of Water Resources

Telephone: 916-651-9648

### **California Drinking Water Quality Database**

Source: Department of Health Services

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

## **OTHER STATE DATABASE INFORMATION**

### **California Oil and Gas Well Locations**

Source: Department of Conservation

Telephone: 916-323-1779

## **RADON**

### **State Database: CA Radon**

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

### **Area Radon Information**

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

### **EPA Radon Zones**

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

## **OTHER**

### **Airport Landing Facilities:** Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

### **Epicenters:** World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

**California Earthquake Fault Lines:** The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

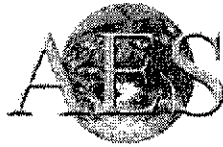
### STREET AND ADDRESS INFORMATION

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# ***APPENDIX D***

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## ***PROPERTY OWNER AND USER QUESTIONNAIRE***



**ANALYTICAL ENVIRONMENTAL SERVICES**

July 3, 2008

Station Casinos (owner)  
Attn: Scott Rapoport (owner's representative)  
1505 S. Pavilion Center Drive  
Las Vegas, NV 89134

RE: Phase I Environmental Site Assessment for North Fork Rancheria

Dear Mr. Rapoport:

As the legal representative for the owner of the Subject Property please complete the questionnaire below with regard to the indicated parcel numbers.

<b>Madera County Assessors Parcel Number (APN)</b>	<b>Acres</b>
033-030-010-000	36.01
033-030-011-000	40.66
033-030-012-000	38.26
033-030-013-000	42.23
033-030-014-000	38.92
033-030-015-000	56.44
033-030-017-000	52.97
<b>TOTAL</b>	<b>305.49</b>

You are being asked to provide this information and insight to assist in the preparation of an environmental site assessment for this property. Please provide as much information as you can to assist in this effort and feel free to attach extra sheets/reports if the space provided is insufficient.

Please return the completed form to:

Analytical Environmental Services  
Attn: Pete Connelly  
1801 7<sup>th</sup> Street, Suite 100  
Sacramento, CA 95814

Thank you for your help and cooperation.

Property Address: \_\_\_\_\_

Assessors Parcel Number: See table

Question	ANSWER	Responses to "Yes" Questions
1. Is the property or any adjoining property currently used for industrial purposes?	Property: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
2. To the best of your knowledge, has the property or any adjoining property been used for industrial purposes in the past?	Property: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
3. Is the property or any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: NO UNK <input checked="" type="radio"/> YES Adjoining: NO UNK <input checked="" type="radio"/> YES	<i>There is a junkyard on the adjoining property located northeast of the Subject Property.</i>
4. To the best of your knowledge, has the property or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: NO UNK <input checked="" type="radio"/> YES Adjoining: NO UNK <input checked="" type="radio"/> YES	<i>There is a junkyard on the adjoining property located northeast of the Subject Property.</i>
5. Has fill dirt been brought onto the property that originated from a contaminated site or that is of an unknown origin?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	



<p>5. Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than five gallons (19 liters) in the aggregate, stored on or used at the property or at the facility?</p>	<p>New?: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past?: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>6. Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gallon [208 liters]) or sacks of chemicals located on the property or at the facility?</p>	<p>New?: NO UNK <input type="radio"/> YES          Past?: NO UNK <input type="radio"/> YES</p>	<p><i>55-gallon drums were removed on March 14, 2008 as documented in the July 2008 Phase I ESA.</i></p>
<p>7. Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?</p>	<p>New?: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past?: <input type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>8. Is there currently, or to the best of your knowledge has there been previously, any areas of stained soil on the property?</p>	<p>New?: NO UNK <input type="radio"/> YES          Past?: NO UNK <input type="radio"/> YES</p>	<p><i>Stained soils were observed in areas where waste oils were stored. The stained soils were removed on June 9, 2008 as documented in the July 2008 Phase I ESA.</i></p>
<p>9. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property?</p>	<p>New?: NO UNK <input type="radio"/> YES          Past?: NO UNK <input type="radio"/> YES</p>	<p><i>One 10,000 gallon AST was noted on the Subject Property and was removed prior to Station Casinos purchasing the property.</i></p>

<p>10. Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?</p>	<p>New?: NO UNK <b>YES</b>          Past?: NO UNK <b>YES</b></p>	<p><i>Irrigation vents located at various locations on the site.</i></p>
<p>11. Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?</p>	<p>New?: <b>NO</b> UNK YES          Past?: <b>NO</b> UNK YES</p>	
<p>12. If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environment/health agency?</p>	<p><b>NO</b> UNK YES</p>	
<p>13. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?</p>	<p><b>NO</b> UNK YES</p>	

<p>14. Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?</p>	<p>NO UNK <b>YES</b></p>	<p><i>During the 2007 site reconnaissance visit, waste oils, household paints, empty 5-gallon containers of various agricultural chemicals, and one bag of fertilizer was noted on the Subject Property (as documented in the 2008 Phase I).</i></p>
<p>15. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?</p>	<p>NO UNK <b>YES</b></p>	<p><i>Materials were found on site. The materials were generally within their original containers with the exception of approximately ten gallons of waste oils that were contained within five gallon buckets and were subsequently removed. See attached Phase I ESA for documentation.</i></p>
<p>16. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?</p>	<p><b>NO</b> UNK YES</p>	
<p>17. Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?</p>	<p><b>NO</b> UNK YES</p>	

<p>18. To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried, and/or burned on the property?</p>	<p>NO UNK <b>YES</b></p>	<p><i>The answer to this question would depend on how you define "dumped". Materials were left onsite either from the property owner, or from individuals entering the property without consent of the property owner. All materials were subsequently removed as documented in attachments to the 2008 Phase I ESA.</i></p>
<p>19. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?</p>	<p><b>NO</b> UNK YES</p>	

20. How do you currently use the property and how have you used the property in the past (please be specific).

*The property is currently dry farmed and it's our understanding that it was also dry farmed by the previous owner.*

21. What is your understanding of how the property was used before your ownership/occupancy?

*It's our understanding that the property was dry farmed by the previous owner.*

I hereby certify that to the best of my knowledge all of the information provided in this environmental questionnaire is true and correct.

Signature: Scott J. Rapoport

Print Name/Address: Scott Rapoport; 1505 S. Pavilion Center Dr.; Las Vegas, NV 89135

Phone: (702) 495-4280

Date complete: 7/3/08

Relation to property: owner ☐ operator ☐ manager ☒ tenant ☐

## Analytical Environmental Services

### CLIENT QUESTIONNAIRE

Per ASTM Standard Practice E 1527-05, Section 6, User Responsibilities, the User of an ESA has specific obligations for performing tasks during the ESA that will help identify the possibility of *Recognized Environmental Conditions* in connection with the Site. Failure by the User to fully comply with the requirements may result in a *data gap* being identified in the report and may impact the ability to use the report to help qualify for *Landowner Liability Protections* (LLPs) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). If this questionnaire is not returned to Analytical Environmental Services (AES) prior to issuance of the draft Phase I report, then AES assumes that the User does not have any information or actual knowledge pursuant to ASTM Standard Practice E 1527-05, Section 6, User Responsibilities. AES makes no representations or warranties regarding a User's qualification for protection under any federal, state or local laws, rules or regulations.

**Please complete the following and return immediately via email or fax to the attention of:**

Pete Connelly  
E-mail: [pconnelly@analyticalcorp.com](mailto:pconnelly@analyticalcorp.com)  
Fax: (916) 447-1665

**If other parties are intending to be the Users of the ESA report, then please forward a copy of this questionnaire for them to complete and return to AES.**

*Please provide the following information (if available) per the requirements of ASTM E 1527-05.*

**1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25)**

Are you aware of any environmental cleanup liens against the site that are filed or recorded under federal, tribal, state or local law? Yes ☐ or No ☒

If yes, please provide a description of the lien(s).

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**2. Activity and land use limitations (AULs) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26)**

Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? Yes ☐ or No ☒ If yes, please provide.

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**3. Specialized knowledge or experience of the person seeking to qualify for the Landowner Liability Protections (40 CFR 312.28)**

As the user of this ESA do you have any specialized knowledge or experience related to the site or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the site or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Yes ☒ or No ☐ If yes, please explain.

There is a junkyard on the adjoining property located  
northeast of the Subject Property.

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**4. Relationship of the purchase price to the fair market value of the site if it were not contaminated (40 CFR 312.29)**

- a. Does the purchase price being paid for this site reasonably reflect the fair market value of the site? Yes ☒ or No ☐

- b. If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the site?

Yes ☐ or No ☐ If yes, please explain.

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**5. Commonly known or reasonably ascertainable information about the site  
(40 CFR 312.30)**

Are you aware of commonly known or reasonably ascertainable information about the site that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

- a. Do you know the past uses of the site? Yes ☐ or No ☒  
If yes, please state.

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- b. Do you know of specific chemicals that are present or once were present at the site?  
Yes ☐ or No ☒ If yes, please state.

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- c. Do you know of spills or other chemical releases that have taken place at the site?  
Yes ☐ or No ☒ If yes, please state.

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- 6. Do you know of any environmental cleanups that have taken place at the site?**  
Yes ☒ or No ☐ If yes, please state.

55-gallon drums were removed on March 14, 2008 as  
documented in the July 2008 Phase I ESA.

---

7. The degree of obviousness of the presence or likely presence of contamination at the site, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31)

As the user of this ESA, based on your knowledge and experience related to the site are there any obvious indicators that point to the presence or likely presence of contamination at the site?

Yes ☐ or No ☒ If yes, please explain.

---

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This questionnaire was completed by:

Name Scott Rapoport

Title Director of Development

Signature *Scott S. Rapoport*

Company of User Station Casinos, Inc.

Address of User 1505 S. Pavilion Center Dr.

Las Vegas, NV 89135

Date 7/3/08

# ***APPENDIX E***

---

***BUREAU OF INDIAN AFFAIRS LETTER TO NORTH FORK  
RANCHERIA***



# United States Department of the Interior

RECEIVED  
JUL 23 07 FA

BUREAU OF INDIAN AFFAIRS  
Pacific Regional Office  
2800 Cottage Way  
Sacramento, California 95825

JUL 19 2007

Elaine Fink, Chairperson  
North Fork Rancheria  
P.O. Box 929  
North Fork, CA 93643

Dear Ms. Fink:

On July 12, 2007, the Bureau of Indian Affairs (BIA) conducted a Phase I Environmental Site Assessment (ESA) for a proposed fee-to-trust land acquisition of 305+ acres and subsequent development of a casino/hotel resort by the North Fork Rancheria. The property is located in Madera County, California, just north of the City of Madera and adjacent to State Route 99 (SR-99).

The inspection consisted of a walk through of the grounds and structures on the proposed trust site by the BIA, Pacific Region, Environmental Protection Specialist with the assistance of Pete Connelly, Associate, Analytical Environmental Services. In compliance with Departmental guidance 602 DM 2, an ESA was conducted to ensure the absence of all risk factors exposing the Department to liability of hazardous substances and environmental cleanup costs. The term "Recognized Environmental Conditions" (REC) is defined as, "the presence or likely presence of contamination of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws."

The inspection revealed areas of immediate concern for contamination to ground and water resources located on and off the subject property. The Recognized Environmental Conditions (REC) that exists on the parcels are described as follows:

- Several agriculture wells were observed on the subject property; their current operational status is unclear and will need to be addressed. Abandoned wells that have not been properly closed are a potential conduit for groundwater contamination. See enclosed photographs.
- Several 55 gallon drums were observed on the subject property. The unmarked drums were observed to be partially filled with unknown material and need to be properly disposed. See enclosed photographs.
- Numerous piles of household, metal, and wood debris were observed on the subject property. The debris was observed along the southwest and southeast corner of the property. The bulk of the debris was scattered throughout the abandoned single family residence

located at the southeast corner of the property adjacent to Golden State Blvd. and Hwy 99. See enclosed photographs.

- Abandoned farm equipment with hazardous fluids remaining in reservoirs.
- Various containers of suspected hazardous materials in deteriorated condition; un-labeled and un-marked containers, unidentified tanks, improperly stored hazardous material containers, vehicle batteries, and several containers of used petroleum products deteriorated and spilling onto the ground posing an immediate threat to the environment. These incidents provide a conduit for contamination to groundwater and environment.

We request your assistance in addressing these REC's in order to facilitate the FTT process. Enclosed are various photos and maps to assist with identification and location of the REC's. Also, we have enclosed various recommendations and procedures to address these REC's in accordance to local, state, and federal laws:

1. Identify the status of each well and decide in the best interest of the tribe, which wells will serve the tribes long term goals. Upgrade and provide adequate protection to wells that will remain open for tribal use. Properly close remaining wells in accordance to local, state, and federal laws. Provide EPA approved closure documentation to the BIA once completed.
2. Identify the contents of the 55 gallon drums. Once contents are identified ensure that identified material and drums are properly disposed of in accordance to local, state and federal laws.
3. Properly clean and dispose of all household, metal, and wood debris on the site in accordance with local, state, and federal laws.
4. Properly identify and dispose of storage containers, tanks, car batteries, contaminated soils and hazardous materials in accordance with local, state, and federal laws. Ensure that the handling of all hazardous materials identified, be undertaken by a certified environmental professional.
5. Upon completion of above, provide copies of all remedial actions to the BIA for review and approval.

Our office is willing to offer technical assistance in the cleanup of the above sites in order to facilitate the Tribe's land acquisition process. Once all items above have been addressed, please contact our office to reschedule an ESA with our staff.



If you have any questions or need additional information, please contact Patrick O'Mallan, Pacific Region, Environmental Protection Specialist, at (916) 978-6044, or John Rydzik, Chief, Division of Environmental, Cultural Resources Management and Safety at (916) 978-6042.

Sincerely,

/s/ Clayton Gregory

Regional Director

Enclosures

cc: David Zweig, Analytical Environmental Services (AES)

**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



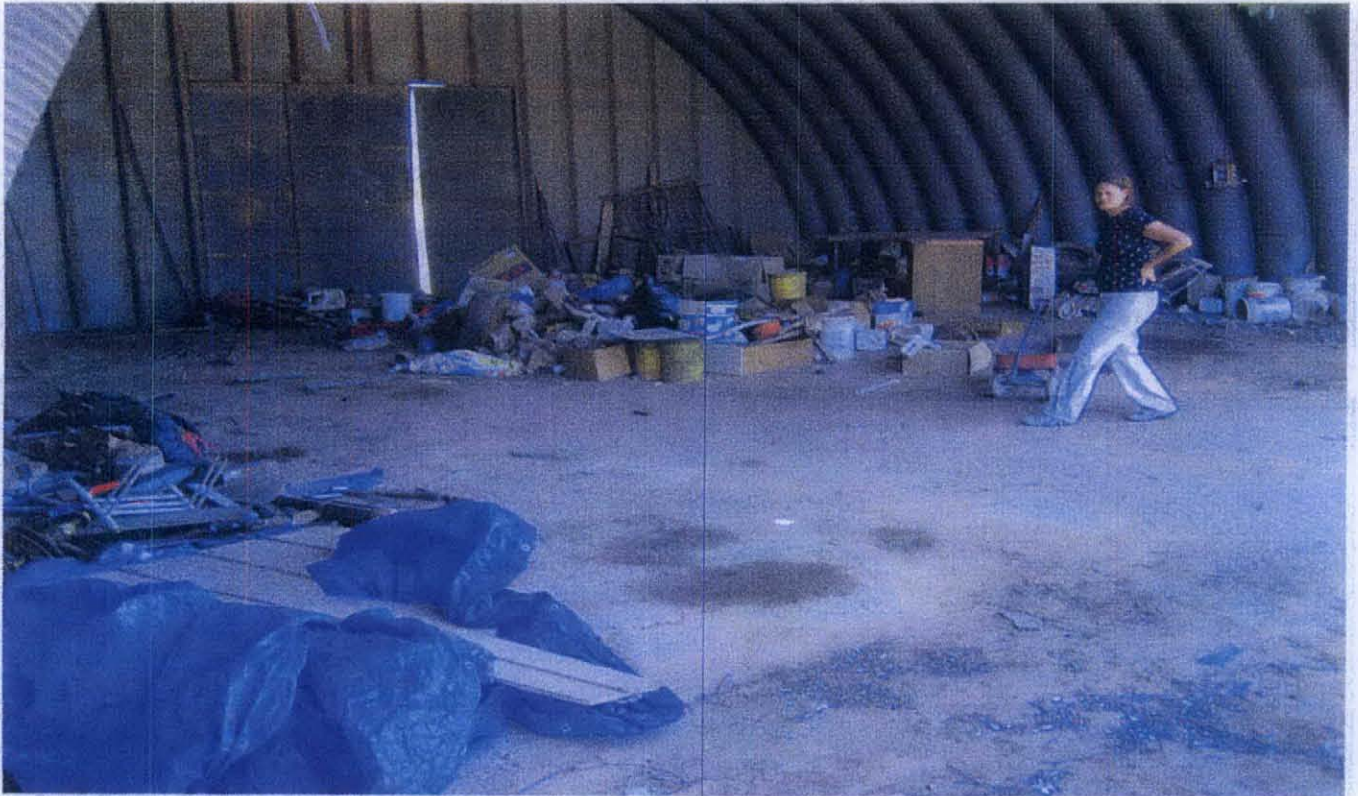
View of one of several wells located on subject property.



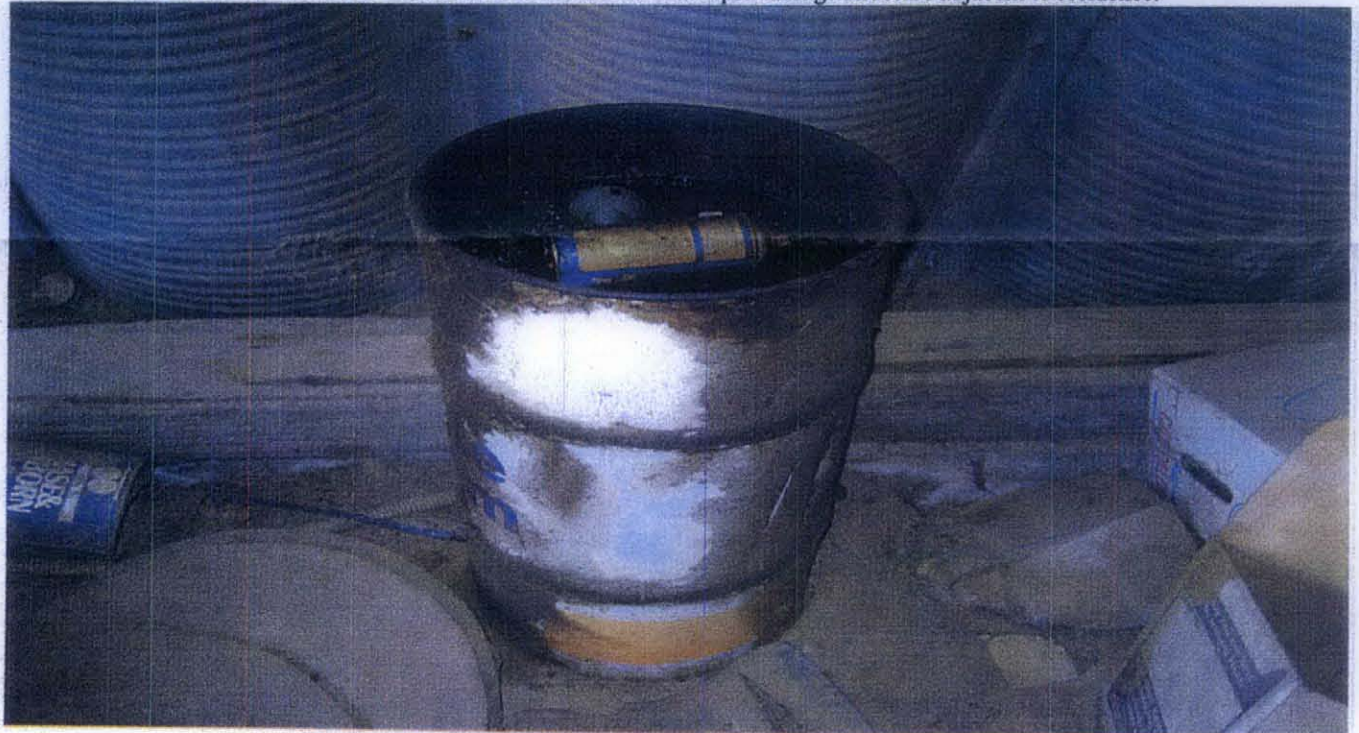
Ground water well located adjacent to single family residence.



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



Various hazardous materials and debris left abandoned in an open storage structure adjacent to residence.



Used petroleum material left in an unsecured/unmarked drum.



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



Abandoned farm equipment



Various household, metal and wood debris located along the southwest portion of subject property.



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



Various unmarked 55 gallon drums in a deteriorated state, without proper containment.



Unidentified hazardous material in a deteriorated state, leaking onto ground surface area.



# ***APPENDIX F***

---

***PROPERTY OWNER RESPONSE TO 2007 BIA PHASE I ESA***





July 2, 2008

United States Department of the Interior  
Bureau of Indian Affairs  
Pacific Regional Office  
Attn: Patrick O'Mallan  
2800 Cottage Way  
Sacramento, California 95825

**RE: Phase I Environmental Site Assessment for a proposed fee-to-trust land acquisition of 305± acres by the North Fork Rancheria**

Dear Mr. O'Mallan:

This letter is written in response to your letter of July 19, 2007, to Elaine Fink, Chairperson for the North Fork Rancheria ("Tribe") regarding the follow-up Phase I Environmental Site Assessment performed on July 12, 2007 for the proposed fee-to-trust land acquisition of 305± acres by the North Fork Rancheria. As a representative of Fresno Land Acquisitions, LLC, the owner of the subject property and Station Casinos, Inc. ("Station"), the Tribe's Developer, I am responding on behalf of the Tribe.

Your letter indicated that there were immediate concerns of contamination to ground and water resources located on and off the subject property. There were certain Recognized Environmental Conditions ("REC") that existed at the time of the assessment that should be remediated. Each of the RECs identified in your letter are restated below, followed by the steps taken to address them.

Wells:

"Several agriculture wells were observed on the subject property; their current operational status is unclear and will need to be addressed. Abandoned wells that have not been properly closed are a potential conduit for groundwater contamination."

*Response:*

*Station has contracted with Bradley & Sons, who performed an on-site evaluation to determine the status of the wells. Bradley & Sons determined that the wells are already capped and the caps need only to be secured. Securing the caps on the wells would prevent tampering and would eliminate the potential for groundwater contamination. Capping the wells, as opposed to permanently destroying them, would allow the Tribe the flexibility to reopen the wells at a later date, should the need arise.*

*Although the Tribe's current plans for the site do not anticipate utilizing any of these wells, the course of action was to secure the caps on the wells to preserve future flexibility while eliminating potential conduits for groundwater contamination in the interim. Bradley & Son secured the well caps on June 27, 2008. Before and after photos showing well caps are included as Exhibit A.*

55 Gallon Drums:

"Several 55 gallon drums were observed on the subject property. The unmarked drums were observed to be partially filled with unknown material and need to be properly disposed."

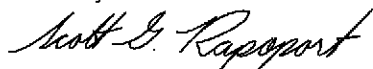
*Response:*

*buckets were removed from a small corral area. Two of the buckets contained waste oils that were subsequently tested onsite for toxicity and volatility. The tests indicated contents of the five gallon buckets contained rainwater and non RCRA waste oils. Soil staining in the small corral area was the result of incidental dripping of contents from these buckets. The small area of surface soil staining was left in place since the presence of such staining did not pose an immediate risk to human health or the environment. The prior tenant removed the above ground storage tank, so removal of this tank was not necessary.*

*On June 11, 2008, PARC Environmental removed the stained soils from the site using hand tools. The soils were contained within a 55-gallon drum and subsequently removed from the site. See attached Exhibit E for the Uniform Hazardous Waste Manifest documenting proper containment and removal. Used oils filters were also removed during the June 11 soil removal. Analytical data from soil samples that were collected in the areas around the staining contain elevated levels of diesel fuels and waste oils. One sample was collected in the area of staining, and a second was taken about five feet from the first sampling location. Analytical results are attached to this letter. Elevated levels of diesel fuel and waste oils indicate additional soil removal is necessary. A Limited Phase II Soil Investigation that would provide a more thorough characterization of the amount and extent of affected soils will be prepared.*

Hopefully, the foregoing responses adequately address the RECs referenced in your letter. Should you have any additional questions or need any additional clarification, please do not hesitate to contact me at (702) 495-4280.

Sincerely,



Scott G. Rapoport, CPA  
Director of Development  
(702) 495-4280 office  
(702) 501-0718 cell  
(702) 495-3270 fax  
scott.rapoport@stationcasinos.com

**EXHIBIT A**

**Bradley & Sons Well Cap Site Photos**



**Photo 1:** Photo showing onsite well prior to well cap being secured



**Photo 2:** Photo of the well from the previous photo showing secured well cap.



**Photo 3:** A second onsite well prior to well cap being secured.



**Photo 4:** Photo of the well from the previous photo showing secured well cap.

## EXHIBIT B

## Uniform Hazardous Waste Manifest

RHO-89496 840291

Please print or type. (Form designed for use on file (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAC002627765	2. Page 1 of 2	3. Emergency Response Phone (800) 955-7761	4. Manifest Tracking Number 000063842GBF
5. Generator's Name and Mailing Address Fresno Land Acquisitions, LLC 1505 S. Pavilion Ctr. Dr., Las Vegas, NV 89135 Generator's Phone: (702) 495-4280 - Scott Rapoport					
Generator's Site Address (if different than mailing address) Fresno Land Acquisitions, LLC APN # 033-030-014 Madera, CA 93637					
6. Transporter 1 Company Name PARC Environmental				U.S. EPA ID Number CAT982507154	
7. Transporter 2 Company Name Philip West Industrial Services				U.S. EPA ID Number CAR000177527	
8. Designated Facility Name and Site Address Rho Chem Corporation 425 Isle Avenue, Inglewood, CA 90301 Facility's Phone: (800) 870-6233				U.S. EPA ID Number CAD008364432	
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type	11. Total Quantity	12. Unit Wt./Vol.
	X	1. Waste Aerosols, flammable (Aerosol Cans), 2.1, UN1850 (ERG#128)	001 DF	00020	P
	X	2. Waste Paint & Related Materials, 3, UN1283, PG II (ERG#128)	001 CF	00001	Y
	X	3. Waste Paint & Related Materials, 3, UN1283, PG II (ERG#128)	002 DM	00350	P
	X	4. Waste Pesticides, Liquid, Toxic, 6.1, UN2802, PG II (ERG#151) (LABPACK)	001 DF	00010	G
13. Waste Codes 612 D001 481 D001 481 D001 232 U051					
14. Special Handling Instructions and Additional Information 1. Aerosols: DOT Form Number: 357371-00 (1x5, S/O) 2. Paint Related Materials, Profile: 606893-00 (1x5, S/O) 3. Paint Related Materials, Profile: 606893-00 (2x55, O/T) 4. Pesticide liquid Profile Number: 377057-00 (1x30, O/T) Caution: Wear proper OSHA approved Personal Protective Equipment (PPE) when handling the materials on this manifest.					
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.					
Generator's/Officer's Printed/Typed Name Agent For Generator Arturo Lara Signature Month Day Year 03 14 08					
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:		
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Signature Month Day Year 03 14 08 Transporter 2 Printed/Typed Name Signature Month Day Year 03 14 08				
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space line 11 is missing n.o.s. line 14 is missing n.o.s. 18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year				
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. H141 2. H061 3. H061 4. H141				
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name Signature Month Day Year Melissa Duran M. Duran 13 08 08				
	EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.				

DESIGNATED FACILITY TO GENERATOR

## EXHIBIT B (cont.)

## Uniform Hazardous Waste Manifest page 2

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved, OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator ID Number <b>CAC002827785</b>	22. Page <b>2 of 2</b> (FEV)	23. Manifest Tracking Number <b>000063842</b>	
24. Generator's Name <b>Fresno Land Acquisitions, LLC</b> <b>1505 S. Pavilion Ctr. Dr., Las Vegas, NV 89135</b>					
25. Transporter Company Name			U.S. EPA ID Number		
26. Transporter Company Name			U.S. EPA ID Number		
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No. Type	29. Total Quantity	30. Unit Vol./Vol.	31. Waste Codes
X	Waste Toxic Solids, Organic, n.o.s., B1, UN2811, PGII (ERG#154) WASTE PESTICIDES SOLID, TOXIC, NOS. (LARGE PACK), L.C.I. UN2568, P, LI	001 DE	00010	P	551
X	Waste Sulfur, 9, NA1350, PGIII (ERG#133)	001 DE	00040	P	181
	7 Non-RCRA, Hazardous Waste Liquid (Motor Oil) (ERG#171)	001 DM	00040	G	343
	Non-RCRA, Hazardous Waste Liquid (Oil & Water) (ERG#171)	001 DM	00055	G	343
	9 Non-RCRA, Hazardous Waste Solid (Used Oil Filters) (ERG#171)	001 DM	00100	P	352
	10 Non RCRA Hazardous Waste Solid, (Grease Over Pack), (ERG#171)	001 DE	00075	P	352
	11 Non RCRA Hazardous Waste Solid, (Potassium Carbonate) (ERG#171)	001 DE	00100	P	352
32. Special Handling Instructions and Additional Information 6. Herbicides, Profile Number: 377058-00 (1x30, O/T) 10. Grease Over Pack, Profile Number: 80643-00 (1x30, O/T) 8. Sulfur, Profile Number: 377058-00 (1x30, O/T) 11. Potassium Carbonate, Profile Number: 605543-00 (1x30, O/T) 7. Motor Oil Profile Number: 606482-00 (1x55, O/T) 12. Potassium Carbonate, Profile Number: 605543-00 (1x30, O/T) 8. Oil and Water Profile Number: 806481-00 (1x55, O/T) 13. Used Oil Filters, Profile Number: 347485-00 (1x55, O/T) 14.					
33. Transporter Acknowledgment of Receipt of Materials Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____					
34. Transporter Acknowledgment of Receipt of Materials Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____					
35. Discrepancy _____					
36. Hazardous Waste Report Management Method Code(s) (i.e., codes for hazardous waste treatment, disposal, and recycling systems) <b>F1141, F1141, F1061, F1061, H141</b> <b>H141, H141</b>					

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR



## EXHIBIT C

### Farm Equipment Removal



**Photo 1:** Farm equipment prior to removal



**Photo 2:** Area where equipment was removed. No soil staining was evident.



**Photo 3:** Hay harvester.

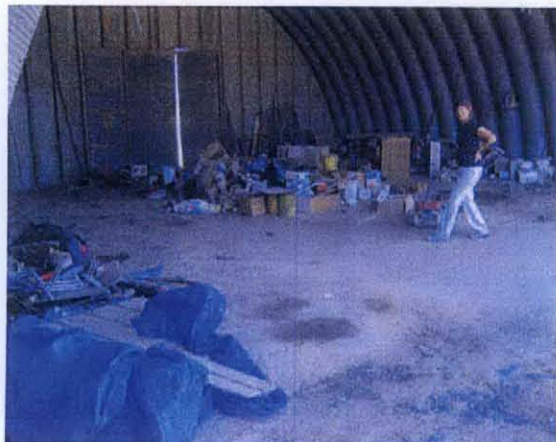


**Photo 4:** Photo showing equipment removal. Minimal soil staining was evident.



## EXHIBIT D

### Clean Up Before & After Photos



**Photo 1:** Various household chemicals, paints, and unmarked containers located in a cement slab covered storage structure adjacent to residence (before clean up).



**Photo 2:** Storage structure from the previous photo showing cement slab and no visible surface cracks in (after clean up).



**Photo 3:** Various household, metal and wood debris located along the southwest portion of subject property (before clean-up).



**Photo 4:** Southwest portion of the subject property after clean-up.

EXHIBIT D (cont.)



**Photo 5:** Various unmarked 55 gallon drums, containing rain water and used oil filters (before removal).



**Photo 6:** Various agricultural chemicals (prior to removal).



**Photo 7:** Proper containment of waste oil prior to removal.



**Photo 8:** Various unmarked containers seen here in dumpster prior to removal.

## EXHIBIT E

## Uniform Hazardous Waste Manifest

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved, OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number <b>CAC002627765</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>(800) 955-7761</b>	4. Manifest Tracking Number <b>000390903GBF</b>
5. Generator's Name and Mailing Address <b>Fresno Land Acquisitions, LLC 1505 South Pavilion Dr, Las Vegas, NV 89135 Generator's Phone: (702) 501-0718 Scott Rapoport</b>					
Generator's Site Address (if different than mailing address) <b>Fresno Land Acquisitions, LLC APN # 033-030-014 Madera, CA 93637</b>					
6. Transporter 1 Company Name <b>PARC Environmental</b>					U.S. EPA ID Number <b>CAT982507154</b>
7. Transporter 2 Company Name <b>Philip West Industrial Services</b>					U.S. EPA ID Number <b>CAR000177527</b>
8. Designated Facility Name and Site Address <b>Rho Chem Corporation 425 Isis Avenue, Inglewood, CA 90301 Facility's Phone: (800) 870-6233</b>					U.S. EPA ID Number <b>CAD008364432</b>
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit (Wt./Vol.)
1	Non-RCRA, Hazardous Waste Solid (Used Oil Filters) (ERG#171)	001	DF	00045	P
2	Non-RCRA, Hazardous Waste Solid (Oil in Soil)	002	DM	00860	P
3					
4					
13. Waste Codes <b>352</b> <b>811</b>					
14. Special Handling Instructions and Additional Information <b>1. Profile# 347485-00 (1 x 14) o/t</b> <b>2. Profile# 330657 (2 x 55 o/t)</b>					
Caution: Wear proper OSHA approved Personal Protective Equipment (PPE) When handling the materials on this manifest.					
Customer's Reference #: <b>NONE</b> <b>PARC Job#: 98249</b>					
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/discarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.					
Generator's/Officer's Printed/Typed Name <b>Jeff Lassotovich Sign Agent For Generator</b>					
Signature <i>[Signature]</i> Month <b>6</b> Day <b>9</b> Year <b>98</b>					
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:					
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <b>Jeff Lassotovich</b> Signature <i>[Signature]</i> Month <b>6</b> Day <b>9</b> Year <b>98</b>					
Transporter 2 Printed/Typed Name <i>[Signature]</i> Month <b>6</b> Day <b>9</b> Year <b>98</b>					
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number:					
Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year					
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)					
1	2	3	4		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a					
Printed/Typed Name Signature Month Day Year					

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)



4203 West Swift ▼ Fresno, California 93722 ▼ Phone 559.275-2175 ▼ Fax 559.275-4422

NELAP Certification number: 05233CA (HW)

June 19, 2008

Parc Environmental  
2706 S. Railroad Avenue  
Fresno, California 93725

Attn: Brian Herrick

Subject: Report of Data: Case 56282

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dear Mr. Herrick:

Two soil samples for project "98249" were received on June 11, 2008, in good condition. Written results are being provided on this June 19, 2008, for the requested analyses. All holding times were met.

For the EPA 8015B TPH-Diesel and Motor Oil analysis, the samples were extracted according to EPA method 3550B.

For the Oil & Grease analysis, the samples were prepared and analyzed according to SM 5520B modified for soils.

No unusual problem or complication was encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Leonard Fong, Ph.D, Laboratory Director  
APPL, Inc.

LF/rp  
Enclosure  
cc: File

Number of pages: 8



## TPH Diesel Soil EPA 8015B

Parc Environmental  
2706 S. Railroad Ave.  
Fresno, CA 93725

Attn: BRIAN HERRICK

Project: 98249

Sample ID: 1a

Sample Collection Date: 06/11/08

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

ARF: 56262

APPL ID: AX79323

QCG: \$TPHDS-080612A-123356

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8015B-	Diesel Fuel	13000000 T3M	1000000	ug/kg	06/12/08	06/16/08
EPA 8015B-	Motor Oil	25000000	10000000	ug/kg	06/12/08	06/16/08
EPA 8015B-	Surrogate: Octacosane	DO	47-140	%	06/12/08	06/16/08
EPA 8015B-	Surrogate: Ortho-Terphenyl	DO	58-128	%	06/12/08	06/16/08

DO = Diluted Out.

++(T3M) The analyst has noted that the chromatogram of this sample is mainly higher boiling hydrocarbons.

Quant Method: TPHD0407.M  
Run #: 614081  
Instrument: Apollo  
Sequence: 080614  
Dilution Factor: 1000  
Initials: EJ

Printed: 06/19/08 4:45:36 PM  
Form 1 - APPL Standard GC - No MC

## TPH Diesel Soil EPA 8015B

Parc Environmental  
2706 S. Railroad Ave.  
Fresno, CA 93725

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: BRIAN HERRICK

Project: 98249

Sample ID: 2a

Sample Collection Date: 06/11/08

ARF: 56262

APPL ID: AX79324

QCG: \$TPHDS-080612A-123356

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8015B-	Diesel Fuel	3400000 T3M	100000	ug/kg	06/12/08	06/16/08
EPA 8015B-	Motor Oil	7600000	1000000	ug/kg	06/12/08	06/16/08
EPA 8015B-	Surrogate: Octacosane	DO	47-140	%	06/12/08	06/16/08
EPA 8015B-	Surrogate: Ortho-Terphenyl	DO	58-128	%	06/12/08	06/16/08

DO = Diluted Out.

++(T3M) The analyst has noted that the chromatogram of this sample is mainly higher boiling hydrocarbons.

Quant Method: TPHD0407.M  
Run #: 614060  
Instrument: Apollo  
Sequence: 080614  
Dilution Factor: 100  
Initials: EJ

Printed: 06/17/08 10:27:48 AM  
Form 1 - APPL Standard GC - No MC



## Wetlab Results

ARF: 56262

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Parc Environmental  
2706 S. Railroad Ave.  
Fresno, CA 93725

Attn: BRIAN HERRICK

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
<b>APPL ID: AX79323</b> -Client Sample ID: 1a						
-Sample Collection Date: 06/11/08 Project: 98249						
SM5520Bm	Oil & Grease	33600	50.0	mg/kg	06/11/08	06/11/08
<b>APPL ID: AX79324</b> -Client Sample ID: 2a						
-Sample Collection Date: 06/11/08 Project: 98249						
SM5520Bm	Oil & Grease	16400	50.0	mg/kg	06/11/08	06/11/08

Printed: 06/12/08 10:19:10 AM

**Method Blank**  
**TPH Diesel Soil EPA 8015B**

Blank Name/QCG: 080612S-79323 - 123356  
Batch ID: \$TPHDS-080612A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	Diesel Fuel	Not detected	1000	ug/kg	06/12/08	06/14/08
BLANK	Motor Oil	Not detected	10000	ug/kg	06/12/08	06/14/08
BLANK	Surrogate: Octacosane	89.2	47-140	%	06/12/08	06/14/08
BLANK	Surrogate: Ortho-Terphenyl	81.9	58-128	%	06/12/08	06/14/08

Quant Method: TPHD0407.M  
Run #: 614021  
Instrument: Apollo  
Sequence: 080614  
Initials: EJ

**Laboratory Control Spike Recovery**  
**TPH Diesel Soil EPA 8015B**

APPL ID: 080612S-79323 LCS - 123356  
Batch ID: \$TPHDS-080612A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Compound Name	Spike Level ug/kg	SPK Result ug/kg	SPK % Recovery	Recovery Limits
Diesel Fuel	20000	18500	92.5	64-122
Motor Oil	20000	18800	94.0	50-150
Surrogate: Octacosane	1000	901	90.1	47-140
Surrogate: Ortho-Terphenyl	1000	845	84.5	58-128

Comments:

<b>Primary</b>	<b>SPK</b>
Quant Method :	TPHD0407.M
Extraction Date :	06/12/08
Analysis Date :	06/14/08
Instrument :	Apollo
Run :	614022
Initials :	EJ

Printed: 06/17/08 10:27:41 AM

APPL Standard LCS

## WETLAB BLANK

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Method	Analyte	Result	PQL	Units	Prep Date	Anal Date	QC Group
SM5520Bm	Oil & Grease	Not detected	50.0	mg/kg	06/11/08	06/11/08	\$O&GS-080611A-AX79323

# Laboratory Control Spike Recovery

**WETLAB**

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Method	Compound Name	Spike Level mg/kg	SPK Result mg/kg	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
SM5520Bm	Oil & Grease	241.56	240	99.4	80-120	06/11/08	06/11/08	\$O&GS-080611A-AX79323

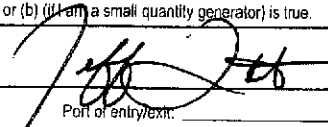
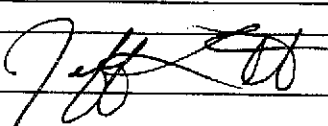
Comments:

### CHAIN OF CUSTODY RECORD

APPL, Inc.  
4203 W. Swift  
Fresno, CA 93722  
Phone: (559) 275 2175  
Fax: (559) 275-4422

Report to:		PLEASE PRINT	
Company Name		PARC ENVIRONMENTAL	
Address		2706 S. RAILROAD AVE.	
FRESNO, CA 93725			
Attn: BRIAN HEARICK			
Phone: 559-233-7156			
Fax:			
Invoice to:		PLEASE PRINT	
Company Name		PARC ENV.	
Address		2706 S. RAILROAD	
FRESNO, CA 93725			
Attn: BRIAN HEARICK			
Phone: 559-233-7156			
Fax:			
Project Name/Number		98249	
Purchase Order Number			
Sample Identification			
1a			
2a			
Sample Location			
INSIDE CORAL			
BACKGROUND			
Date Collected			
6-11			
6-11			
Time Collected			
0800			
0810			
Matrix			
Number of Containers			
1			
1			
Sampler (Print)		JEFF LASSONAVANT	
Sampler (Signature)			
Analysis Requested/Method Number			
Date Shipped:			
Carrier:			
Waybill No.:			
Comments:			
Shuttle Temperature:			
Turnaround Requested: MUST CHECK ONE		3-5 DAYS	
<input type="checkbox"/> Standard (2-3 week)		<input type="checkbox"/> One week	
Relinquished by sampler:		Relinquished by:	
JEFF LASSONAVANT			
Relinquished by:			
Date		Date	
6-11		0930	
Time		Time	
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0930		0930	
Received by:		Received by:	
Date		Date	
6-11			



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAC002627765</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>(800) 955-7761</b>	4. Manifest Tracking Number <b>000390903GBF</b>			
5. Generator's Name and Mailing Address <b>Fresno Land Acquisitions, LLC 1505 South Pavilion Dr, Las Vegas, NV 89135</b>			Generator's Site Address (if different than mailing address) <b>Fresno Land Acquisitions, LLC APN # 033-030-014 Madera, CA 93637</b>					
6. Transporter 1 Company Name <b>PARC Environmental</b>			U.S. EPA ID Number <b>CAT982507154</b>					
7. Transporter 2 Company Name <b>Philip West Industrial Services</b>			U.S. EPA ID Number <b>CAR000177527</b>					
8. Designated Facility Name and Site Address <b>Rho Chem Corporation 425 Isis Avenue, Inglewood, CA 90301</b>			U.S. EPA ID Number <b>CAD008364432</b>					
Facility's Phone: <b>(800) 870-6233</b>								
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		1. <b>Non-RCRA, Hazardous Waste Solid (Used Oil Filters) (ERG#171)</b>	<b>001</b>	<b>DF</b>	<b>00045</b>	<b>P</b>	<b>352</b>	
		2. <b>Non-RCRA, Hazardous Waste Solid (Oil in Soil)</b>	<b>002</b>	<b>DM</b>	<b>00860</b>	<b>P</b>	<b>611</b>	
		3.						
		4.						
14. Special Handling Instructions and Additional Information 1. Profile# <b>347485-00 (1 x 14 ) o/t</b> 2. Profile# <b>338687(2x55o/t)</b> <div style="text-align: right;">Caution: Wear proper OSHA approved Personal Protective Equipment (PPE) When handling the materials on this manifest. Customer's Reference #: <b>NONE</b> PARC Job#: <b>98249</b></div>								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Officer's Printed/Typed Name <b>Jeff Lassotovitch Sign Agent For Generator</b>								
Signature  Month <b>6</b> Day <b>9</b> Year <b>08</b>								
TRANSPORTER INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:							
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <b>Jeff Lassotovitch</b> Signature  Month <b>6</b> Day <b>9</b> Year <b>08</b> Transporter 2 Printed/Typed Name Signature Month Day Year							
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: U.S. EPA ID Number 18b. Alternate Facility (or Generator) Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year							
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. 2. 3. 4.							
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name Signature Month Day Year							

# **APPENDIX G**

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## **PROFESSIONAL RESUMES**



**ANALYTICAL ENVIRONMENTAL SERVICES**

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## **DAVID ZWEIG, P.E.**

*Principal Engineer*

David Zweig, a Civil Engineer and graduate from UC Berkley, has 15 years experience in Environmental Impact Reporting, Phase I and Phase II Site Assessments, Water Permitting and Regulatory Compliance, and Project Management. Prior to forming AES, Mr. Zweig was the Sacramento Office Manager for Environmental Science Associates. He led ESA's Engineering group in the areas of environmental analysis; hazardous materials; water project permitting and regulatory compliance; water quality studies, water rights; and public infrastructure project coordination. Mr. Zweig has provided technical oversight and completed numerous Phase I and Phase II hazardous materials investigations for public agencies and private parties throughout California and the U.S.

### **REGISTRATION**

#### **AND LICENSES**

California Professional Engineer  
Washington Professional Engineer  
California Department of Health Services Water Treatment Plant Operator

### **EDUCATION**

University of California, Berkeley  
Bachelor of Science in Civil Engineering Degree

### **REPRESENTATIVE**

#### **PROJECTS**

- **Defense Distribution Region West Sharpe Depot Effluent and Receiving Water Quality Assessment, Lathrop, California.** Under contract to the US Army Corps of Engineers, prepared an ERWQA for the depot's wastewater treatment plant effluent discharge. Effluent is treated at a secondary facility on-site, and discharged into an irrigation ditch that is tributary to French Camp Slough. Water quality concerns associated with the implementation of the Inland Surface Water Plan prompted the Regional Water Quality Control Board to require an ERWQA as a condition in the plant's Waste Discharge Requirements. Based on a limited number of lab tests, a work plan was prepared for the ERWQA to assess the impact of continued effluent discharges on the receiving water and possibly lead to treatment process and/or operational modifications.
- **Sacramento Municipal Utilities District Phase I and II Environmental Assessments.** Performed Phase I and Phase II environmental site assessments on two cogeneration plant sites. The assessments consisted of records searches, interviews with representatives from regulatory agencies, field reconnaissance, sampling of surface soils, laboratory testing, and analysis of data. The assessments resulted in recommendations regarding the need for additional subsurface investigations and the risks associated with disposing of soil from the sites.

- **City of Willits Sanitary Survey, Mendocino County.** Managed the preparation of a watershed sanitary survey for the City Water Department for submission to the Department of Health Services to comply with the California Surface Water Treatment Regulation. In accordance with AWWA guidelines, the survey identifies potential contaminant sources within the watershed, and suggests methods for effectively managing the watershed. Potential contaminant sources within the 3,200-acre watershed include septic systems, mining, and a police shooting range.
- **Carmichael Water District Bajamont Way Phase I Environmental Site Assessment and Disposal Area Preliminary Assessment.** Performed a Phase 1 environmental assessment on the District's Corporation Yard site. The assessment consisted of a records search, interviews with representatives from regulatory agencies, field reconnaissance, sampling of surface soils, laboratory testing, and analysis of data. The assessment resulted in recommendations regarding the need for additional subsurface investigations and the risks associated with disposing of soil from the site. A preliminary assessment of a spoils disposal area at the site was also performed.
- **City of San Leandro Groundwater Monitoring Program.** Developed and implemented a groundwater monitoring program for the City's Dredged Material Management Site, adjacent to San Francisco Bay. The site is used to dewater dredged material from the City's marina prior to land disposal. As a condition of the City's NPDES permit, ESA developed and implemented a groundwater investigation that included the installation and quarterly sampling of six monitoring wells. Four quarterly reports were prepared and submitted to the Regional Water Quality Control Board.
- **Auto Park Treatment Tank Relocation Engineering, Environmental Review, and Land Acquisition.** Relocated Calgon activated carbon adsorption system, consisting of two tanks each with 20,000 pounds of granular activated carbon. Project included installing water and sewer pipelines, booster pump station, and electronic controls, so as to allow continued use of a 1,000+ gpm well. The treatment system had been temporarily sited as an emergency measure to treat PCE contamination discovered in water from an existing well. Community concerns about visual impacts necessitated relocation.
- **Strasbaugh Well Nitrate Treatment Engineering Studies.** Studied the feasibility of providing nitrate removal for a contaminated groundwater source. Proven groundwater supplies were unusable because of nitrate contamination in the area. The contamination was the result of decades of intensive agricultural activity. An ion exchange process designed to remove nitrates from well water, and supporting infrastructure, was evaluated.

- **American I Cogeneration Facility Spill Prevention Control and Countermeasure Plan.** In cooperation with Sage Environmental, prepared a SPCCP for a cogeneration facility in King City. The American I facility uses a gas turbine cogeneration unit to generate electricity and provide steam and hot water to a neighboring food processing plant. Because of the large quantities of fuels and other chemicals stored at the facility, a SPCCP was required by the Regional Water Quality Control Board (RWQCB). In requiring the SPCCP, the RWQCB was implementing the regulations contained in Title 40 of the Code of Federal Regulations, Part 112. The SPCCP consists of an inventory of storage tanks and containment systems at the facility and recommendations to prevent hazardous materials from being released into nearby surface waters.
- **Defense Distribution Region West Sharpe Depot Storm Water Pollution Prevention Plan, Lathrop, California.** Under contract to the US Army Corps of Engineers, prepared a SWPPP for the 300 acre Sharpe Depot. The depot receives, warehouses, and ships out military supplies and equipment. Shipments of bulk chemicals, mechanical parts, weapons, ammunition, and supplies arrive at the depot by air, rail, and truck. Previous spills at the depot have caused groundwater contamination and required remedial actions. To comply with Regional Water Quality Control Board NPDES permit requirements, a SWPPP was prepared that inventoried possible sources of stormwater pollution, and recommended measures to prevent those pollutants from entering storm water.

**PROFESSIONAL  
AFFILIATIONS**

Association of California Water Agencies  
American Water Works Association  
American Society of Civil Engineers  
California Water Reuse Association  
State Water Resources Control Board Inland Surface Water Plan Task Force, 1994-1995  
Sacramento Metropolitan Water Authority Board of Directors, 1995-1996  
Citrus Heights Water District Board of Directors, 1994-1997  
Pismo Beach Public Works Commission, Vice President, 1992-93



**ANALYTICAL ENVIRONMENTAL SERVICES**

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**PETER J. CONNELLY, REA I (#30018)**

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***Environmental Scientist***

Mr. Connelly is an environmental scientist with experience in ecological and human health risk assessment and numerous Phase I Environmental Site Assessments (ESAs). Mr Connelly also has over five years experience in conducting pollution characterization and Phase I ESAs. He has professional level experience in site assessments for the purposes of conducting screening level ecological and human health risk assessments and groundwater quality assessments. Additionally, Pete has experience in preparing Phase I ESAs using the American Society of Testing Materials (ASTM) Standard Practice E1527-00 and ASTM Standard 1527-05. Mr Connelly also has experience in writing sampling and analysis plans (SAPs), storm water pollution prevention plans (SWPPPs), and conducting groundwater and surface water monitoring. As an AES associate, Mr. Connelly has prepared numerous CEQA and NEPA documents, Phase I ESAs, SAPs, and SWPPPs for Tribal and private clients. Mr. Connelly has authored over 25 Phase I ESAs of which a partial list is provided below.

**EDUCATION**

University of California, Davis  
*BACHELOR OF SCIENCE IN ENVIRONMENTAL TOXICOLOGY (2001)*

**PROFESSIONAL  
EXPERIENCE**

**Phase I Environmental Site Assessment Partial List**

- **Overnite Transportation: 10000 Waterman Road Phase I ESA:** The ESA involved an approximate 54.7 acre site located in Elk Grove, California. Deputy Project Manager and primary author.
- **MJL Properties: 3516 Fair Oaks Boulevard Phase I ESA.** This Phase I involved an approximate 0.36 acre parcel with a pre-existing retail commercial building located in Sacramento California. Deputy Project Manager and primary author.
- **Auburn Rancheria Parcels Phase I ESA.** The project consists of the transfer of 2.84 acres in Placer County, California from fee to trust status. The proposed use for the site includes a school and administration office space for the Tribe. Primary author for the ESA in coordination with Tribal members and governmental agencies.
- **Auburn Rancheria Phase I ESA: Sunset Athens Connector Road.** The project consists of a road right-of-way through approximately 21-acres on undeveloped land. The United Auburn Indian Community (UAIC) proposes to construct a public road, "Athens Road," to connect Athens Avenue to Sunset



Boulevard in Placer County, CA. Primary author for the ESA in coordination with Tribal members and governmental agencies.

- **Auburn Rancheria: Phase I ESA 1100-Acre Residential Site.** The project consists of the transfer from fee to trust of 1100 acres located near the town of Sheridan in Placer County, California. Primary author for the ESA in coordination with Tribal members and governmental agencies.
- **Cache Creek Casino/Capay Hills Golf Course Phase I ESA.** The project consists of the expansion of the existing gaming facility and construction of a golf course on the Rumsey Rancheria.
- **Timbisha Shoshone Phase I ESA.** The ESA was a supporting document for the transfer from fee to trust 58.08-acres located in the incorporated City of Hesperia in San Bernardino County, California. Primary author.
- **Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians Phase I ESA.** One parcel of approximately the 98.2 ± acres in size located in Lane County Oregon. Primary author.
- **Ione Band of Miwok Indians 228.04-acres Fee to Trust Project Phase I ESA.** The ESA consisted of twelve parcels located in Amador County, California. Primary author.
- **Scotts Valley, 155 Parr Boulevard Phase I ESA:** The project consists of the transfer from fee to trust two parcels located in unincorporated Contra Costa County, immediately adjacent to the City of Richmond, California. Primary author.
- **Santa Ynez Band of Chumash Indians: Phase I ESA Parker Property.** The ESA involved an area of approximately 748-acres located in Santa Barbara County, California. Deputy project manager and primary author.
- **Santa Ynez Band of Chumash Indians: Phase I ESA Federico's Restaurant.** The ESA involved a 15,000 square foot restaurant located in Santa Barbara County, California. Deputy project manager and primary author.
- **Santa Ynez Band of Chumash Indians: Phase I ESA Royal Scandinavian Inn.** The ESA involved an approximate 79,000 square foot hotel and restaurant located in Santa Barbara County, California. Deputy Project Manager and primary author.
- **Torres Martinez Phase I ESA:** The ESA involved the assessment of an area approximately 20-acres in size to support the construction of a truck stop and gas station located on Tribal land off State Highway 86, approximately 45 miles south of Palm Springs, CA. Primary author.

- **North Fork Rancheria Phase I ESA:** The ESA involved the assessment of the North Fork Rancheria, an area approximately 80-acres in size located approximately 10 miles south of the City of Oakhurst, in an unincorporated area of Madera County, CA. Primary author.
- **North Fork Casino Phase I ESA:** This ESA involved the assessment of 305 acres of agricultural land with associated residence, barns and outbuildings located in Madera County, approximately 25 miles north of the City of Fresno, CA. Primary author.
- **L Street Phase I ESA.** This ESA involved an approximate 0.22 acre parcel with a pre-existing 8,800 square foot commercial building with dental office located in Sacramento, California. Deputy project manager and primary author.
- **2000 O Street Phase I ESA.** This ESA involved three parcels of which one had an approximate 28,500 square foot medical and commercial building located in Sacramento, California. Deputy project manager and primary author.
- **Fearrian Property Phase I ESA.** This ESA involved the assessment of approximately 125 acres of pasture and wooded riparian area located in Humboldt County, California. Pre-existing on the Subject Property was a residence, outbuildings, barn and corral area. Deputy project manager and primary author.
- **Lytton Windsor Property Phase I ESA.** This ESA involved the assessment of approximately 50.46 acres of undeveloped wooded land located on outside the town of Windsor in Sonoma County, California. Deputy project manager and primary author.
- **Sonoma Land Acquisition Phase I ESA.** This ESA involved the assessment of approximately 5.0 acres of vacant agricultural land approximately 3.5 miles south of the City of Santa Rosa, CA. Deputy project manager and primary author.
- **Elden Property Phase I ESA.** The assessment covered approximately 215 acres of vacant land located in Brooks, CA. Deputy project manager and primary author.
- **Sugarloaf Ranch Phase I ESA.** This Phase I covered five legal parcels totaling approximately 836 acres of rural residential, native and non-native grassland, steep oak savannah, and riparian areas adjacent to Cache Creek. The Subject Property is located outside Brooks, CA approximately ten miles west of the City of Woodland, CA.



# **NORTH FORK CASINO SITE**

## SCREENING LEVEL PHASE II ENVIRONMENTAL SITE ASSESSMENT

**NOVEMBER 2008**

**Prepared For:**

North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643



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Attachment 1 .....	Laboratory Report
Attachment 2 .....	Tables of Analytical Results



## 1.0 INTRODUCTION

Analytical Environmental Service (AES) has prepared this Screening Level Phase II Environmental Site Assessment (ESA) for soil sampling on the approximately 305-acre Subject Property located within an unincorporated area of Madera County, north of the City of Madera, California. A small corral and farm equipment staging area on the Subject Property was inspected during the preparation of a Phase I ESA (AES, 2008). Soils in the staging area had stains which could have been from petroleum products or pesticides. A sampling and analysis work plan was prepared in July 2008 and approved by the Bureau of Indian Affairs (BIA) that identified preliminary sampling locations and sampling protocols for this Phase II ESA. Soil samples for this analysis were collected on August 28 and November 3, 2008 and analyzed for the presence of chlorinated pesticides, diesel fuel (TPH-g), gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX). Additionally, several samples collected under pole mounted transformers was analyzed for polycyclic aromatic hydrocarbons (PAHs).

### 1.1 BACKGROUND

The results of a Phase I ESA, prepared by AES in July 2008, identified Recognized Environmental Conditions (RECs) associated with prior land uses on the Subject Property (AES, 2008). Most of the RECs were in connection with wastes oils and hydraulic fluids, household paints, stained soils, the prior location of a single 10,000 gallon above ground storage tank (AST), and several 55-gallon drums that were left onsite. These materials were located in a metal storage building and in a small corral area next to the metal storage building. The 10,000 gallon capacity AST was removed in 2006 by the tenant that was occupying the Subject Property. All of the 55-gallon drums were empty, except one drum contained a mix of rain water and waste oils, a second drum contained used oil filters, while a third contained used automobile parts. Additionally, several five gallon buckets of waste oil and hydraulic fluids were observed within the corral area next to the metal storage building. The waste oils appeared to have been spilling onto surface soils within the corral area. These stained soils were removed by the property owner and limited soil sampling occurred in the affected area. Refer to **Section 2.0** for a description of the limited sampling activities that occurred during the cleanup activities. Other materials found onsite included one gallon containers of household paints, hydraulic fluids, and aerosol cans that were located in the metal storage building. All materials were removed from the Subject Property as documented in the November 2008 Phase I ESA (AES, 2008).

### 1.2 SITE HISTORY

Historical land uses of the Subject Property include cattle ranching and agricultural activities. Indicators of prior land uses include remains of several cattle feeders, watering cistern, barn and corral areas and agricultural equipment that were noted in the 2008 Phase I ESA (AES, 2008). A review of historic aerial photographs as noted in the 2008 Phase I confirms prior ranching and agricultural activities on the Subject Property dating back to at least the early 1950s. As stated previously, during a subsequent site visit for the 2008 Phase I update, soil staining was observed

within a small corral area that appears to have been used as an equipment staging area and potential fueling area. Incidental spillage of diesel fuels, gasoline, and waste oils are assumed to be the source of potential diesel fuel and waste oil detected in soil samples collected from the site. As noted in the 2008 Phase I update fueling appears to have occurred next to the 10,000 gallon AST that was observed in the corral area. The tank was present onsite during the 2005 site visit and is no longer present onsite (AES, 2008). Other contaminants of concern include chlorinated pesticides and limited polychlorinated biphenyls (PCBs).

## 2.0 PRIOR SAMPLING ACTIVITIES

On June 11, 2008, stained soils within the corral area were excavated and subsequently removed from the site. Limited soil samples were taken in the affected areas after the stained soils were removed. The samples were collected at a depth no greater than 3 inches below ground surface (bgs). One sample (Sample 1A) of stained soil was taken to determine if the stains were comprised of waste oil and/or diesel fuel. Results indicate a diesel fuel level of 13,000 parts per million (ppm) and a motor oil level of 25,000 ppm. A second sample (Sample 2A) was collected approximately five feet from where Sample 1A was collected and indicated a high level of diesel fuel as well. Sample 2A had a diesel level of 3,400 ppm and motor oil level of 7,600 ppm (AES, 2008).

The United States Environmental Protection Agency (USEPA) does not have a regulatory threshold for diesel and motor oil in soil. However, the San Francisco Regional Water Quality Control Board (SFRWQCB) has published screening levels that can be used to compare site specific soil analytical results (Table 1). Regulatory thresholds that are used in this Phase II ESA for diesel fuel in residential soils are based on the SFRWQCB Environmental Screening Levels (ESLs) for shallow soil less than 3 meters bgs ( $\leq 3$  meter bgs) where groundwater is a potential source of drinking water. The ESLs are considered to be conservative. Under most circumstances, the presence of a chemical in soil, soil gas or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment. In addition to ESLs, the USEPA issues regulatory thresholds for contaminants in soil. Soil analytical results for this ESA were compared to both the USEPA Screening Level Preliminary Remediation Goal (PRGs) and the SFRWQCB ESLs (Table 1) for residential soils. Levels of gasoline, gasoline constituents, chlorinated pesticides, and limited sampling for polychlorinated biphenyls (PCBs) will be compared to both USEPA PRGs and the ESLs. The SFRWQCB ESL for diesel fuel and gasoline are 83 ppm [(83,000 parts per billion (ppb))]. The USEPA PRG for gasoline is 39 ppm (39,000 ppb). Additional evaluation is generally necessary at sites where a chemical is present at concentrations above the corresponding RWQCB ESLs and the USEPA PRGs. Active remediation may or may not be required depending on site specific conditions and considerations.



**TABLE 1**  
**Summary of Sampling Constituents**

Constituent	EPA Analytical Method	Laboratory Method Detection Limit (MDL) ug/kg <sup>1</sup>	Residential RWQCB ESLs <sup>2</sup> ug/kg	United States EPA Residential PRGs <sup>3</sup> ug/kg
<b>Chlorinated Pesticides</b>				
Aldrin	8081A	10.0	32	29*
alpha-BHC	8081A	10.0	9.8	70*
beta-BHC (Cyclohexane)	8081A	10.0	NA	21,000
Chlordane	8081A	100.0	440	1,600*
4,4-DDD <sup>4</sup>	8081A	50.0	2400	2000
4,4'-DDE <sup>5</sup>	8081A	10.0	1700	1400
4,4'-DDT <sup>6</sup>	8081A	50.0	1700	1700
delta-BHC	8081A	10.0	NA	7,300
Dieldrin	8081A	10.0	2.3	30*
Endosulfan I	8081A	50.0	4.6	370,000
Endosulfan II	8081A	50.0	NA	NA
Endosulfan Sulfate	8081A	100.00	NA	NA
Endrin	8081A	10.0	0.65	18,000
Endrin Aldehyde	8081A	50.0	NA	NA
g-BHC (Lindane)	8081A	10.0	9.8	270*
Heptachlor	8081A	10.0	13	110*
Heptachlor Epoxide	8081A	10.0	14	53*
Methoxychlor	8081A	100.0	19,000	310,000
Toxaphene	8081A	100.0	0.42	440*
<b>Petroleum Hydrocarbons</b>				
Diesel Fuel	8015B	1000	83000	NA
Gasoline	8015B	1000	83000	39000
Motor Oil	8015B	10,000	NA	NA
<b>BTEX</b>				
Benzene	8015/8021B	5.0	NA	1,110*
Ethylbenzene	8015/8021B	5.0	NA	5,700
MTBE	8015/8021B	10.0	NA	39,000
Toluene	8015/8021B	5.0	2900 mg/kg	5000 mg/kg
Xylenes	8015/8021B	5.0	2300 mg/kg	600 mg/kg
<b>Polychlorinated Biphenyls (PCBs)</b>				
Aroclor-1016	8082	10.0	220	3900
Aroclor-1221	8082	10.0	220	170
Aroclor-1232	8082	10.0	220	170
Aroclor-1242	8082	10.0	220	220
Aroclor-1248	8082	10.0	220	220
Aroclor-1254	8082	10.0	220	220
Aroclor-1260	8082	10.0	220	220

**Notes:**<sup>1</sup> Microgram per kilogram (parts per billion)<sup>2</sup> ESL are shallow soil screening levels for soil less than 3 meters below ground surface (bgs) considering a residential land use where groundwater is a current or potential drinking water source.<sup>3</sup> United States Environmental Protection Agency Preliminary Remediation Goal; Soil Screening Levels.<sup>4</sup> Dichlorodiphenyldichloroethylene<sup>5</sup> Dichlorodiphenyltrichloroethane<sup>6</sup> Dichlorodiphenyldichloroethane

\* California Environmental Protection Agency Modified Screening Level

The Subject Property is being considered for development; therefore exceedances of the regulatory screening levels from the initial June 11, 2008 sampling are considered a potential threat to human health or the environment and additional site characterization was necessary to determine the level of potential risk. Based on the initial June 11, 2008 sampling results showing exceedances of diesel fuel ESLs, additional soil sampling was recommended. Soil sampling locations for this assessment are illustrated **Exhibits A and B**.

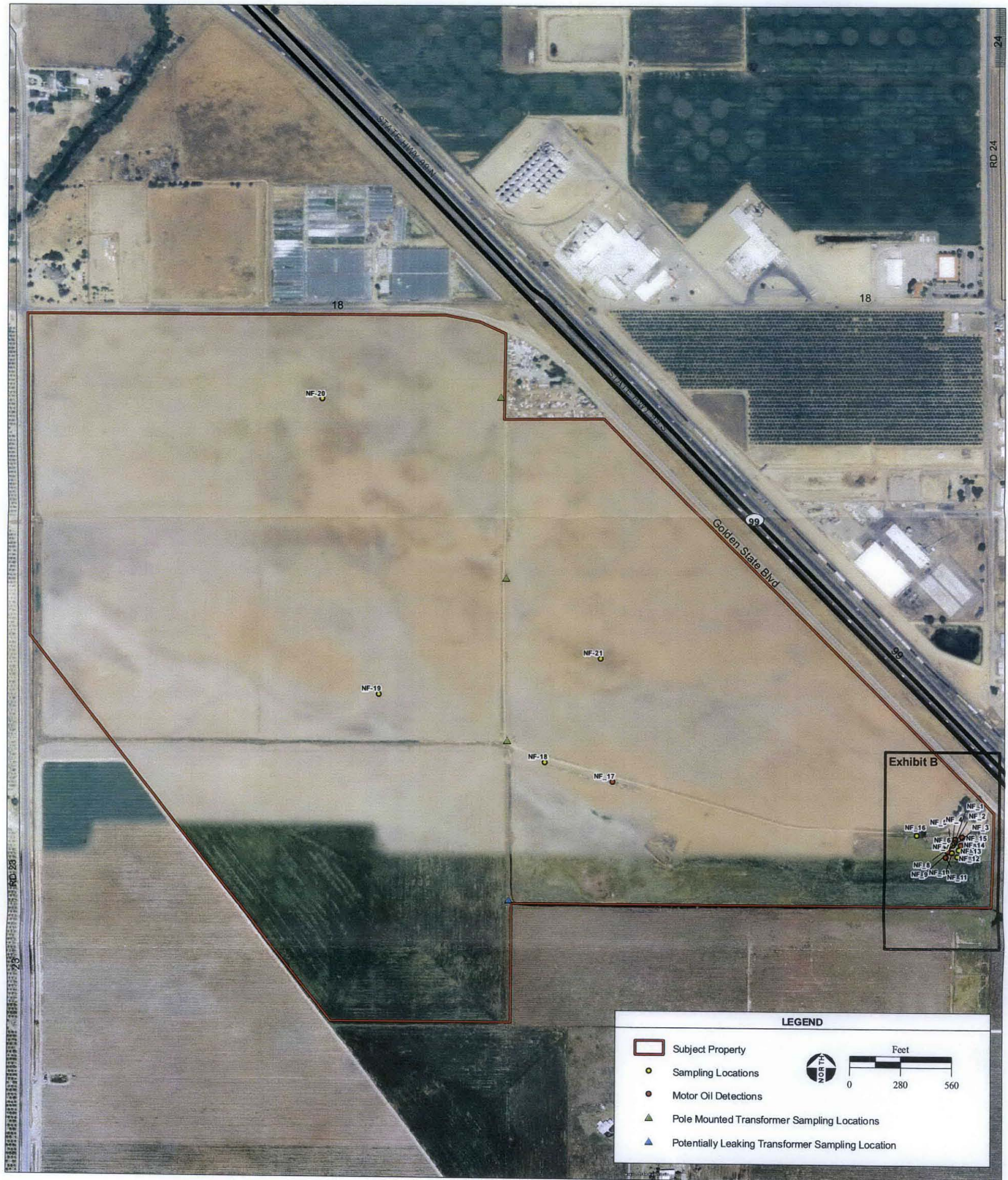
There are no ESLs or PRGs for motor oil. **Table 1** lists the applicable residential ESLs based on shallow soil less than ten feet below ground surface (bgs) ( $\leq 3$  meter bgs) where groundwater is a potential source of drinking water. In addition to the RWQCB ESLs, the USEPA PRGs for residential soils are also listed in **Table 1**. The PRGs are similar to the ESLs as a screening tool and are not intended to be used as a determining tool for risk assessment (**Table 1**).

### 3.0 SOIL SAMPLING ACTIVITIES

Based on the exceedances of the ESLs as noted above, additional soil sampling was warranted. In addition to diesel (TPH-g) and gasoline (TPH-g), soil samples for this assessment were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), chlorinated pesticides, and PAHs. The corral area next to the metal storage building was determined to have the greater risk for hazardous materials contamination. Thus, primary sampling locations for this assessment were located within the small corral area next to the metal storage building. Secondary samples were collected outside of the small corral area as shown on **Exhibits A and B**. Sampling occurred on August 26, 2008. Sampling locations were marked in the field with a Global Positioning Satellite (GPS) unit with the exception of three of the pole mounted transformer samples. Two samples were collected at each location shown on **Exhibits A and B**. One surface soil sample was collected at a depth not greater than 3 inches bgs and a second sample was collected at a depth between 12 inches and 18 inches bgs. The samples were submitted to the lab and used to prepare composite samples, consisting of a mix of equal parts of soil collected from 3 inches bgs and soil collected from 12 to 18 inches bgs. The sample numbers listed in the lab report (**Attachment 1**) correspond to composite samples. The diesel (TPH-g) and gasoline (TPH-g), and BTEX, composite sample number corresponds to one sampling location. For the chlorinated pesticides, the single composite sample number corresponds to two sampling locations. Sample results are listed in tabular form included as **Attachment 1**.

A sampling crew returned on November 3, 2008 to collect soil samples under several pole mounted transformers. One of the transformers appeared to have leaked. The pole mounted transformer sampling locations are shown on **Exhibit A**. Surface soil samples were collected at a depth not greater than 3 inches bgs under the non-leaking transformers. Two sampling locations were chosen under the transformer that appeared to have leaked. The first sample location was directly under the transformer while a second location was approximately three feet from the first











location. In addition to surface samples, below surface samples were also collected under the transformer that appeared to have leaked at a depth of approximately 12 inches bgs. The locations were flagged in case PCBs were detected and soil removal necessary.

### 3.1 Sample Results

There were no detections of PCBs, diesel (TPH-g), gasoline (TPH-g), BTEX, PAHs, or chlorinated pesticides in any of the soil samples collected at the site. Seven detections of motor oils were present in soil samples collected within the corral area. In addition to these samples, one composite sample collected outside of the corral area contained a low level of motor oil (Sample location NF17). Composite sample number NF1, NF2, NF8, NF9, NF10, NF14, NF15, and NF17 contained motor oil levels ranging from 32.1 parts per million (ppm) to 583 ppm. The locations of these samples are identified on **Exhibits A and B**. The lab retained the original samples for more focused analysis as necessary. For example, if the composite samples exceeded the ESL or PRG, then the individual sample collected at a depth of 12 to 18 inches bgs would be re-analyzed to determine if affected soils were limited to surface, or whether affected soils were deeper than 3 inches bgs (ie 12 to 18 inches bgs). The analytical results show non detectable levels for all constituents with the exception of motor oil as discussed below.

Eight samples detecting waste oil were re-evaluated at the lab to determine whether affected soils are concentrated on the surface or a sub-surface contamination source is present. As shown in the data table (**Attachment 2**), eight soil samples collected on the Subject Property contained detectable levels of motor oil. Of the eight samples that were reanalyzed by the lab, five samples had non detectable amounts of motor oils at depths ranging from 12 to 18 inches bgs. The reanalysis data for these sampling locations indicates motor oil detections are limited to surface soils only. Samples numbers that were re-analyzed included NF1, NF2, and NF17; these below surface samples contained motor oil at concentrations of 46.7, 125, and 29.7 mg/kg, respectively (**Exhibits B and C**) in the depths ranging from 12 to 18 inches bgs. The composite sample collected on August 26, 2008 at sampling locations NF1, NF2, and NF17 contained motor oil at a concentration of 366, 131, and 48.8 mg/kg respectively. The data indicates higher motor oil concentration at the surface, and a decrease in concentration as the sample depth decreases. The lab report is included as **Attachment 1**. A pattern of higher concentration of motor oil at the surface indicates that the source of the lower concentration of below surface motor oil is surface staining. The source of motor oil detections indicates that vehicle maintenance in the corral area has affected surface soils; and to a limited extent, soils just below the ground surface. There are no physical indications that large amounts motor oil were spilled in the corral areas given the lack of strong odors and large areas of surface discoloration. The presence of low levels of motor oil in surface soils does not pose a human health risk.





SOURCE: Aerial Photograph, 2008; AES, 2008

North Fork Casino Site Screening Level Phase II ESA / 204502 ■

**Exhibit C**  
 Corral Area Below Surface Motor Oil Detections



### 3.2 CONCLUSIONS AND RECOMMENDATIONS

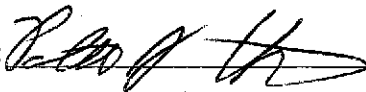
No evidence of widespread soil contamination was found on the property. Chlorinated pesticides were not detected in any samples collected onsite. Motor oil was detected in eight samples at low concentrations and in a very limited area of shallow soils. With the absence of other indicators of soil contamination such as diesel fuels, gasoline, and gasoline constituents (BTEX), the presence of the waste oils in the concentrations and extent detected do not pose a threat to human health or the environment. Given the sporadic detections and a lack of motor oils at the deeper subsurface areas, it appears the source of motor oil is from incidental spilling during routine agricultural activities. Given the relatively limited detections as well as a lack of onsite indicators, additional sampling is not warranted at this time. Through natural attenuation, the low levels of motor oils are expected to dissipate over time.

Based on conversations with the Central Valley RWQCB (RWQCB, 2008) and Madera County Environmental Health (Madera County, 2008), unless the motor oils are the result of a leaking underground storage tank (UST) and the presence of gasoline and gasoline constituents poses a threat to the beneficial uses of groundwater, there are no regulatory thresholds that can be used to compare analytical results. The surface staining should be removed based on visual detection; through excavation and proper disposal of the stained soils. Confirmation soil sampling should be conducted at the three locations where below surface motor oils were present. These areas should be excavated to approximately two feet bgs. The field activities should be summarized in a report to the BIA.

## 4.0 REPORT AUTHORS

Pete Connelly, Registered Environmental Assessor (REA), prepared this report, and has the specific qualifications based on education, training, and experience to assess a property of the nature, and setting of the Subject Property. He prepared this report under the professional supervision of David Zweig, P.E. who is a Registered Professional Engineer licensed in the State of California. Pete Connelly and David Zweigs' signatures appear below.

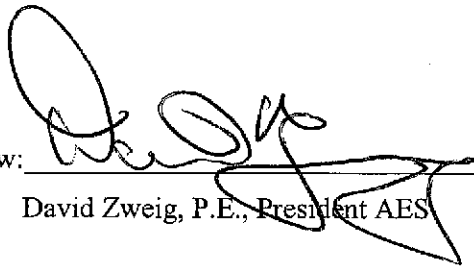
Author:



Peter J Connelly, REA Associate



Review:



David Zweig, P.E., President AES



## 5.0 REFERENCES

AES, 2008. Analytical Environmental Services 2008. Phase I Environmental Site Assessment North Fork Casino Site. November 2008.

CVRWQCB, 2008. Central Valley Regional Water Quality Control Board Telephone Conversation with John Whiting. Telephone number (559) 445-5116.

Madera County Department of Environmental Health. Telephone conversation with Lance Leitch. Telephone number (559) 675-7823.

SFRWQCB, 2007. San Francisco Regional Water Quality Control Board Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Prepared by the California Regional Water Quality Control Board. Table A. Environmental Screening Levels (ESLs) for shallow soil ( $\leq 3$  meter bgs) where Groundwater is a Potential Source of Drinking Water less than ten feet below ground surface .

United States Environmental Protection Agency Region 9 Preliminary Remediation Goals (USEPA PRGs) for Residential soils. Regional Screening Levels for Chemical Contaminants at Superfund Sites, July 2008.

# ATTACHMENTS

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# **ATTACHMENT 1**

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## LABORATORY REPORT



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project:

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF21-S, NF21-BS	0:00	U8H2610-64	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
124

% Recovery QC Limit %  
124 % 68.2-140

Surrogate Notes

NF1-S, NF1-BS, NF2-S, NF2-BS	0:00	U8H2610-65	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
84.8

% Recovery QC Limit %  
84.8 % 68.2-140

Surrogate Notes



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Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF3-S, NF3-BS, NF4-S, NF4-BS	0:00	U8H2610-66	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
140

% Recovery QC Limit %  
140 % 68.2-140

Surrogate Notes

NF5-S, NF5-BS, NF6-S, NF6-BS	0:00	U8H2610-67	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
140

% Recovery QC Limit %  
140 % 68.2-140

Surrogate Notes

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Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF7-S, NF7-BS, NF8-S, NF8-BS	0:00	U8H2610-68	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
139

% Recovery  
139 %

QC Limit %  
68.2-140

Surrogate Notes

NF9-S, NF9-BS, NF10-S, NF10-BS	0:00	U8H2610-69	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
111

% Recovery  
111 %

QC Limit %  
68.2-140

Surrogate Notes

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF11-S, NF11-BS, NF12-S, NF12-BS	0:00	U8H2610-70	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
135

% Recovery QC Limit %  
135 % 68.2-140

Surrogate Notes

NF13-S, NF13-BS, NF14-S, NF14-BS	0:00	U8H2610-71	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate  
DBC

Amnt Spiked  
100.0

Amnt Recovered  
121

% Recovery QC Limit %  
121 % 68.2-140

Surrogate Notes

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF15-S, NF15-BS, NF16-S, NF16-BS	0:00	U8H2610-72	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes	Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes
	DBC	100.0	70.1	70.1 %	68.2-140	

NF17-S, NF17-BS, NF18-S, NF18-BS	0:00	U8H2610-73	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes	Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes
	DBC	100.0	109	109 %	68.2-140	

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project:

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF19-S, NF19-BS, NF20-S, NF20-BS	0:00	U8H2610-74	10	8081	Aldrin	ND	ug/kg		8/27/08	U002610
			10		alpha-BHC	ND				
			10		beta-BHC	ND				
			100		Chlordane	ND				
			50		DDD	ND				
			10		DDE	ND				
			50		DDT	ND				
			10		delta-BHC	ND				
			10		Dieldrin	ND				
			50		Endosulfan I	ND				
			50		Endosulfan II	ND				
			100		Endosulfan sulfate	ND				
			10		Endrin	ND				
			50		Endrin aldehyde	ND				
			10		gamma-BHC (Lindane)	ND				
			10		Heptachlor	ND				
			10		Heptachlor epoxide	ND				
			100		Methoxychlor	ND				
			100		Toxaphene	ND				

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery QC Limit %

Surrogate Notes

DBC

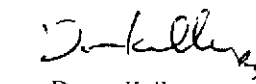
100.0

132

132 %

68.2-140

  
Matt Page  
Chemist

  
Donna Keller  
Laboratory Director

Certification # 2585



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #			
NF1-S, NF1-BS	0:00	U8H2610-44	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557			
			5.0		Ethylbenzene	ND							
			10.0		Methyl tert-Butyl Ether (MTBE)	ND							
			5.0		Toluene	ND							
			5.0		Xylenes, total	ND							
			1.0	GC/MS	Gasoline	ND	mg/kg						
Sample Notes			Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes					
									1,2-Dichloroethane-d4	20.00	21.9	109 %	72-132
									2-Bromo-1-Chloropropane	20.00	20.9	105 %	71-134
									4-Bromofluorobenzene	20.00	19.0	95 %	74-132
NF2-S, NF2-BS	0:00	U8H2610-45	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557			
			5.0		Ethylbenzene	ND							
			10.0		Methyl tert-Butyl Ether (MTBE)	ND							
			5.0		Toluene	ND							
			5.0		Xylenes, total	ND							
			1.0	GC/MS	Gasoline	ND	mg/kg						
Sample Notes			Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes					
									1,2-Dichloroethane-d4	20.00	25.6	128 %	72-132
									2-Bromo-1-Chloropropane	20.00	22.6	113 %	71-134
									4-Bromofluorobenzene	20.00	18.0	90 %	74-132
NF3-S, NF3-BS	0:00	U8H2610-46	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557			
			5.0		Ethylbenzene	ND							
			10.0		Methyl tert-Butyl Ether (MTBE)	ND							
			5.0		Toluene	ND							
			5.0		Xylenes, total	ND							
			1.0	GC/MS	Gasoline	ND	mg/kg						
Sample Notes			Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes					
									1,2-Dichloroethane-d4	20.00	25.0	125 %	72-132
									2-Bromo-1-Chloropropane	20.00	22.5	112 %	71-134
									4-Bromofluorobenzene	20.00	18.3	91 %	74-132
NF4-S, NF4-BS	0:00	U8H2610-47	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557			
			5.0		Ethylbenzene	ND							
			10.0		Methyl tert-Butyl Ether (MTBE)	ND							
			5.0		Toluene	ND							
			5.0		Xylenes, total	ND							
			1.0	GC/MS	Gasoline	ND	mg/kg						
Sample Notes			Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes					
									1,2-Dichloroethane-d4	20.00	24.7	124 %	72-132
									2-Bromo-1-Chloropropane	20.00	20.9	104 %	71-134
									4-Bromofluorobenzene	20.00	18.1	90 %	74-132

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF5-S, NF5-BS	0:00	U8H2610-48	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

23.3

116 %

72-132

2-Bromo-1-Chloropropane

20.00

22.0

110 %

71-134

4-Bromofluorobenzene

20.00

17.3

87 %

74-132

NF6-S, NF6-BS	0:00	U8H2610-49	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

22.4

112 %

72-132

2-Bromo-1-Chloropropane

20.00

21.9

109 %

71-134

4-Bromofluorobenzene

20.00

18.4

92 %

74-132

NF7-S, NF7-BS	0:00	U8H2610-50	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002557
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

24.9

124 %

72-132

2-Bromo-1-Chloropropane

20.00

20.9

105 %

71-134

4-Bromofluorobenzene

20.00

17.0

85 %

74-132

NF8-S, NF8-BS	0:00	U8H2610-51	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

23.1

116 %

72-132

2-Bromo-1-Chloropropane

20.00

21.0

105 %

71-134

4-Bromofluorobenzene

20.00

19.2

96 %

74-132

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF9-S, NF9-BS	0:00	U8H2610-52	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes	Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes
	1,2-Dichloroethane-d4	20.00	22.4	112 %	72-132	
	2-Bromo-1-Chloropropane	20.00	19.9	100 %	71-134	
	4-Bromofluorobenzene	20.00	17.4	87 %	74-132	

NF10-S, NF10-BS	0:00	U8H2610-53	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes	Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes
	1,2-Dichloroethane-d4	20.00	23.6	118 %	72-132	
	2-Bromo-1-Chloropropane	20.00	21.1	106 %	71-134	
	4-Bromofluorobenzene	20.00	18.6	93 %	74-132	

NF11-S, NF11-BS	0:00	U8H2610-54	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes	Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes
	1,2-Dichloroethane-d4	20.00	18.9	94 %	72-132	
	2-Bromo-1-Chloropropane	20.00	21.8	109 %	71-134	
	4-Bromofluorobenzene	20.00	18.4	92 %	74-132	

NF12-S, NF12-BS	0:00	U8H2610-55	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0		Gasoline	ND	mg/kg			

Sample Notes	Surrogate	Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes
	1,2-Dichloroethane-d4	20.00	29.5	148 %	72-132	S-GC
	2-Bromo-1-Chloropropane	20.00	22.8	114 %	71-134	
	4-Bromofluorobenzene	20.00	18.5	92 %	74-132	

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF13-S, NF13-BS	0:00	U8H2610-56	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

25.4

127 %

72-132

2-Bromo-1-Chloropropane

20.00

20.7

103 %

71-134

4-Bromofluorobenzene

20.00

19.5

98 %

74-132

NF14-S, NF14-BS	0:00	U8H2610-57	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

29.9

150 %

72-132

2-Bromo-1-Chloropropane

20.00

23.6

118 %

71-134

4-Bromofluorobenzene

20.00

18.8

94 %

74-132

NF15-S, NF15-BS	0:00	U8H2610-58	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

30.8

154 %

72-132

2-Bromo-1-Chloropropane

20.00

26.0

130 %

71-134

4-Bromofluorobenzene

20.00

17.7

89 %

74-132

NF16-S, NF16-BS	0:00	U8H2610-59	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

20.6

103 %

72-132

2-Bromo-1-Chloropropane

20.00

21.0

105 %

71-134

4-Bromofluorobenzene

20.00

18.7

94 %

74-132

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF17-S, NF17-BS	0:00	U8H2610-60	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

20.3

101 %

72-132

2-Bromo-1-Chloropropane

20.00

21.3

106 %

71-134

4-Bromofluorobenzene

20.00

18.2

91 %

74-132

NF18-S, NF18-BS	0:00	U8H2610-61	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

27.4

137 %

72-132

2-Bromo-1-Chloropropane

20.00

21.9

110 %

71-134

4-Bromofluorobenzene

20.00

18.9

94 %

74-132

NF19-S, NF19-BS	0:00	U8H2610-62	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

29.1

145 %

72-132

2-Bromo-1-Chloropropane

20.00

22.5

113 %

71-134

4-Bromofluorobenzene

20.00

18.0

90 %

74-132

NF20-S, NF21-BS	0:00	U8H2610-63	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			

Sample Notes

Surrogate

Amnt Spiked

Amnt Recovered

% Recovery

QC Limit %

Surrogate Notes

1,2-Dichloroethane-d4

20.00

29.1

146 %

72-132

2-Bromo-1-Chloropropane

20.00

23.9

120 %

71-134

4-Bromofluorobenzene

20.00

17.4

87 %

74-132

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

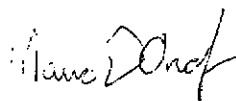
Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

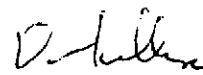
Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF21-S, NF21-BS	0:00	U8H2610-64	5.0	8260B	Benzene	ND	ug/kg		8/27/08	U002608
			5.0		Ethylbenzene	ND				
			10.0		Methyl tert-Butyl Ether (MTBE)	ND				
			5.0		Toluene	ND				
			5.0		Xylenes, total	ND				
			1.0	GC/MS	Gasoline	ND	mg/kg			
Sample Notes		Surrogate		Amnt Spiked	Amnt Recovered	% Recovery	QC Limit %	Surrogate Notes		
		1,2-Dichloroethane-d4		20.00	32.5	163 %	72-132	S-GC		
		2-Bromo-1-Chloropropane		20.00	25.4	127 %	71-134			
		4-Bromofluorobenzene		20.00	17.9	90 %	74-132			



Mario D'Onofrio  
Chemist



Donna Keller  
Laboratory Director



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/04/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF1-S, NF1-BS	0:00	U8H2610-44	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND 366	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 3.54	% Recovery 265 %	QC Limit % 70-130		Surrogate Notes S-03
NF2-S, NF2-BS	0:00	U8H2610-45	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND 131	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 2.15	% Recovery 161 %	QC Limit % 70-130		Surrogate Notes S-03
NF3-S, NF3-BS	0:00	U8H2610-46	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.25	% Recovery 94 %	QC Limit % 70-130		Surrogate Notes
NF4-S, NF4-BS	0:00	U8H2610-47	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.48	% Recovery 111 %	QC Limit % 70-130		Surrogate Notes
NF5-S, NF5-BS	0:00	U8H2610-48	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.25	% Recovery 94 %	QC Limit % 70-130		Surrogate Notes
NF6-S, NF6-BS	0:00	U8H2610-49	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.13	% Recovery 85 %	QC Limit % 70-130		Surrogate Notes
NF7-S, NF7-BS	0:00	U8H2610-50	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.10	% Recovery 83 %	QC Limit % 70-130		Surrogate Notes

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project:

Date: 09/04/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF8-S, NF8-BS	0:00	U8H2610-51	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND 43.4	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.17	% Recovery 88 %	QC Limit % 70-130		Surrogate Notes	
NF9-S, NF9-BS	0:00	U8H2610-52	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND 32.2	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.11	% Recovery 83 %	QC Limit % 70-130		Surrogate Notes	
NF10-S, NF10-BS	0:00	U8H2610-53	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND 32.1	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 0.924	% Recovery 69 %	QC Limit % 70-130		Surrogate Notes	
NF11-S, NF11-BS	0:00	U8H2610-54	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.06	% Recovery 80 %	QC Limit % 70-130		Surrogate Notes	
NF12-S, NF12-BS	0:00	U8H2610-55	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.08	% Recovery 81 %	QC Limit % 70-130		Surrogate Notes	
NF13-S, NF13-BS	0:00	U8H2610-56	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND ND	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.03	% Recovery 77 %	QC Limit % 70-130		Surrogate Notes	
NF14-S, NF14-BS	0:00	U8H2610-57	1.0 1.0 10.0	8015B	DROs (Diesel Range Organics) KROs (Kerosene Range Organics) MORO (Motor Oil Range Organics)	ND ND 35.5	mg/kg		8/27/08	U002604
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.00	% Recovery 75 %	QC Limit % 70-130		Surrogate Notes	

Certification # 2585

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/04/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler:

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF15-S, NF15-BS	0:00	U8H2610-58	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002604
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	583				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.73	% Recovery 130 %	QC Limit % 70-130	Surrogate Notes		
NF16-S, NF16-BS	0:00	U8H2610-59	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002605
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 0.876	% Recovery 66 %	QC Limit % 70-130	Surrogate Notes		
NF17-S, NF17-BS	0:00	U8H2610-60	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002605
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	48.8				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.65	% Recovery 124 %	QC Limit % 70-130	Surrogate Notes		
NF18-S, NF18-BS	0:00	U8H2610-61	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002605
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.15	% Recovery 86 %	QC Limit % 70-130	Surrogate Notes		
NF19-S, NF19-BS	0:00	U8H2610-62	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002605
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 0.994	% Recovery 75 %	QC Limit % 70-130	Surrogate Notes		
NF20-S, NF21-BS	0:00	U8H2610-63	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002605
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.04	% Recovery 78 %	QC Limit % 70-130	Surrogate Notes		
NF21-S, NF21-BS	0:00	U8H2610-64	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		8/27/08	U002605
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.11	% Recovery 83 %	QC Limit % 70-130	Surrogate Notes		

Mario D'Onofrio  
Chemist

Donna Keller  
Laboratory Director

Certification # 2585

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Certification # 2585 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Analytical Environmental Services

1801 7th Street, Suite 100

Sacramento, CA 95811

Project: .

PO#:

Date: 09/08/08

Date Rec'd: 08/26/08

## CERTIFICATE OF ANALYSIS

Sample ID: NF-PL

Lab ID: U8H2610-43

Sample Notes:

Date Sampled: 08/26/08

Time: 12:55

Sampler: Pete Connelly

Method	RL	Analyte	Result	Units	Notes	Started	Batch #
8082	10.0	Aroclor-1016	ND	ug/kg		8/28/08	U002616
	10.0	Aroclor-1221	ND	ug/kg			
	10.0	Aroclor-1232	ND	ug/kg			
	10.0	Aroclor-1242	ND	ug/kg			
	10.0	Aroclor-1248	ND	ug/kg			
	10.0	Aroclor-1254	ND	ug/kg			
	10.0	Aroclor-1260	ND	ug/kg			



Matt Page  
Chemist



Donna Keller  
Laboratory Director

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U002610 - 3550B (Sonication)

Prepared: 08/27/08 Analyzed: 09/03/08

### Blank (U002610-BLK1)

alpha-BHC	ND	10	ug/kg							
gamma-BHC (Lindane)	ND	10	"							
Heptachlor	ND	10	"							
beta-BHC	ND	10	"							
delta-BHC	ND	10	"							
Aldrin	ND	10	"							
Heptachlor epoxide	ND	10	"							
Endosulfan I	ND	50	"							
DDE	ND	10	"							
Dieldrin	ND	10	"							
Endrin	ND	10	"							
DDD	ND	50	"							
Endosulfan II	ND	50	"							
DDT	ND	50	"							
Endrin aldehyde	ND	50	"							
Endosulfan sulfate	ND	100	"							
Methoxychlor	ND	100	"							
Toxaphene	ND	100	"							
Chlordane	ND	100	"							
Surrogate: DBC	139		"	100.0		139	68.2-140			

### LCS (U002610-BS1)

Aldrin	54	10	ug/kg	50.00		107	70-130			
Dieldrin	40	10	"	50.00		79.2	70-130			
Endrin	61	10	"	50.00		123	70-130			
DDT	110	50	"	100.0		109	70-130			
Surrogate: DBC	128		"	100.0		128	68.2-140			

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch U002610 - 3550B (Sonication)

Prepared: 08/27/08 Analyzed: 09/03/08

### LCS Dup (U002610-BSD1)

Aldrin	52	10	ug/kg	50.00		103	70-130	4.15	20	
Dieldrin	39	10	"	50.00		77.1	70-130	2.66	20	
Endrin	59	10	"	50.00		119	70-130	3.16	20	
DIT	110	50	"	100.0		108	70-130	0.764	20	
Surrogate: DBC	123		"	100.0		123	68.2-140			



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services  
1801 7th Street, Suite 100  
Sacramento, CA 95811

PO#

Date Rec'd: 08/26/08

## Volatile Organic Chemistry - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U002557 - EPA 5030

Prepared: 08/22/08 Analyzed: 08/26/08

### Blank (U002557-BLK1)

Benzene	ND	5.0	ug/kg							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
Xylenes, total	ND	5.0	"							
Methyl tert-Butyl Ether (MTBE)	ND	10.0	"							
Gasoline	ND	1.0	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	20.7		ug/kg	20.00		104	72-132			
Surrogate: 2-Bromo-1-Chloropropane	18.7		"	20.00		94	71-134			
Surrogate: 4-Bromofluorobenzene	19.8		"	20.00		99	74-132			

### LCS (U002557-BS1)

Benzene	61.9	5.0	ug/kg	60.00		103	80-120			
Toluene	61.4	5.0	"	60.00		102	80-120			
Ethylbenzene	59.7	5.0	"	60.00		99	80-120			
Methyl tert-Butyl Ether (MTBE)	61.9	10.0	"	60.00		103	80-120			
Gasoline	1.6	1.0	mg/kg	1.500		107	80-120			
Surrogate: 1,2-Dichloroethane-d4	22.1		ug/kg	20.00		110	72-132			
Surrogate: 2-Bromo-1-Chloropropane	21.8		"	20.00		109	71-134			
Surrogate: 4-Bromofluorobenzene	20.9		"	20.00		104	74-132			

### Matrix Spike (U002557-MS1)

Source: U8H2207-01

Benzene	62.8	5.0	ug/kg	60.00	ND	105	53-101			
Toluene	64.8	5.0	"	60.00	ND	108	48-109			
Ethylbenzene	65.7	5.0	"	60.00	ND	110	45-107			
Methyl tert-Butyl Ether (MTBE)	64.7	10.0	"	60.00	ND	108	70-130			
Gasoline	1.3	1.0	mg/kg	1.500	ND	89	63-143			
Surrogate: 1,2-Dichloroethane-d4	20.0		ug/kg	20.00		100	72-132			
Surrogate: 2-Bromo-1-Chloropropane	19.1		"	20.00		96	71-134			
Surrogate: 4-Bromofluorobenzene	20.1		"	20.00		101	74-132			

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project:

Date: 08/29/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Volatile Organic Chemistry - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U002557 - EPA 5030

Prepared: 08/22/08 Analyzed: 08/26/08

### Matrix Spike Dup (U002557-MSD1)

Source: U8H2207-01

Benzene	63.2	5.0	ug/kg	60.00	ND	105	53-101	0.7	20	
Toluene	66.5	5.0	"	60.00	ND	111	48-109	3	24	
Ethylbenzene	64.8	5.0	"	60.00	ND	108	45-107	1	33	
Methyl tert-Butyl Ether (MTBE)	74.4	10.0	"	60.00	ND	124	70-130	14	30	
Gasoline	1.4	1.0	mg/kg	1.500	ND	94	63-143	5	34	
Surrogate: 1,2-Dichloroethane-d4	22.5		ug/kg	20.00		112	72-132			
Surrogate: 2-Bromo-1-Chloropropane	18.9		"	20.00		95	71-134			
Surrogate: 4-Bromofluorobenzene	20.2		"	20.00		101	74-132			

Batch U002608 - EPA 5030

Prepared & Analyzed: 08/27/08

### Blank (U002608-BLK1)

Benzene	ND	5.0	ug/kg							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
Xylenes, total	ND	5.0	"							
Methyl tert-Butyl Ether (MTBE)	ND	10.0	"							
Gasoline	ND	1.0	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	25.4		ug/kg	20.00		127	72-132			
Surrogate: 2-Bromo-1-Chloropropane	20.8		"	20.00		104	71-134			
Surrogate: 4-Bromofluorobenzene	19.0		"	20.00		95	74-132			

### LCS (U002608-BS1)

Benzene	68.8	5.0	ug/kg	60.00		115	80-120			
Toluene	69.6	5.0	"	60.00		116	80-120			
Ethylbenzene	69.2	5.0	"	60.00		115	80-120			
Methyl tert-Butyl Ether (MTBE)	74.6	10.0	"	60.00		124	80-120			
Gasoline	1.7	1.0	mg/kg	1.500		113	80-120			
Surrogate: 1,2-Dichloroethane-d4	22.8		ug/kg	20.00		114	72-132			
Surrogate: 2-Bromo-1-Chloropropane	22.5		"	20.00		112	71-134			
Surrogate: 4-Bromofluorobenzene	19.6		"	20.00		98	74-132			

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 08/29/08

Analytical Environmental Services

1801 7th Street, Suite 100

Sacramento, CA 95811

PO#

Date Rec'd: 08/26/08

## Volatile Organic Chemistry - Quality Control

GeoAnalytical Laboratories, Inc.

Analytic	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U002608 - EPA 5030

Prepared & Analyzed: 08/27/08

### Matrix Spike (U002608-MS1)

Source: U8H2610-51

Benzene	59.6	5.0	ug/kg	60.00	ND	99	53-101			
Toluene	55.3	5.0	"	60.00	ND	92	48-109			
Ethylbenzene	51.7	5.0	"	60.00	ND	86	45-107			
Methyl tert-Butyl Ether (MTBE)	62.1	10.0	"	60.00	ND	104	70-130			
Gasoline	1.6	1.0	mg/kg	1.500	ND	106	63-143			
Surrogate: 1,2-Dichloroethane-d4	23.2		ug/kg	20.00		116	72-132			
Surrogate: 2-Bromo-1-Chloropropane	22.1		"	20.00		111	71-134			
Surrogate: 4-Bromofluorobenzene	19.3		"	20.00		97	74-132			

### Matrix Spike Dup (U002608-MSD1)

Source: U8H2610-51

Benzene	73.6	5.0	ug/kg	60.00	ND	123	53-101	21	20	
Toluene	67.4	5.0	"	60.00	ND	112	48-109	20	24	
Ethylbenzene	66.8	5.0	"	60.00	ND	111	45-107	26	33	
Methyl tert-Butyl Ether (MTBE)	69.9	10.0	"	60.00	ND	117	70-130	12	30	
Gasoline	1.8	1.0	mg/kg	1.500	ND	117	63-143	10	34	
Surrogate: 1,2-Dichloroethane-d4	21.0		ug/kg	20.00		105	72-132			
Surrogate: 2-Bromo-1-Chloropropane	19.6		"	20.00		98	71-134			
Surrogate: 4-Bromofluorobenzene	19.6		"	20.00		98	74-132			

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

**Report # U8H2610**

**Project: .**

**Date: 08/29/08**

Analytical Environmental Services

**Date Rec'd: 08/26/08**

1801 7th Street, Suite 100

**PO#**

Sacramento, CA 95811

## Notes and Definitions

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/04/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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### Batch U002604 - 3550B (Sonication)

Prepared: 08/27/08 Analyzed: 08/29/08

#### Blank (U002604-BLK1)

KROs (Kerosene Range Organics)	ND	1.0	mg/kg						
MORO (Motor Oil Range Organics)	ND	10.0	"						
DROs (Diesel Range Organics)	ND	1.0	"						
Surrogate: o-Terphenyl	1.68		"	1.333		126	70-130		

#### LCS (U002604-BS1)

DROs (Diesel Range Organics)	29.6	1.0	mg/kg	33.33		89	75-123		
Surrogate: o-Terphenyl	2.36		"	1.333		177	70-130		S-03

#### LCS Dup (U002604-BSD1)

DROs (Diesel Range Organics)	28.2	1.0	mg/kg	33.33		85	75-123	5	23
Surrogate: o-Terphenyl	2.15		"	1.333		161	70-130		S-03

### Batch U002605 - 3550B (Sonication)

Prepared: 08/27/08 Analyzed: 08/28/08

#### Blank (U002605-BLK1)

KROs (Kerosene Range Organics)	ND	1.0	mg/kg						
MORO (Motor Oil Range Organics)	ND	10.0	"						
DROs (Diesel Range Organics)	ND	1.0	"						
Surrogate: o-Terphenyl	1.25		"	1.333		94	70-130		

#### LCS (U002605-BS1)

DROs (Diesel Range Organics)	25.7	1.0	mg/kg	33.33		77	75-123		
Surrogate: o-Terphenyl	1.98		"	1.333		148	70-130		S-03

#### LCS Dup (U002605-BSD1)

DROs (Diesel Range Organics)	25.4	1.0	mg/kg	33.33		76	75-123	1	23
Surrogate: o-Terphenyl	1.95		"	1.333		146	70-130		S-03

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351

Certification # 2585

Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 09/08/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#:

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analvte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch U002616 - 3550B (Sonication) Prepared: 08/28/08 Analyzed: 09/08/08									
Blank (U002616-BLK1)									
Aroclor-1016	ND	10.0	ug/kg						
Aroclor-1221	ND	10.0	"						
Aroclor-1232	ND	10.0	"						
Aroclor-1242	ND	10.0	"						
Aroclor-1248	ND	10.0	"						
Aroclor-1254	ND	10.0	"						
Aroclor-1260	ND	10.0	"						
LCS (U002616-BS1)									
Aroclor-1260	146	10.0	ug/kg	150.0		97.3 70-130			
LCS Dup (U002616-BSD1)									
Aroclor-1260	134	10.0	ug/kg	150.0		89.3 70-130	8.57	20	



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

**Report #** U8H2610

**Project:** .

**Date:** 09/04/08

Analytical Environmental Services

**Date Rec'd:** 08/26/08

1801 7th Street, Suite 100

**PO#**

Sacramento, CA 95811

## Notes and Definitions

S-03 Surroogate criteria not met due to high level of analyte in sample.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351  
Phone: (209) 572-0900  
Fax: (209) 572-0916

Lab Report # W8H2610 (page 1 of 4)  
Regulatory ☐ Yes ☐ No CC: ☐ Yes ☐ No

Regulator: Pete Connelly  
Phone: (916) 447-3479

Fax: ( )  
Original To: pconnelly@analytical-lab.com  
C.C. To:

## CHAIN OF CUSTODY

☐ EDF ☐ EDT  
☐ FIELD LOGS

Client: Analytical Env Services  
Address: 1301 7th Street  
City: San Jose CA Zip: 95128

Project ID		Sampled By		(Print Name)		Sample ID		Container		No. Of Containers		Lab Use Only	
				(Signature)									
Date	Time	Sample type	Grab	Comp	Matrix			Type	Size			Lab ID #	Preservative
8/24/08	8:10					NF 1-5			802	1	X	-01	
✓	8:10				50,1	NF 2-5						-02	
	8:30					NF 2-5						-03	
	8:40					NF 2-5						-04	
	8:50					NF 3-S						-05	
	8:50					NF 3-BS						-06	
	8:50					NF 4-S						-07	
	8:50					NF 4-BS						-08	
	8:50					NF 5-S						-09	
	8:50					NF 5-BS						-10	
	8:50					NF 6-S						-11	
	8:50					NF 6-BS						-12	

Relinquished by (Signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Received by (Signature) Kater Wend Date 8/26/08 Time 14:30

Preservative: ☐ 4°C ☐ HCL ☐ 3-NaOH ☐ Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> ☐ 5-HNO<sub>3</sub> ☐ 6-H<sub>2</sub>O<sub>4</sub> ☐ 7-Other ☐ Matrix  
Hazardous Waste (Water) ☐ HWW ☐ Soil/Solid

Bailers \_\_\_\_\_ 55 Gallon Drums \_\_\_\_\_  
Pump Truck ☐ Mileage \_\_\_\_\_  
Time \_\_\_\_\_  
Approved By: \_\_\_\_\_

Turnaround Time: ☐ Standard ☐ Silver Rush ☐ Gold Rush ☐ Platinum Rush ☐ Other

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351

Phone: (209) 572-0900  
Fax: (209) 572-0916

Lab Report # 18A2610 (pg 2 of 4)

Regulatory ☐ Yes ☐ No CC: ☐ Yes ☐ No

Regulator:

Phone: ( ) ( )

Fax: ( ) ( )

Original To:

C.C To:

## CHAIN OF CUSTODY

☐ EDF ☐ EDT

☐ FIELD LOGS

Client: AFS

Address: 1801 7th Street Sate 100

City Sacramento CA Zip 95814

Project ID

Sampled By

(Print Name)  
(Signature)

Dee Connelly

Date

Time

Sample type  
Grab Comp

Matrix

Sample ID

Container

Type

Size

No. Of Containers

BCA (As MTR (As) TEPH

Lab Use Only

Lab ID #

Preservative

Relinquished by (Signature)

Date

Time

Received by (Signature)

Date

Time

Relinquished by (Signature)

Date

Time

Received by (Signature)

Date

Time

Preservative:

1 4°C 2 HCL 3 NaOH 4 Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 5 HNO<sub>3</sub> 6 H<sub>2</sub>SO<sub>4</sub> 7 Other

DW Drinking Water WW Waste Water HWW Hazardous Waste (Water) S Soil/Solid

Bailers

55 Gallon Drums

Pump Truck

Time

Mileage

Approved By:

Terminated Time ☐ Standard ☐ Silver Rush ☐ Gold Rush ☐ Platinum Rush ☐ Other

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351

Phone: (209) 572-0900  
Fax: (209) 572-0916

Lab Report # U8 H2610 (page 3 of 4)

Regulatory ☐ Yes ☒ No CC: ☐ Yes ☒ No

Regulator: Pete Connolly

Phone: (916) 447-3479

Fax: (916) 447-1665

Original To: pconnolly@analytical-lab.com

C.C To:

## CHAIN OF CUSTODY

☐ EDF ☒ EDT

☐ FIELD LOGS

Client: AES

Address: 1801 7th Street Ste 100

City Sacramento CA Zip 95814

Sampled By		(Print Name) <u>Pete Connolly</u>		(Signature) <u>[Signature]</u>		Sample ID		Container		No. Of Containers		Lab Use Only	
Date	Time	Grab	Comp	Matrix				Type	Size			Lab ID #	Preservative
8/26/08	1010				NF13-S				8oz	1			
	1010				NF13-BS								
	1020				NF14-S								
	1020				NF14-BS								
	1130				NF15-S								
	1130				NF15-BS								
	1140				NF16-S								
	1140				NF16-BS								
	1200				NF17-S								
	1200				NF17-BS								
	1240				NF18-S								
	1240				NF18-BS								

Relinquished by (Signature) <u>[Signature]</u>	Date <u>8/26/08</u>	Time <u>1:35</u>	Received by (Signature) <u>Kate Ward</u>	Date <u>8/26/08</u>	Time <u>14:35</u>
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Preservative: ☒ 1 4°C ☒ 2 HCL ☒ 3 NaOH ☒ 4 Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> ☒ 5 HNO<sub>3</sub> ☒ 6 H<sub>2</sub>SO<sub>4</sub> ☒ 7 Other

Matrix: ☒ HWW ☐ Waste Water ☐ Drinking Water ☐ Hazardous Waste (Water) ☒ Soil/Solid

Bailers: 55 Gallon Drums

Pump Truck ☐ Time Mileage

Turnaround Time ☐ Standard ☐ Silver Rush ☐ Gold Rush ☐ Platinum Rush ☐ Other

Approved By: \_\_\_\_\_

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351  
Phone: (209) 572-0900  
Fax: (209) 572-0916

Lab Report # 48H0610 (page 4 of 4)  
Regulatory ☐ Yes ☐ No CC: ☐ Yes ☐ No

Regulator: Peke Connolly

Phone: (9th) 447-3479

Fax: (9th) 447-1665

Original To: geoanalytical.com

C.C To:

## CHAIN OF CUSTODY

☐ EDF ☐ EDT

☐ FIELD LOGS

Client: AFS  
Address: 1801 7th Street  
City: Sanramento CA Zip: 95814

Sampled By		(Print Name) <u>Peke Connolly</u>		(Signature) <u>[Signature]</u>		Sample ID		Container		No. Of Containers		Lab Use Only	
Date	Time	Sample type	Grab	Comp	Matrix			Type	Size			Lab ID #	Preservative
8/26/06	1245					NF 19-S			8oz	1	X	37	
	1245					NF 19-BS					X	38	
	1310					NF 20-S					X	39	
	1310					NF 20-BS					X	40	
	1330					NF 21-S					X	41	
	1330					NF 21-BS					X	42	
	1255					NF-PL					X	43	

Relinquished by (Signature) <u>[Signature]</u>	Date <u>8/26/08</u>	Time <u>1435</u>	Received by (Signature) <u>[Signature]</u>	Date <u>8/26/08</u>	Time <u>1435</u>
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Preservative: ☐ 1 4°C ☐ 2 HCL ☐ 3 NaOH ☐ 4 Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> ☐ 5 HNO<sub>3</sub> ☐ 6 H<sub>2</sub>SO<sub>4</sub> ☐ 7 Other

Matrix: ☐ DW Drinking Water ☐ WW Waste Water ☐ HW Hazardous Waste (Water) ☐ S Soil/Solid

Bailers 55 Gallon Drums

Pump Truck ☐ Time Mileage

Approved By: \_\_\_\_\_

Attached to this coversheet is the October 2, 2008 Geo Analytical Laboratories re-analysis of samples collected on August 26, 2008.



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 10/02/08

Analytical Environmental Services

1801 7th Street, Suite 100

Sacramento, CA 95811

PO#

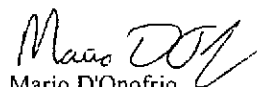
Date Rec'd: 08/26/08


## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler: Pete Connelly

Sample ID	Time	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF1-BS	8:10	U8H2610-02	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	46.7				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.00	% Recovery 75 %	QC Limit % 70-130		Surrogate Notes
NF2-BS	8:30	U8H2610-04	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	125				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 0.980	% Recovery 74 %	QC Limit % 70-130		Surrogate Notes
NF8-BS	9:00	U8H2610-16	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 1.08	% Recovery 81 %	QC Limit % 70-130		Surrogate Notes
NF9-BS	9:05	U8H2610-18	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 0.946	% Recovery 71 %	QC Limit % 70-130		Surrogate Notes
NF10-BS	9:10	U8H2610-20	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 0.879	% Recovery 66 %	QC Limit % 70-130		Surrogate Notes S-LOW
NF14-BS	10:20	U8H2610-28	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 0.767	% Recovery 58 %	QC Limit % 70-130		Surrogate Notes S-LOW
NF15-BS	11:30	U8H2610-30	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		9/29/08	U003012
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	ND				
Sample Notes		Surrogate o-Terphenyl			Amnt Spiked 1.333	Amnt Recovered 0.457	% Recovery 34 %	QC Limit % 70-130		Surrogate Notes S-LOW

  
Mario D'Onofrio  
Chemist

  
Donna Keller  
Laboratory Director

Certification # 2585

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 10/02/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch U003012 - 3550B (Sonication)

Prepared: 09/29/08 Analyzed: 10/01/08

### Blank (U003012-BLK1)

KROs (Kerosene Range Organics)	ND	1.0	mg/kg						
MORO (Motor Oil Range Organics)	ND	10.0	"						
DROs (Diesel Range Organics)	ND	1.0	"						
Surrogate: o-Terphenyl	1.04		"	1.333		78		70-130	

### LCS (U003012-BS1)

DROs (Diesel Range Organics)	23.5	1.0	mg/kg	33.33		71		75-123	
Surrogate: o-Terphenyl	1.48		"	1.333		111		70-130	

### LCS Dup (U003012-BSD1)

DROs (Diesel Range Organics)	30.4	1.0	mg/kg	33.33		91		75-123	26 23
Surrogate: o-Terphenyl	1.31		"	1.333		99		70-130	

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

**Report # U8H2610**

**Project: .**

**Date: 10/02/08**

Analytical Environmental Services

1801 7th Street, Suite 100

Sacramento, CA 95811

**PO#**

**Date Rec'd: 08/26/08**

## Notes and Definitions

S-LOW Low surrogate recovery confirmed as a matrix effect by a second analysis.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 10/16/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

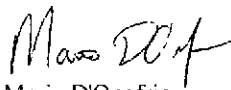
Sacramento, CA 95811

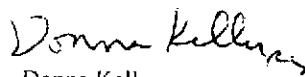
## CERTIFICATE OF ANALYSIS

Date Sampled: 08/26/08

Sampler: Pete Connelly

Sample ID	Time:	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF17-BS	12:00	U8H2610-34	1.0	8015B	DROs (Diesel Range Organics)	ND	mg/kg		10/13/08	U003122
			1.0		KROs (Kerosene Range Organics)	ND				
			10.0		MORO (Motor Oil Range Organics)	29.7				
Sample Notes		Surrogate o-Terphenyl		Amnt Spiked 1.333	Amnt Recovered 1.47	% Recovery 110 %	QC Limit % 70-130	Surrogate Notes		

  
Mario D'Onofrio  
Chemist

  
Donna Keller  
Laboratory Director

Certification # 2585

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8H2610

Project: .

Date: 10/16/08

Analytical Environmental Services

Date Rec'd: 08/26/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch U003122 - 3550B (Sonication)

Prepared: 10/13/08 Analyzed: 10/14/08

### Blank (U003122-BLK1)

KROs (Kerosene Range Organics) ND 1.0 mg/kg

MORO (Motor Oil Range Organics) ND 10.0 "

DROs (Diesel Range Organics) ND 1.0 "

Surrogate: o-Terphenyl 1.10 " 1.333 82 70-130

### LCS (U003122-BS1)

DROs (Diesel Range Organics) 27.2 1.0 mg/kg 33.33 82 75-123

Surrogate: o-Terphenyl 1.73 " 1.333 130 70-130

### LCS Dup (U003122-BSD1)

DROs (Diesel Range Organics) 28.5 1.0 mg/kg 33.33 85 75-123 5 23

Surrogate: o-Terphenyl 1.09 " 1.333 81 70-130

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

**Report # U8H2610**

**Project: .**

**Date: 10/16/08**

Analytical Environmental Services

**Date Rec'd: 08/26/08**

1801 7th Street, Suite 100

**PO#**

Sacramento, CA 95811

## Notes and Definitions

NID Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8K0311

Project: .

Date: 11/04/08

Analytical Environmental Services

1801 7th Street, Suite 100

Sacramento, CA 95811

PO#

Date Rec'd: 11/03/08

## CERTIFICATE OF ANALYSIS

Date Sampled: 11/03/08

Sampler: Pete Connelly

Sample ID	Time	Lab ID	RL	Method	Analyte	Result	Units	Notes	Started	Batch #
NF-1	10:10	U8K0311-01	10.0	8082	Aroclor-1016	ND	ug/kg		11/3/08	U003360
			10.0		Aroclor-1221	ND				
			10.0		Aroclor-1232	ND				
			10.0		Aroclor-1242	ND				
			10.0		Aroclor-1248	ND				
			10.0		Aroclor-1254	ND				
			10.0		Aroclor-1260	ND				
NF-2	10:30	U8K0311-02	10.0	8082	Aroclor-1016	ND	ug/kg		11/3/08	U003360
			10.0		Aroclor-1221	ND				
			10.0		Aroclor-1232	ND				
			10.0		Aroclor-1242	ND				
			10.0		Aroclor-1248	ND				
			10.0		Aroclor-1254	ND				
			10.0		Aroclor-1260	ND				
NF-35	10:45	U8K0311-03	10.0	8082	Aroclor-1016	ND	ug/kg		11/3/08	U003360
			10.0		Aroclor-1221	ND				
			10.0		Aroclor-1232	ND				
			10.0		Aroclor-1242	ND				
			10.0		Aroclor-1248	ND				
			10.0		Aroclor-1254	ND				
			10.0		Aroclor-1260	ND				
NF-3B5	10:45	U8K0311-04	10.0	8082	Aroclor-1016	ND	ug/kg		11/3/08	U003360
			10.0		Aroclor-1221	ND				
			10.0		Aroclor-1232	ND				
			10.0		Aroclor-1242	ND				
			10.0		Aroclor-1248	ND				
			10.0		Aroclor-1254	ND				
			10.0		Aroclor-1260	ND				
NF-45	10:50	U8K0311-05	10.0	8082	Aroclor-1016	ND	ug/kg		11/3/08	U003360
			10.0		Aroclor-1221	ND				
			10.0		Aroclor-1232	ND				
			10.0		Aroclor-1242	ND				
			10.0		Aroclor-1248	ND				
			10.0		Aroclor-1254	ND				
			10.0		Aroclor-1260	ND				
NF-4B5	11:10	U8K0311-06	10.0	8082	Aroclor-1016	ND	ug/kg		11/3/08	U003360
			10.0		Aroclor-1221	ND				
			10.0		Aroclor-1232	ND				
			10.0		Aroclor-1242	ND				
			10.0		Aroclor-1248	ND				
			10.0		Aroclor-1254	ND				
			10.0		Aroclor-1260	ND				

Matt Page  
Chemist

Donna Keller  
Laboratory Director

Certification # 2585

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report # U8K0311

Project: .

Date: 11/04/08

Analytical Environmental Services

Date Rec'd: 11/03/08

1801 7th Street, Suite 100

PO#

Sacramento, CA 95811

## Semi-Volatile Organic Chemistry of Hazardous Waste - Quality Control

GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch U003360 - 3550B (Sonication)

Prepared: 11/03/08 Analyzed: 11/04/08

### Blank (U003360-BLK1)

Aroclor-1016	ND	10.0	ug/kg
Aroclor-1221	ND	10.0	"
Aroclor-1232	ND	10.0	"
Aroclor-1242	ND	10.0	"
Aroclor-1248	ND	10.0	"
Aroclor-1254	ND	10.0	"
Aroclor-1260	ND	10.0	"

### LCS (U003360-BS1)

Aroclor-1260	151	10.0	ug/kg	150.0	101	70-130
--------------	-----	------	-------	-------	-----	--------

### LCS Dup (U003360-BSD1)

Aroclor-1260	141	10.0	ug/kg	150.0	94.0	70-130	6.85	20
--------------	-----	------	-------	-------	------	--------	------	----

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351

Phone: (209) 572-0900  
Fax: (209) 572-0916

Lab Report # U8K0311

Regulatory ☐ Yes ☐ No CC: ☐ Yes ☐ No

Regulator:

Phone: ( )

Fax: ( )

Original To:

C.C To:

Client: AFS

Address: 1807 180th Street

City: Sacramento CA Zip 95814

## CHAIN OF CUSTODY

☐ EDF ☐ EDT

☐ FIELD LOGS

Sampled By		(Print Name) <u>Pete Connelly</u>		(Signature) <u>[Signature]</u>		Sample ID		Container		No. Of Containers		Lab Use Only	
Date	Time	Sample type	Grab	Comp	Matrix	Type	Size	Type	Size	No. Of Containers	Lab ID #	Preservative	
11/3/08	10:00	501				8	62			2	01		
↓	10:30	↓			↓	↓	↓			↓	02		
↓	10:45	↓			↓	↓	↓			↓	03		
↓	↓	↓			↓	↓	↓			↓	04		
↓	10:50	↓			↓	↓	↓			↓	05		
↓	11:10	↓			↓	↓	↓			↓	010		

**RUSH**

connelly@analyticalcorp.com (916) 524-4853

Relinquished by (Signature) <u>[Signature]</u>	Date <u>11/3/08</u>	Time <u>1320</u>	Received by (Signature) <u>[Signature]</u>	Date <u>11/3/08</u>	Time <u>1320</u>
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Preservative: ☐ 1 4°C ☐ 2 HCL ☐ 3 NaOH ☐ 4 Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> ☐ 5 HNO<sub>3</sub> ☒ 6 H<sub>2</sub>O<sub>4</sub> ☐ 7 Other

Bailers 55 Gallon Drums ☐ Matrix ☒ Drinking Water ☒ Waste Water ☒ Hazardous Waste (Water) ☒ Soil/Solid

Turnaround Time ☐ Standard ☐ Silver Rush ☐ Gold Rush ☐ Platinum Rush ☐ Other

Approved By:

Attached to this coversheet is the Geo Analytical Laboratories analysis of samples collected on 11/3/2008 and analyzed for Polychlorinated biphenyls (PCBs).

# **ATTACHMENT 2**

---

## TABLE OF RESULTS

# NORTH FORK SAMPLING RESULTS

Composite Sample ID Numbers

Sample Constituents	NF1-S	NF2-S	NF3-S	NF4-S	NF5-S	NF6-S	NF7-S	NF8-S	NF9-S	NF10-S	NF11-S	NF12-S	NF13-S	NF14-S	NF15-S	NF16-S	NF17-S	NF18-S	NF19-S	NF20-S	NF21-S
Chlorinated Pesticides	NF1-BS	NF2-BS	NF3-BS	NF4-BS	NF5-BS	NF6-BS	NF7-BS	NF8-BS	NF9-BS	NF10-BS	NF11-BS	NF12-BS	NF13-BS	NF14-BS	NF15-BS	NF16-BS	NF17-BS	NF18-BS	NF19-BS	NF20-BS	NF21-BS
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC (Cyclohexane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4-DDD <sup>2</sup>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE <sup>3</sup>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT <sup>4</sup>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC (Cyclohexane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Hydrocarbons (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diesel Fuel (TPH-d)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gasoline (TPH-g)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Motor Oil	386	131	ND	ND	ND	ND	ND	43.4	32.2	32.1	ND	ND	ND	35.5	583	ND	48.8	ND	ND	ND	ND
BTEX	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTBE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs (Polychlorinated Biphenyls)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES: <sup>1</sup> Alpha-1,2,3,4,5,6-hexachlorocyclohexane

<sup>2</sup> Tetrachlorodiphenyldichloroethane

<sup>3</sup> Dichlorodiphenyldichloroethane

<sup>4</sup> Dichlorodiphenyltrichloroethane

<sup>5</sup> mg/kg = milligrams per kilograms or parts per million



NORTH FORK SOIL SAMPLING RESULTS							
Sample ID Numbers*							
Sample Constituents	NF1- BS	NF2- BS	NF8- BS	NF9- BS	NF10- BS	NF14- BS	NF15- BS
Petroleum Hydrocarbons (mg/kg)							
Diesel Fuel (TPH-d)	ND	ND	ND	ND	ND	ND	ND
Gasoline (TPH-g)	ND	ND	ND	ND	ND	ND	ND
Motor Oil	46.7	125	ND	ND	ND	ND	ND

\*Samples collected at depths ranging from 12 to 18 inches below ground surface

NORTH FORK SOIL SAMPLING RESULTS						
Sample ID Numbers*						
Analyte	NF-1	NF-2	NF-35	NF-3B5	NF-45	NF-4B5
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	ND	ND	ND	ND	ND	ND
Aroclor-1221	ND	ND	ND	ND	ND	ND
Aroclor-1232	ND	ND	ND	ND	ND	ND
Aroclor-1242	ND	ND	ND	ND	ND	ND
Aroclor-1248	ND	ND	ND	ND	ND	ND
Aroclor-1254	ND	ND	ND	ND	ND	ND
Aroclor-1260	ND	ND	ND	ND	ND	ND

\* Laboratory data from samples collected on 11/3/08

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*BIA North Fork Casino Phase I ESA, 2007*





## United States Department of the Interior

RECEIVED  
July 23 07 FA

BUREAU OF INDIAN AFFAIRS  
Pacific Regional Office  
2800 Cottage Way  
Sacramento, California 95825

JUL 19 2007

Elaine Fink, Chairperson  
North Fork Rancheria  
P.O. Box 929  
North Fork, CA 93643

Dear Ms. Fink:

On July 12, 2007, the Bureau of Indian Affairs (BIA) conducted a Phase I Environmental Site Assessment (ESA) for a proposed fee-to-trust land acquisition of 305± acres and subsequent development of a casino/hotel resort by the North Fork Rancheria. The property is located in Madera County, California, just north of the City of Madera and adjacent to State Route 99 (SR-99).

The inspection consisted of a walk through of the grounds and structures on the proposed trust site by the BIA, Pacific Region, Environmental Protection Specialist with the assistance of Pete Connelly, Associate, Analytical Environmental Services. In compliance with Departmental guidance 602 DM 2, an ESA was conducted to ensure the absence of all risk factors exposing the Department to liability of hazardous substances and environmental cleanup costs. The term "Recognized Environmental Conditions" (REC) is defined as, "the presence or likely presence of contamination of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws."

The inspection revealed areas of immediate concern for contamination to ground and water resources located on and off the subject property. The Recognized Environmental Conditions (REC) that exists on the parcels are described as follows:

- Several agriculture wells were observed on the subject property; their current operational status is unclear and will need to be addressed. Abandoned wells that have not been properly closed are a potential conduit for groundwater contamination. See enclosed photographs.
- Several 55 gallon drums were observed on the subject property. The unmarked drums were observed to be partially filled with unknown material and need to be properly disposed. See enclosed photographs.
- Numerous piles of household, metal, and wood debris were observed on the subject property. The debris was observed along the southwest and southeast corner of the property. The bulk of the debris was scattered throughout the abandoned single family residence



located at the southeast corner of the property adjacent to Golden State Blvd. and Hwy 99. See enclosed photographs.

- Abandoned farm equipment with hazardous fluids remaining in reservoirs.
- Various containers of suspected hazardous materials in deteriorated condition; un-labeled and un-marked containers, unidentified tanks, improperly stored hazardous material containers, vehicle batteries, and several containers of used petroleum products deteriorated and spilling onto the ground posing an immediate threat to the environment. These incidents provide a conduit for contamination to groundwater and environment.

We request your assistance in addressing these REC's in order to facilitate the FTT process. Enclosed are various photos and maps to assist with identification and location of the REC's. Also, we have enclosed various recommendations and procedures to address these REC's in accordance to local, state, and federal laws:

1. Identify the status of each well and decide in the best interest of the tribe, which wells will serve the tribes long term goals. Upgrade and provide adequate protection to wells that will remain open for tribal use. Properly close remaining wells in accordance to local, state, and federal laws. Provide EPA approved closure documentation to the BIA once completed.
2. Identify the contents of the 55 gallon drums. Once contents are identified ensure that identified material and drums are properly disposed of in accordance to local, state and federal laws.
3. Properly clean and dispose of all household, metal, and wood debris on the site in accordance with local, state, and federal laws.
4. Properly identify and dispose of storage containers, tanks, car batteries, contaminated soils and hazardous materials in accordance with local, state, and federal laws. Ensure that the handling of all hazardous materials identified, be undertaken by a certified environmental professional.
5. Upon completion of above, provide copies of all remedial actions to the BIA for review and approval.

Our office is willing to offer technical assistance in the cleanup of the above sites in order to facilitate the Tribe's land acquisition process. Once all items above have been addressed, please contact our office to reschedule an ESA with our staff.



If you have any questions or need additional information, please contact Patrick O'Mallan, Pacific Region, Environmental Protection Specialist, at (916) 978-6044, or John Rydzik, Chief, Division of Environmental, Cultural Resources Management and Safety at (916) 978-6042.

Sincerely,

/s/ Clayton Gregory

Regional Director

Enclosures

cc: David Zweig, Analytical Environmental Services (AES)



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



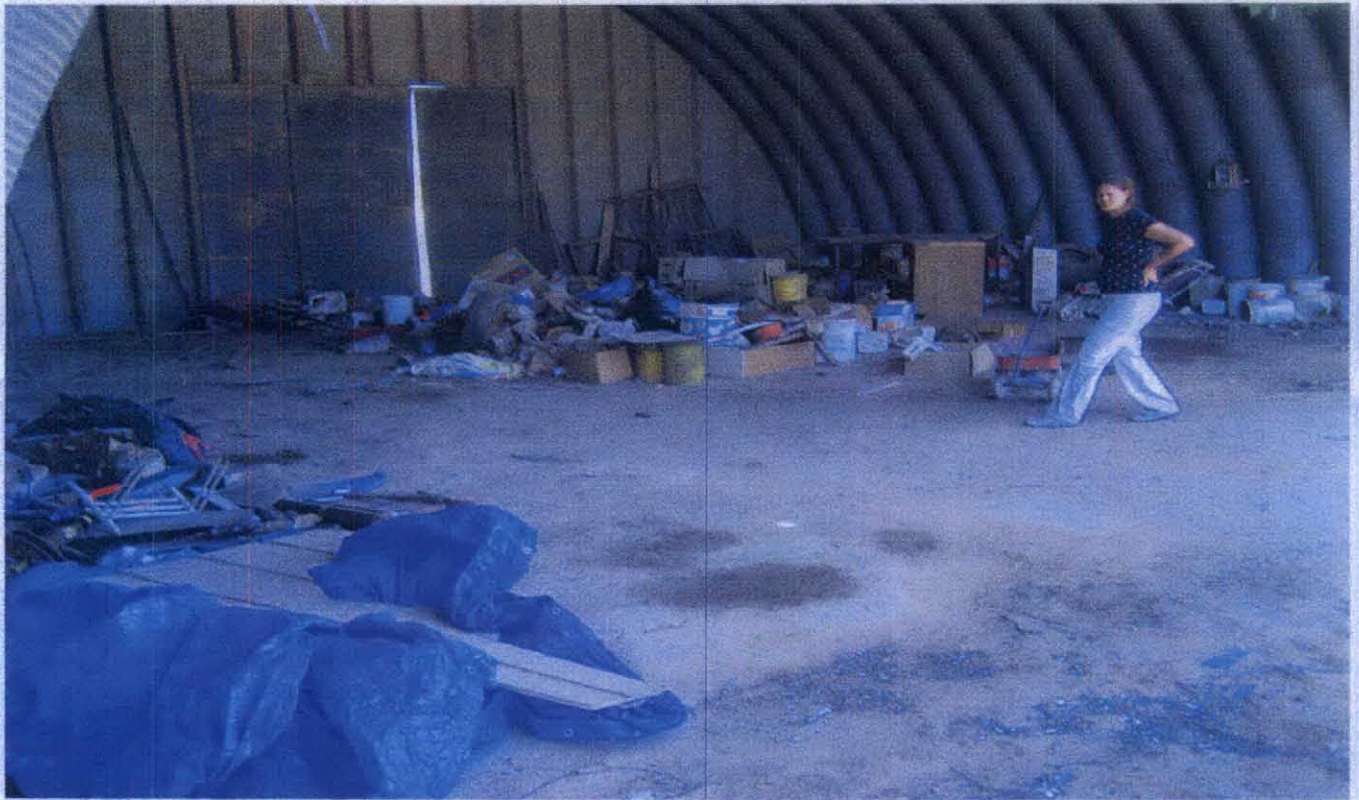
View of one of several wells located on subject property.



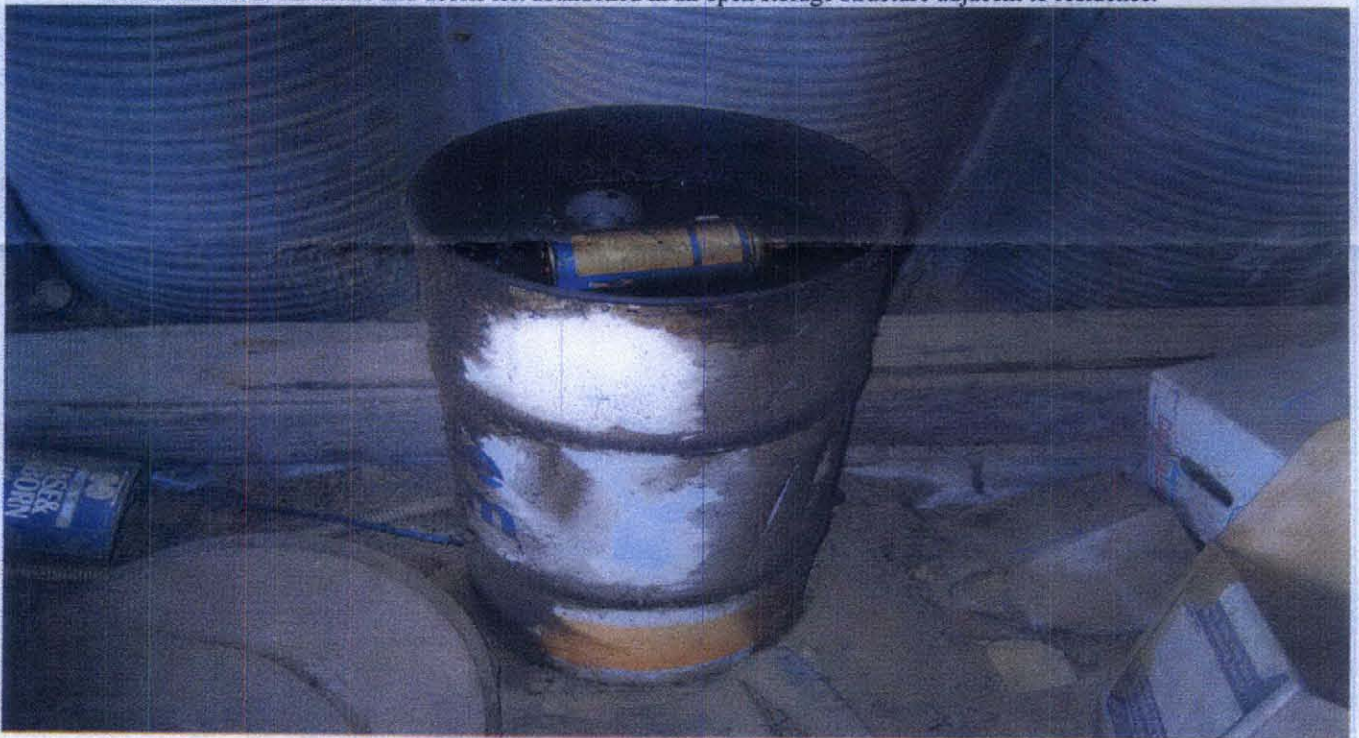
Ground water well located adjacent to single family residence.



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



Various hazardous materials and debris left abandoned in an open storage structure adjacent to residence.



Used petroleum material left in an unsecured/unmarked drum.



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



Abandoned farm equipment



Various household, metal and wood debris located along the southwest portion of subject property.



**NORTH FORK, CASINO/HOTEL PROJECT  
RECOGNIZED ENVIRONMENTAL CONDITIONS  
JULY 12, 2007**



Various unmarked 55 gallon drums in a deteriorated state, without proper containment.



Unidentified hazardous material in a deteriorated state, leaking onto ground surface area.

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*Phase I Environmental Site Assessment (Madera Site)*

PHASE I  
ENVIRONMENTAL SITE ASSESSMENT

**NORTH FORK CASINO**

**MAY 2005**

Prepared For:

North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643

Prepared By:

Analytical Environmental Services  
2021 "N" Street, Suite 200  
Sacramento, Ca 95814  
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Fax (916) 447-1665  
[www.analyticalcorp.com](http://www.analyticalcorp.com)



PHASE I  
ENVIRONMENTAL SITE ASSESSMENT

**NORTH FORK CASINO**

**MAY 2005**

Lead Agency:

North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643



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# ***SECTION 1.0***

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## ***INTRODUCTION***

# **SECTION 1.0**

---

## **INTRODUCTION**

### **1.1 PURPOSE**

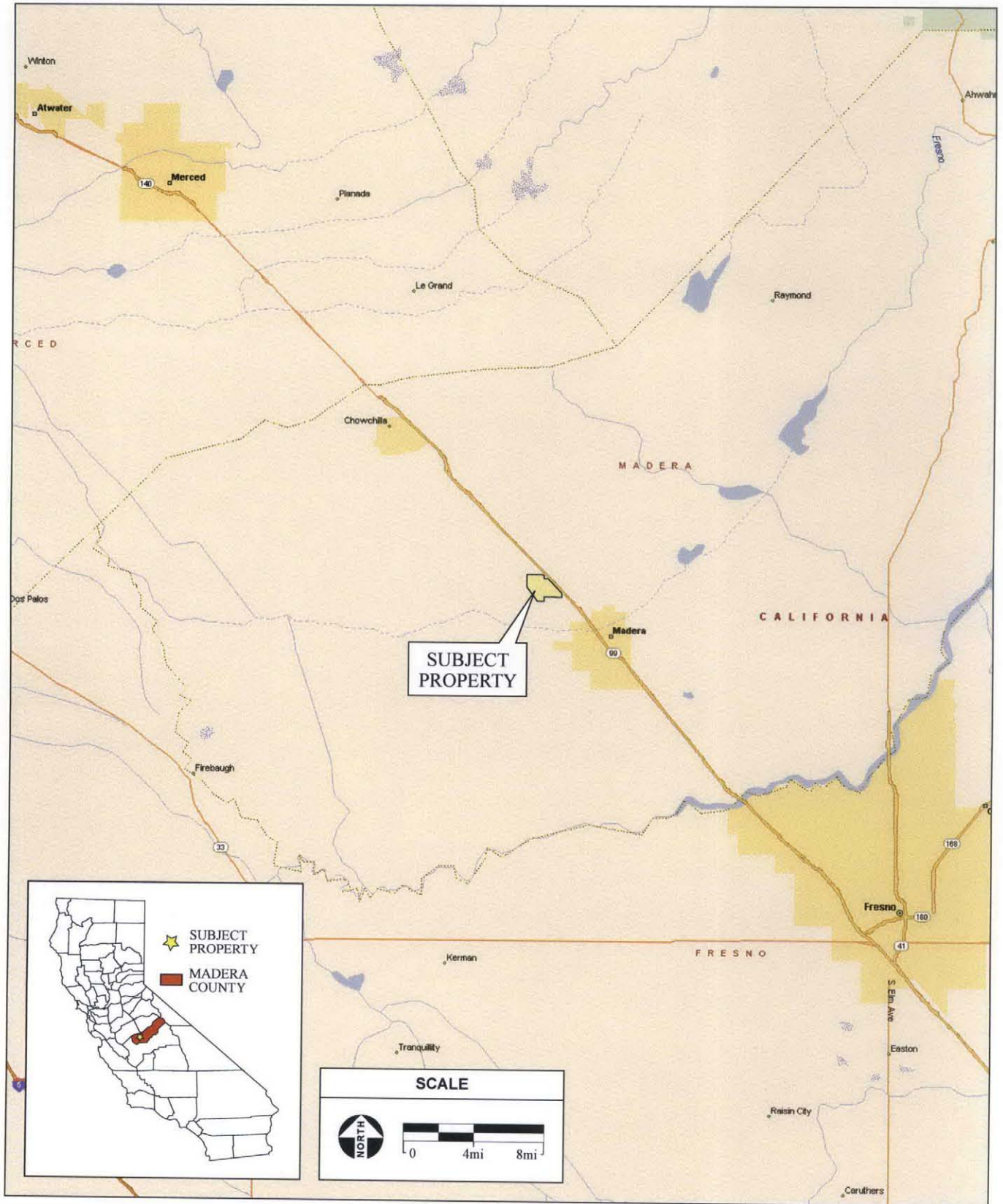
Analytical Environmental Services (AES) has been retained by the North Fork Rancheria of Mono Indians (hereafter, "Tribe") to prepare this Phase I Environmental Site Assessment (ESA) in accordance with the American Society for Testing and Materials (ASTM) Standard Practice E 1527-00 and Bureau of Indian Affairs (BIA) guidelines. The Subject Property is located in unincorporated Madera County just north of the City of Madera and west of State Route 99 (SR-99) (**Figure 1**). This Phase I ESA encompasses seven adjacent parcels with an area of approximately 305-acres. As such, use of the term "Subject Property" refers to the seven parcels unless otherwise stated. This Phase I ESA was prepared to support a BIA fee-to-trust application.

The purpose of this Phase I ESA is to identify environmental conditions that may affect future uses of the Subject Property. AES has performed this assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-00, which specifies the appropriate inquiry requirements for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The Phase I ESA covers the Subject Property, adjacent areas, and surrounding known sources of contamination, up to 2.0 miles from a point roughly in the middle of the Subject Property. Site reconnaissance inspections of the Subject Property and adjacent properties were performed, local agencies were contacted and relevant database listings of hazardous waste sites, hazardous waste generators, and underground storage tanks were reviewed. AES also reviewed historical aerial photographs and topographic maps for the Subject Property. Years available for review were 1950, 1972, 1981, and 2004 (EDR, 2004).

### **1.2 RECOGNIZED ENVIRONMENTAL CONDITIONS**

The term Recognized Environmental Condition (REC) refers to the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or



**Figure 1**  
Regional Location Map

petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Additionally, the term historical REC refers to an environmental condition associated with the Subject Property, including a past release of any hazardous substance or petroleum product, which in the past would have been considered a REC, however such condition has been remediated and will therefore be considered a REC and included in this Phase I ESA (ASTM 2000).

### **1.3 LIMITATIONS AND EXCEPTIONS**

No Environmental Site Assessment can completely eliminate uncertainty regarding the potential for RECs in connection with a property. Conformance of this assessment with ASTM Standard Practice E 1527-00 will reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with the Subject Property. While AES has made every effort to discover and interpret available historical and current information on the property within the time available, the possibility for undiscovered contamination to be present remains. AES's report is a best-effort collection and interpretation of available information consistent with industry standards for the completion of Phase I ESAs.

This site assessment is based on a regulatory agency records review, a site reconnaissance, and a telephone interview with a representative from Madera County. Physical testing of soil or groundwater was not within the scope of this assessment. The Subject Property does not have any buildings on it. Surveys for the presence of asbestos containing materials (ACM) were not conducted.

### **1.4 METHODOLOGY**

A variety of data sources and agencies were consulted in completing this Phase I ESA. The following sections describes the methods used and the data sources consulted to accomplish each task.

#### **1.4.1 Historical Review**

Previous land uses and history of the study area was researched in an effort to identify potential sources of hazardous substances at or near the Subject Property. Historical aerial photographs (**Appendix A**) and topographic maps (**Appendix B**) of the Subject Property and immediate vicinity were reviewed and interpreted. Aerial photos are examined in order to provide indications of the presence of aboveground storage tanks, industrial buildings, gas station

- Two 55-gallon drums were observed in an area adjacent to a metal storage building on the Subject Property. One of the drums was empty; the other drum was full of used oil filters from farming equipment.
- An approximate 500-gallon above ground storage tank was present adjacent to the residence located on the Subject Property. The tank was empty during the site reconnaissance visit.
- There were several large debris piles located on the Subject Property. The debris piles were visually inspected, and it appears that the debris is comprised of mostly non-hazardous wastes including appliances, wood debris and household waste.
- There are currently several agricultural wells with associated piping and electrical supply boxes located on the Subject Property.

Based on the findings and conclusions of this Phase I Environmental Site Assessment AES has the following recommendations:

- The sulfur in the cattle feeder should be removed and disposed according to State and local regulations. Alternatively, the property owner can contact a local grape vineyard to determine if the sulfur can be utilized on the grape crops.
- The used oil filters in the 55-gallon drum should be removed and disposed of properly.
- The empty 500-gallon above ground storage tank should be removed from the Subject Property.
- All abandoned agricultural wells with associated piping and electrical supply boxes should be abandoned and removed according to State/local regulations.

There were no indications of improper hazardous materials involvement on the Subject Property. Based on information gathered during this Phase I ESA, AES has determined that no RECs exist on the Subject Property and no further studies are recommended.



## ***SECTION 2.0***

---

### ***SITE DESCRIPTION***

## SECTION 2.0

### SITE DESCRIPTION

---

#### 2.1 LOCATION AND LEGAL DESCRIPTION

The Subject Property is located within an unincorporated area of Madera County, north of the City of Madera, adjacent to State Route 99 (SR-99), and approximately 25 miles north of the City of Fresno, California (**Figure 2**). This Phase I ESA encompasses seven adjacent parcels with a total area of approximately 305-acres, including a 36.01-acre parcel, a 40.66-acre parcel, a 38.26-acre parcel, a 42.23-acre parcel, a 38.92-acre parcel, a 56.44-acre parcel, and a 52.97-acre parcel. **Figure 3** is an aerial photograph of the Subject Property. The Madera County Assessors Parcel Numbers (APNs) are included in the following table:

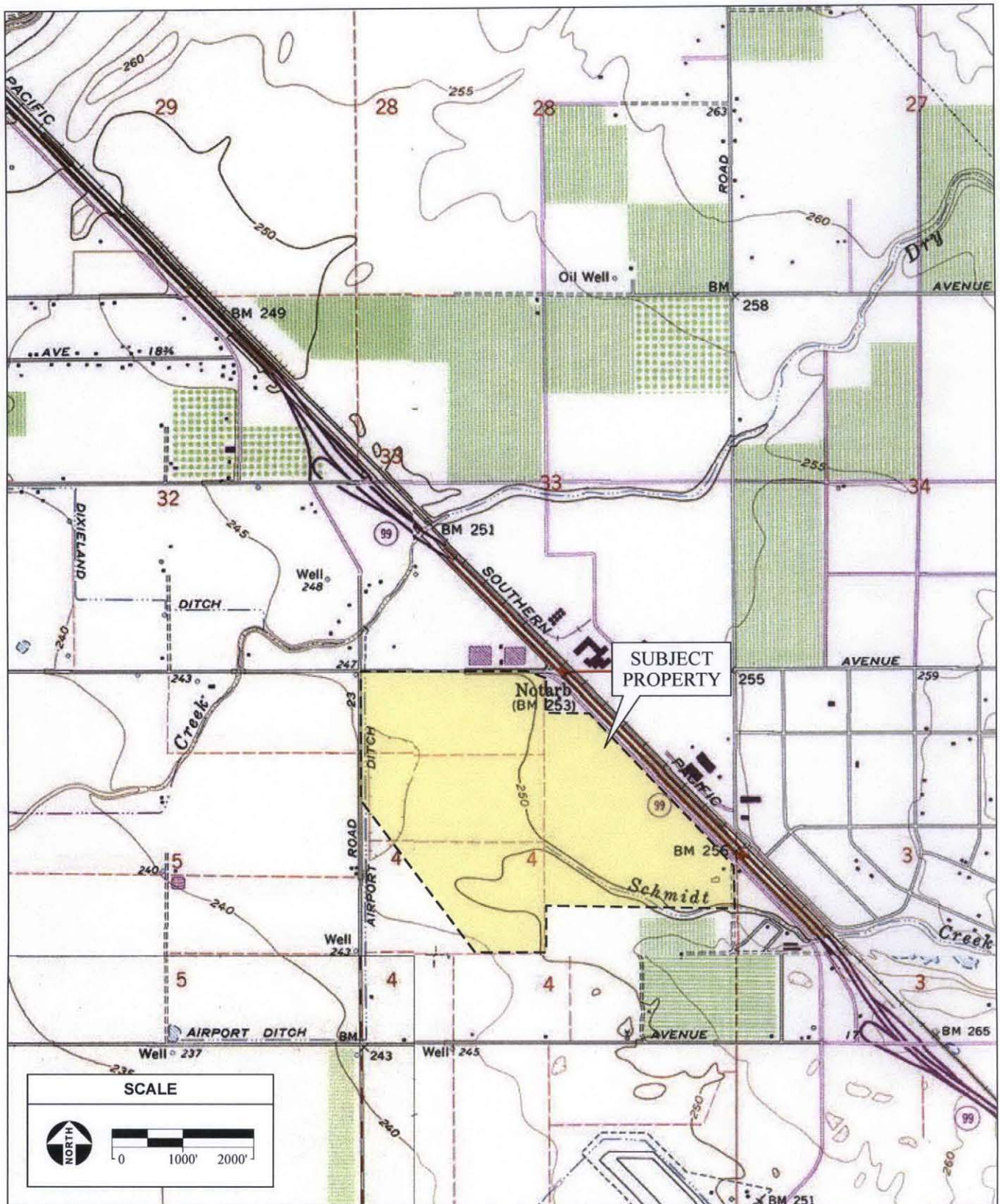
**TABLE 1**  
SUBJECT PROPERTY - PARCELS

Assessors Parcel Number (APN)	Acres
033-030-010-000	36.01
033-030-011-000	40.66
033-030-012-000	38.26
033-030-013-000	42.23
033-030-014-000	38.92
033-030-015-000	56.44
033-030-017-000	52.97
<b>TOTAL</b>	<b>305.49</b>

Source: First American Title, 2003; Analytical Environmental Services, 2005.

#### 2.2 SITE AND VICINITY CHARACTERISTICS

The Subject Property is generally bound by Road 23 to the west, Golden State Boulevard and SR-99 east, Avenue 18 to the north, and Avenue 17 to the south. Surrounding land uses include agricultural to the west, a small auto recycler on the northeast border, private residences and abandoned commercial greenhouses to the north, and private residences and vineyards to the south. Access is on the north side of the Subject Property via an unimproved road off Avenue 18.

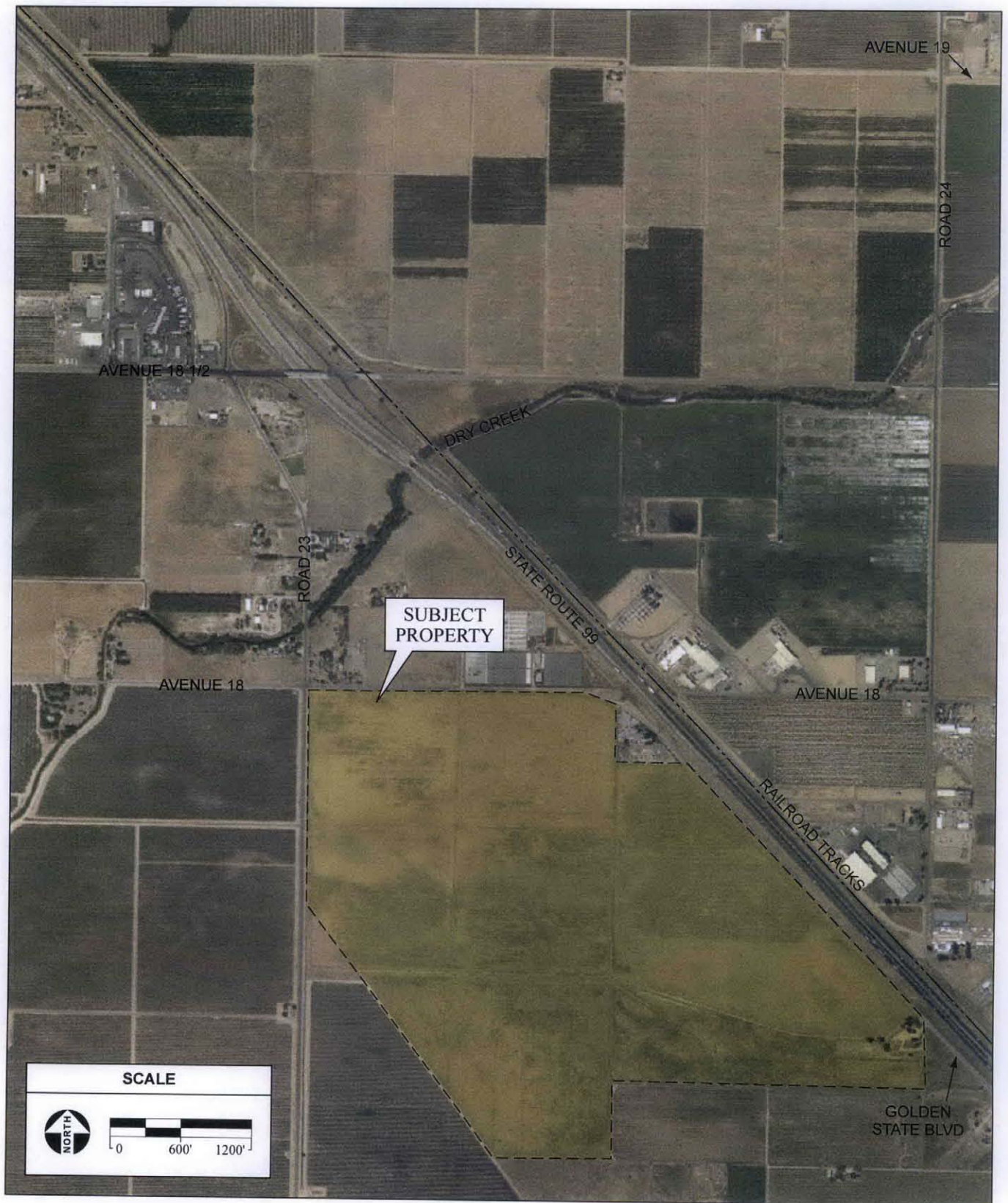


SOURCE: "Berenda, CA" & "Kismet, CA" USGS 7.5 Minute Topographic Quadrangles, Sections 32 & 33, T10S, R17E and Section 4, T11S, R17E, Mt. Diablo Baseline and Meridian ; AES, 2005

North Fork Casino Phase I ESA / 204502 ■

**Figure 2**  
Topographic Site Map





Additionally, the site can be accessed through a private driveway located off Golden State Boulevard. The driveway also provides access to a residence and associated outbuildings located on the Subject Property. The residence is addressed as 17488 Golden State Boulevard (**Figure 3**). During the February 12<sup>th</sup>, 2004 site reconnaissance visit (**Section 3.0**), the property was planted with a non-irrigated feed crop. No crops were planted on the Subject Property during the 2004-2005 season.

The topography of the Subject Property is relatively flat with an elevation of approximately 250 feet above mean sea level (msl).

## 2.3 HYDROLOGY

The Subject Property is located within the Madera Irrigation District (MID). MID is the main surface water supplier in the county, managing the Madera Canal (located east of the Subject Property) for the United States Army Corps of Engineers. A MID water supply ditch is located along the western border of the Subject Property. The majority of the Subject Property is classified by MID as capable of receiving irrigation water from this ditch, although the owner of the Subject Property is not currently under contract to receive MID water (AES, 2004).

There were several agricultural wells with associated pumps, tanks and electrical supply boxes located on the Subject Property (**Section 3.2**). Some wells appeared functional while others appeared to be in a state of disrepair. The Subject Property has been used to grow non-irrigated feed crops for the previous ten years (Whiton, 2005). The residence on the Subject Property is supplied with water through a private well.

## 2.4 GEOLOGY AND SOIL

The rock stratigraphic unit is Cenozoic which is in the Tertiary system in the Pliocene series. The soils in the project area are primarily comprised of Positas sandy loam. Positas sandy loam is characterized as a fine sandy loam with very slow infiltration rates. Positas sandy loam is described as a well-drained soil with an intermediate water holding capacity (EDR, 2004).

## 2.5 DESCRIPTION OF IMPROVEMENTS ON THE SUBJECT PROPERTY

Pete Connelly from AES performed a site reconnaissance of the Subject Property on February 12<sup>th</sup>, 2004 with follow-up visits on February 9<sup>th</sup> and February 10<sup>th</sup>, 2005. **Section 3.0** describes site conditions at the time of the site reconnaissance.

Several agricultural wells and a concrete-watering cistern with associated piping were present on the central/north eastern portion of the Subject Property. A single-family residence with

### 1950 (B)

The 1950 (B) aerial photo shows a majority of the Subject Property with the exception of the southeast corner. Schmit Creek is visible in the photo. Similar to the previous photo, Schmit Creek is inundated with water. There appears to be significant ponding of water in the central and northwest portions of the Subject Property. The buildings that are visible in the previous photo are also visible in this photo. The land uses for outlying areas appear to be agricultural or undeveloped. There is no indication of gross historic hazardous materials involvement on the Subject Property.

### 1972

Due to the small scale of this aerial photo, only a small portion of the Subject Property is visible in the photo. The unimproved roads that cross the Subject Property are visible in the photo. The residence that is currently present on the Subject Property is slightly visible, however due to the resolution of the photo, individual structures are not identifiable. Crop furrows are slightly visible on a portion of the Subject Property. Adjacent properties and outlying areas are agricultural and rural in nature.

### 1981

Similar to 1972, individual structures are not visible on the Subject Property. The 1981 aerial photo is of poor quality. The Subject Property appears as an agricultural parcel. Adjacent properties and outlying areas are similar to previous photos, agricultural and rural in nature.

### 2004

The residence located on the Subject Property, associated buildings, and crop furrows are slightly visible in the 2004 aerial photo (**Figure 3**). The smaller structures that were visible in the 1950 aerial photos are no longer visible in the 2004 aerial photo. The automobile recycler located to the northwest of the Subject Property is also visible in the 2004 aerial photo. Adjacent lands uses are residential and agricultural with vineyards and orchards located on the southern and western borders of the Subject Property.

## 2.8 BUILDING PERMITS

No building permits have been filed for the Subject Property as reported by the Madera County Planning Department (Madera County, 2005).



## ***SECTION 3.0***

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### ***SITE RECONNAISSANCE AND INTERVIEWS***

## SECTION 3.0

### SITE RECONNAISSANCE AND INTERVIEWS

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#### 3.1 OBJECTIVE

The objective of the site reconnaissance was to identify current or historic hazardous materials involvement on the Subject Property or in the vicinity of the Subject Property. Hazardous materials involvement, or signature environmental conditions include the presence or likely presence of any hazardous materials or petroleum products that indicate an existing release, past release, or a threat of release into any structure on the Subject Property, soil, or groundwater. Signs of possible hazardous materials involvement would include any indications of underground storage tanks existing on the Subject Property, stained soils and/or unusual odors originating from the Subject Property, indications of an excavation or removal of soils, including patched asphalt and large debris piles, and other obvious signs of hazardous materials involvement.

Interviews included contacting individuals familiar with the Subject Property and knowledgeable of their historic and existing conditions relative to hazardous materials.

#### 3.2 SITE RECONNAISSANCE FINDINGS

Pete Connelly from AES conducted a site reconnaissance of the Subject Property on February 12, 2004 with follow-up visits on February 9<sup>th</sup> and February 10<sup>th</sup>, 2005. Adjacent properties were observed to the extent possible without encroaching on private property. **Figures 4 through 10** show site conditions at the time of the site visit. Notable features and environmental conditions are summarized below:

- The Subject Property is currently an agricultural parcel (**Photos 1 and 2**).
- What appeared to be a junkyard was present along the northeast border of the Subject Property (**Photo 3**).
- There were several agricultural wells with associated pumps, tanks and electrical supply boxes located on the Subject Property (**Photos 4 through 8**).

- Two 55-gallon drums were observed in an area adjacent to the metal storage building shown in Photo 28. One drum was empty and the other drum contained used oils filters. There were no stained soils in the area of the 55-gallon drums (**Photo 38**).
- A buried telephone cable is present along the northern border of the Subject Property. The cable runs in an east to west direction along Avenue 18 (**Photo 39**).

AES did not observe any obvious signs of gross contamination on the Subject Property during the site reconnaissance visit.

### **ADJACENT PROPERTIES**

Adjacent properties were observed to the extent feasible without trespassing on private property. The purpose is to determine if current/historical adjacent land uses could affect the future uses of the Subject Property. The following list identifies adjacent land uses.

**North:** Private residences, undeveloped parcels, a small auto recycler (northeast border of the Subject Property) and what appeared to be vacant commercial greenhouses.

**South:** Private residences, vineyards, and undeveloped parcels.

**East:** Golden State Boulevard State Route 99.

**West:** Vineyards, orchards, and private residences.

During the site reconnaissance, there did not appear to be any observable adjacent land uses that would affect the planned use of the Subject Property.

### **3.3 INTERVIEWS AND QUESTIONAIRES**

A standard Phase I property owner questionnaire was completed by the property owner's representative during this Phase I ESA (**Appendix D**). AES contacted Madera County Department of Agriculture for more information on pesticide use and disposal for Madera County (Key, 2005). The tenant that currently occupies the Subject Property was interviewed regarding previous land uses on February 9<sup>th</sup> and 10<sup>th</sup>, 2005 (Whilton, 2005). Additionally, AES completed a Bureau of Indian Affairs Contaminant Survey Checklist (**Appendix E**)



**PHOTO 1:** Photo of the northern border of the Subject Property. Photo was taken facing east on Avenue 18.



**PHOTO 2:** Photo of the northern portion of the Subject Property. Photo was taken facing west.



**PHOTO 3:** Photo showing a junkyard that was present along the northeast border of the Subject Property.



**PHOTO 4:** Photo of one of the agricultural wells located on the Subject Property.



**PHOTO 5:** Photo showing mounted electrical supply box associated with the well pictured in photo 3.



**PHOTO 6:** Photo of third agricultural well located on the Subject Property showing the associated tank and electrical supply box.





**PHOTO 7:** Photo showing close-up of one of the electrical supply boxes associated with one of the wells. The boxes for the other wells were similar in their design and condition.



**PHOTO 8:** Photo showing a mounted electrical supply box associated with the well shown in photo 4.



**PHOTO 9:** Photo showing a cattle cistern that was observed on the Subject Property.



**PHOTO 10:** Close-up of the cistern in photo 9, showing standing water.



**PHOTO 11:** Photo showing the tractor that was observed on the Subject Property.



**PHOTO 12:** Close-up of the tractor shown in the previous photo.





**PHOTO 13:** Photo showing the plow located in the vicinity of the tractor in the previous photo.



**PHOTO 14:** Photo showing what appeared to be a cotton picker located adjacent to the tractor shown in photo 12.



**PHOTO 15:** Photo of cattle feeding system



**PHOTO 16:** . Photo showing debris in the cattle feeder from the previous photo.



**PHOTO 17:** Photo showing empty, plastic pesticide containers located in the cattle feeder.



**PHOTO 18:** Close-up of empty, plastic pesticide container marked "MONSANTO" located in the cattle feeder.





**PHOTO 19:** Photo showing uncontained yellow powder located in the cattle feeder.



**PHOTO 20:** Close-up of the uncontained yellow powder shown in the previous photo.



**PHOTO 21:** Photo showing empty five (5) gallon container labeled DONAX TD Fluid (SHELL OIL COMPANY).



**PHOTO 22:** Photo showing various empty containers located in the cattle feeder.



**PHOTO 23:** Photo showing household appliances and other non hazardous debris in the debris pile located on the Subject Property.



**PHOTO 24:** Photo showing wood debris and other materials associated with the non inventoried debris pile.





**PHOTO 25:** Photo showing concrete debris associated with the debris pile in the previous photos.



**PHOTO 26:** Photo showing one of the transformers mounted on one of the power lines that supply the agricultural wells on the property.



**PHOTO 27:** Photo showing the private residence located in the southeast corner of the Subject Property.



**PHOTO 28:** Photo showing the metal storage building located adjacent to the private residence shown in the previous photo.



**PHOTO 29:** Photo showing the boat, jet ski, vehicles, tools and other equipment belonging to the tenant that currently occupies the Subject Property.



**PHOTO 30:** Photo showing fifth wheel trailer located on the Subject Property.





**PHOTO 31:** Photo showing agricultural equipment belonging to the tenant occupying the Subject Property.



**PHOTO 32:** Photo showing more agricultural equipment belonging to the tenant occupying the Subject Property.



**PHOTO 33:** Photo showing tractors and more equipment belonging to the tenant occupying the Subject Property.



**PHOTO 34:** Photo showing travel trailer and tractor trailer located in the area adjacent to the private residence.





**PHOTO 35:** Photo showing an approximate 500-gallon gasoline above ground storage tank. The tank belongs to the current tenant occupying the Subject Property.



**PHOTO 37:** Photo showing pasture area located adjacent to the barn shown in the previous photo.



**PHOTO 39:** Photo showing markers for the buried telephone cables along the northern border of the Subject Property along Avenue 18.



**PHOTO 36:** Photo showing the barn, horse and sheep, and corral.



**PHOTO 38:** Photo showing used oil filters in a 55-gallon drum. The drums are located adjacent to the metal storage building shown in photo 28. The drum in the background was empty.

## ***SECTION 4.0***

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### ***RECORDS REVIEW***



## SECTION 4.0

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### RECORDS REVIEW

#### 4.1 DATABASE SEARCH

Database searches were conducted for records of known storage tank sites and known sites of hazardous materials generation, storage, or contamination. Databases were searched for sites and listings up to two miles from a point roughly equivalent to the center of the Subject Property. The environmental database review was accomplished by using the services of a computerized search firm *Environmental Data Resources, Inc.* (EDR). The complete list of reviewed databases is provided in the EDR report, included in **Appendix C** and is summarized in **Table 1**.

Included in the EDR database report was a list of "unmapped sites". AES reviewed the list of unmapped sites for the properties that may be located within the search radius specified for each governmental database. These sites do not appear to be located within the applicable search radius of the Subject Property. It should be noted that the database search is only as accurate as the data entered into the government agency maintained databases and the date on which those databases were last updated. Installation of underground storage tanks or hazardous material releases, if not reported to the appropriate agency, would not be listed on any of the databases searched. The following section reviews the previously mentioned database search and all follow-up communications with local agencies and individuals. The following table summarizes the public databases that were searched as part of this Phase I ESA.

#### 4.2 HAZARDOUS MATERIALS INVOLVEMENT

##### 4.2.1 SUBJECT PROPERTY

The Subject Property did not appear on any database searched by EDR as having hazardous materials involvement (EDR, 2005).

##### 4.2.2 ADJACENT PROPERTIES

The database search located five sites within a one-mile search radius with known history of storage, use, and/or release of hazardous materials. The AICO Madera site is located adjacent to

**TABLE 2**  
**ENVIRONMENTAL DATA RESOURCES (EDR) SUMMARY OF AGENCY DATABASES**

Agency Database	Survey Distance	Number of Sites Identified
United States Environmental Protection Agency (EPA) National Priority List (NPL) for Superfund Sites	2.0 Miles	0
U.S. EPA Resource Conservation and Recovery Act (RCRA) Corrective Action (CORRACTS) List	2.0 Miles	0
U.S. EPA Comprehensive Environmental Response, Compensation and Liability Index System (CERCLIS) List	1.5 Mile	0
U.S. EPA RCRA Permitted Treatment, Storage, and Disposal (TSD) Facilities	1.5 Mile	0
U.S. EPA Emergency Response Notification System (ERNS) List	1.0 Mile	0
U.S. EPA RCRA Registered Large and Small Generators of Hazardous Waste	1.25 Mile	0
Annual Workplan Sites (AWP)	2.0 Miles	0
State Hazardous Wastes Sites (Cal-Sites)	2.0 Miles	0
State Hazardous Wastes and Substances Sites (Cortese)	1.0 Mile	0
State Hazardous Material Incidents, Including Accidental Releases and Spills (CHMIRS)	1.0 Mile	0
State Permitted Solid Waste Landfill, Incinerators or Transfer Stations (SWF/LF) List	1.5 Mile	0
Leaking Underground Storage Tank (LUST) Sites	1.5 Mile	0
State Facility Inventory Database Underground Storage Tank (CA FID UST)	1.25 Mile	1
State Bond Expedite Plan	2.0 Mile	1
Hazardous Waste Information System (HAZNET)	1.0 Mile	4

Source: Environmental Data Resources, 2005

the Subject Property at 17486 Road 23. The AICO Madera site is listed on the HAZNET database as producing .0208 tons of off-specification, aged, or surplus organics. The organics are removed off-site for recycling. The Madera Municipal Golf Course site is located approximately 0.30-miles south of the Subject Property at 23200 Avenue 17. The Golf Course site is listed on the HAZNET database as having a treatment tank that treats an aqueous solution with less than 10% total organic residues. The Andrew Tahan site is located approximately 0.45-miles south of the Subject Property at 23783 Avenue 17. The Andrew Tahan site is listed on the HAZNET database as producing 2.53 tons of asbestos containing wastes that were transferred to a landfill. The Valley Grains Products, Inc site is located approximately 0.75 miles west of the Subject

Property at 23865 Avenue 18. The Valley Grains Products Inc site is listed on the California Facility Inventory Database (CA FID UST) as the location of an inactive underground storage tank. The EDR report did not list any reported leaks or spills associated with the Valley Grains Products Inc site. The A-Z Manufacturing site is located approximately 0.75-miles west of the Subject Property at 17462 Baldwin Street. The A-Z Manufacturing site is listed on the HAZNET database as producing .1485 tons of oxygenated solvents that are removed off site to a transfer station. None of the previously mentioned sites that were listed in the EDR report are likely to affect the planned uses of the Subject Property.

## ***SECTION 5.0***

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### ***FINDINGS AND CONCLUSIONS***

## SECTION 5.0

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### FINDINGS AND CONCLUSIONS

This Phase I ESA was performed in conformance with the scope and limitations of ASTM Standard Practice E1527-00, which specifies the appropriate inquiry requirements for the innocent landowner defense under CERCLA. Based on information reviewed, AES's site reconnaissance of the Subject Property and adjacent properties, and the interviews and questionnaires described, the following general observations were made:

- The Subject Property has historically been used for agriculture. There are several pieces of agricultural equipment currently present on the property. Most of the equipment appears nonfunctional.
- An uncontained yellow powder is present in a cattle feeder located on the Subject Property. The powder is elemental sulfur that is commonly used as a fungicide (Key, 2005) on grape crops. The powder can also be used as an insect repellant on cattle.
- Two 55-gallon drums were observed in an area adjacent to a metal storage building on the Subject Property. One of the drums was empty; the other drum was full of used oil filters from farming equipment.
- An approximate 500-gallon above ground storage tank was present adjacent to the residence located on the Subject Property. The tank was empty during the site reconnaissance visit.
- There were several large debris piles located on the Subject Property. The debris piles were visually inspected, and appears that the debris is comprised mostly of non-hazardous wastes including appliances, wood debris and household waste.
- There are several agricultural wells with associated piping and electrical supply boxes located on the Subject Property.



Based on the findings and conclusions of this Phase I ESA, AES has the following recommendations:

- The sulfur in the cattle feeder should be removed and disposed according to State and local regulations. Alternatively, the property owner can contact a local grape vineyard to determine if the sulfur can be utilized on the grape crops.
- The used oil filters in the 55-gallon drum should be removed and disposed of properly.
- The empty 500-gallon above ground storage tank should be removed from the Subject Property.
- All abandoned agricultural wells with associated piping and electrical supply boxes should be abandoned in accordance with State and local regulations.

There were no indications of improper hazardous materials involvement on the Subject Property. Based on information gathered during this Phase I ESA, AES has determined that no RECs exist on the Subject Property and no further studies are recommended.

## **SECTION 6.0**

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*REPORT AUTHORS/ REFERENCES*

## **SECTION 6.0**

### **REPORT AUTHORS AND REFERENCES**

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#### **REPORT PREPARATION**

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Sacramento, CA 95814

Author: \_\_\_\_\_  
Peter J. Connelly, Associate

Review: \_\_\_\_\_  
David Zweig, P.E.

#### **REFERENCES**

American Society for Testing and Materials (ASTM). 2001. Practice E1527-00: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process."

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Madera County. 2005. Madera County Planning Department. Telephone interview March 11<sup>th</sup>, 2005. Telephone (559) 661-6333.

Shaw, Russ. 2005. Owner's representative. Telephone interview February 15<sup>th</sup> and 23<sup>rd</sup>, 2005. Telephone (520) 906-4984.

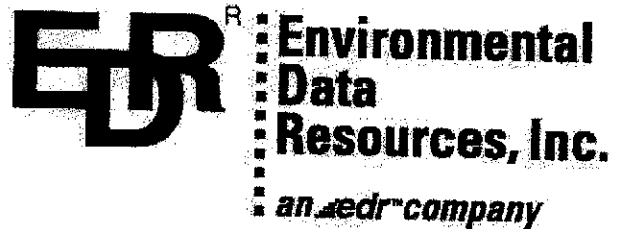
Wilton, Skip. 2005. On site interview, February 9<sup>th</sup> and 10<sup>th</sup>, 2005. Tenant for the Subject Property. 17488 Golden State Blvd, Madera CA..

# ***APPENDIX A***

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## ***HISTORICAL AERIAL PHOTOGRAPHS***





**The EDR-Aerial Photography  
Print Service**

North Fork Site  
Avenue 18  
Madera, CA 93637

February 9, 2004

Inquiry Number: 1123968-6

**The Source  
For Environmental  
Risk Management  
Data**

3530 Post Road  
Southport, Connecticut 06490

**Nationwide Customer Service**

Telephone: 1-800-352-0050  
Fax: 1-800-231-6802

## Environmental Data Resources, Inc.

### Aerial Photography Print Service

Environmental Data Resources, Inc.'s (EDR) Aerial Photography Print Service is a screening tool designed to assist professionals in evaluating potential liability on a target property resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources*. *Reasonably ascertainable* means information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.2, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-00 requires "All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful." (ASTM E 1527-00, Section 7.3.2, page 11).

#### Aerial Photographs

Aerial photographs are a valuable historical resource for documenting past land use and can be particularly helpful when other historical sources (such as city directories or fire insurance maps) are not reasonably ascertainable. The EDR Aerial Photograph Print Service includes a search of aerial photograph collections flown by public and private agencies for the state of California. EDR's professional field-based researchers provide digitally reproduced historical aerial photographs at approximately ten year intervals.

Please call EDR Nationwide Customer Service at  
1-800-352-0050 (8a.m-8pm EST)  
with questions or comments about your report.  
*Thank you for your business!*

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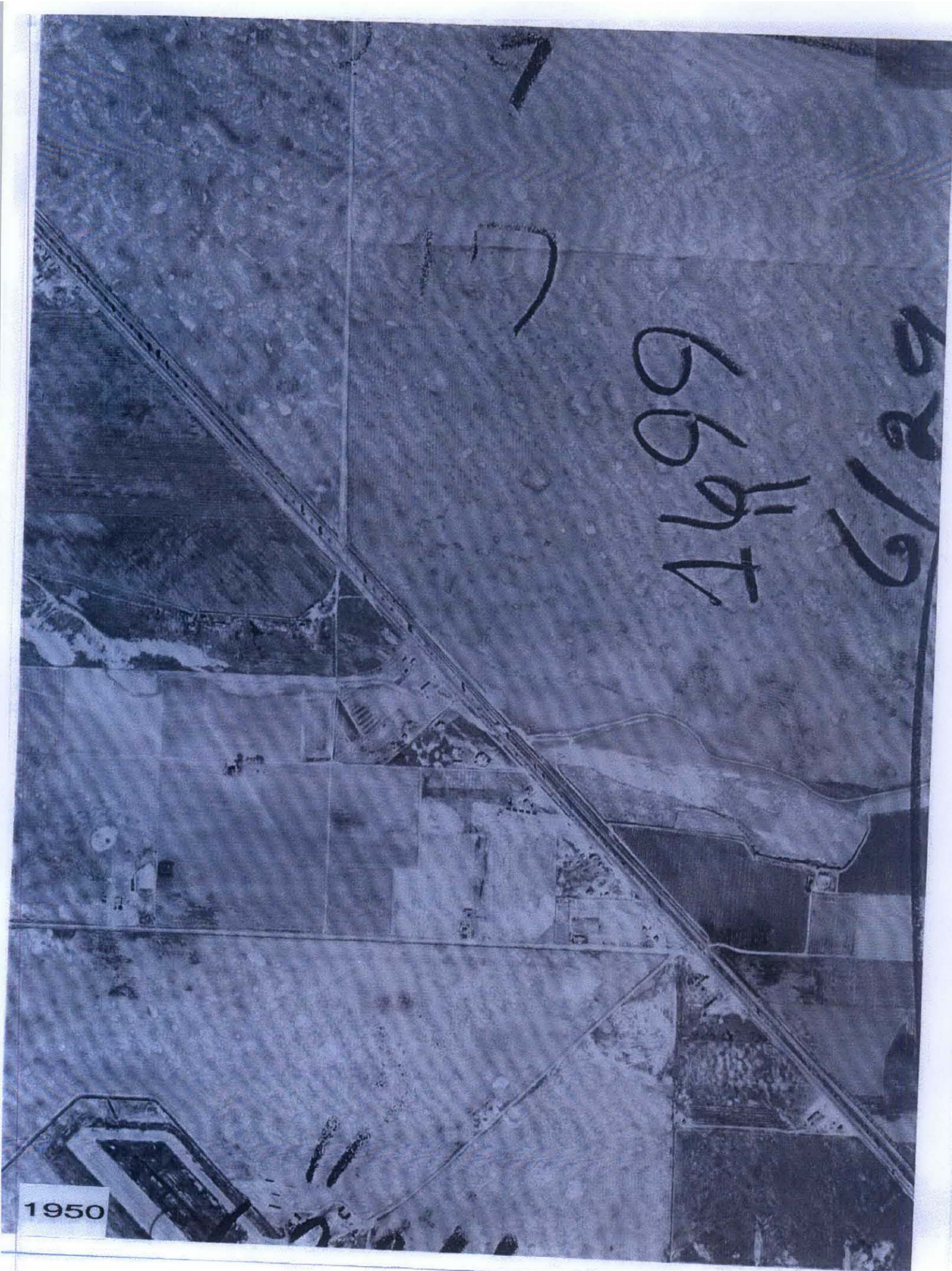
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# ***APPENDIX A***

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## ***HISTORICAL AERIAL PHOTOGRAPHS***





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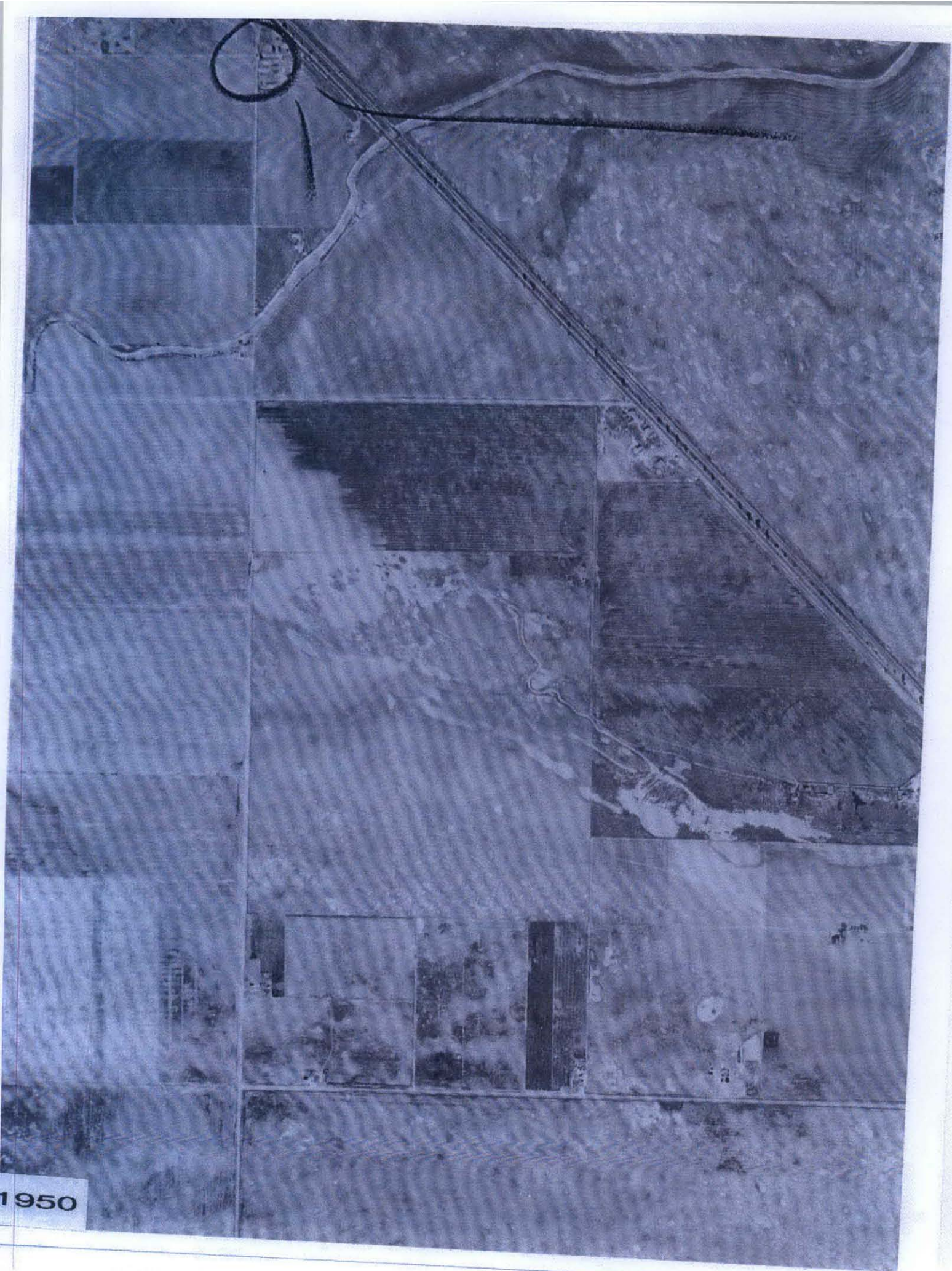
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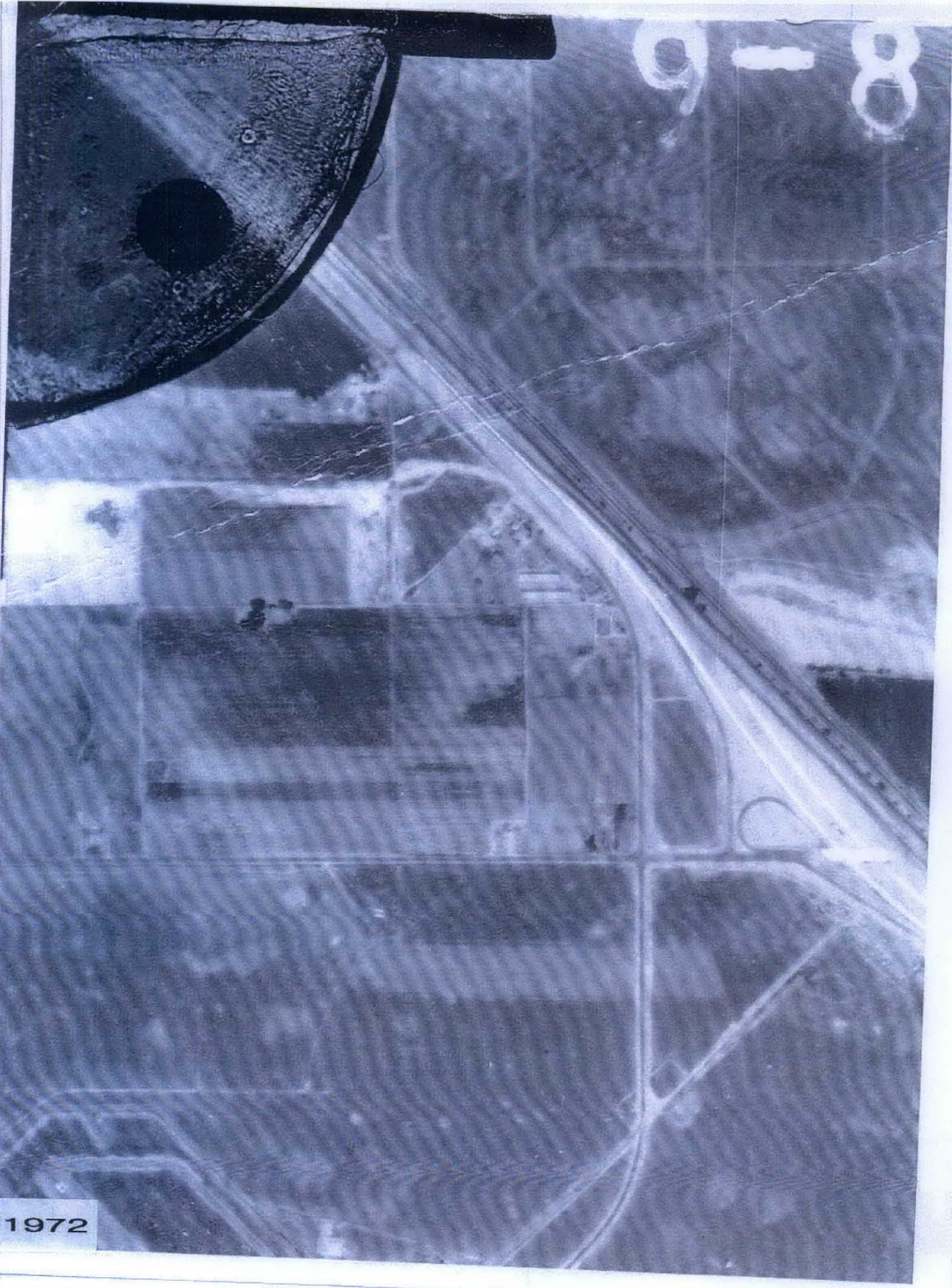




1981



9-8



1972

# ***APPENDIX B***

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## ***HISTORICAL TOPOGRAPHIC MAPS***



**The EDR-Historical  
Topographic Map  
Report**

**North Ranch Property  
25074 Avenue 18.5  
Madera, CA 93638**

**February 12, 2004**

**Inquiry Number: 1127294-5**

**The Source  
For Environmental  
Risk Management  
Data**

**3530 Post Road  
Southport, Connecticut 06490**

**Nationwide Customer Service**

**Telephone: 1-800-352-0050  
Fax: 1-800-231-6802**



## **Environmental Data Resources, Inc. Historical Topographic Map Report**

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property, and its surrounding area, resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources*. *Reasonably ascertainable is defined as information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.*

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, city directories, fire insurance maps, topographic maps, property tax files, land title records (although these cannot be the sole historical source consulted), building department records, or zoning/and use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2 page 12.)

EDR's Historical Topographic Map Report includes a search of available public and private color historical topographic map collections.

### **Topographic Maps**

A topographic map (topo) is a color coded line-and-symbol representation of natural and selected artificial features plotted to a scale. Topos show the shape, elevation, and development of the terrain in precise detail by using contour lines and color coded symbols. Many features are shown by lines that may be straight, curved, solid, dashed, dotted, or in any combination. The colors of the lines usually indicate similar classes of information. For example, topographic contours (brown); lakes, streams, irrigation ditches, etc. (blue); land grids and important roads (red); secondary roads and trails, railroads, boundaries, etc. (black); and features that have been updated using aerial photography, but not field verified, such as disturbed land areas (e.g., gravel pits) and newly developed water bodies (purple).

For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topo maps covering the United States. Each map covers a specific quadrangle (quad) defined as a four-sided area bounded by latitude and longitude. Historical topographic maps are a valuable historical resource for documenting the prior use of a property and its surrounding area, and due to their frequent availability can be particularly helpful when other standard historical sources (such as city directories, fire insurance maps, or aerial photographs) are not reasonably ascertainable.



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*Thank you for your business!*

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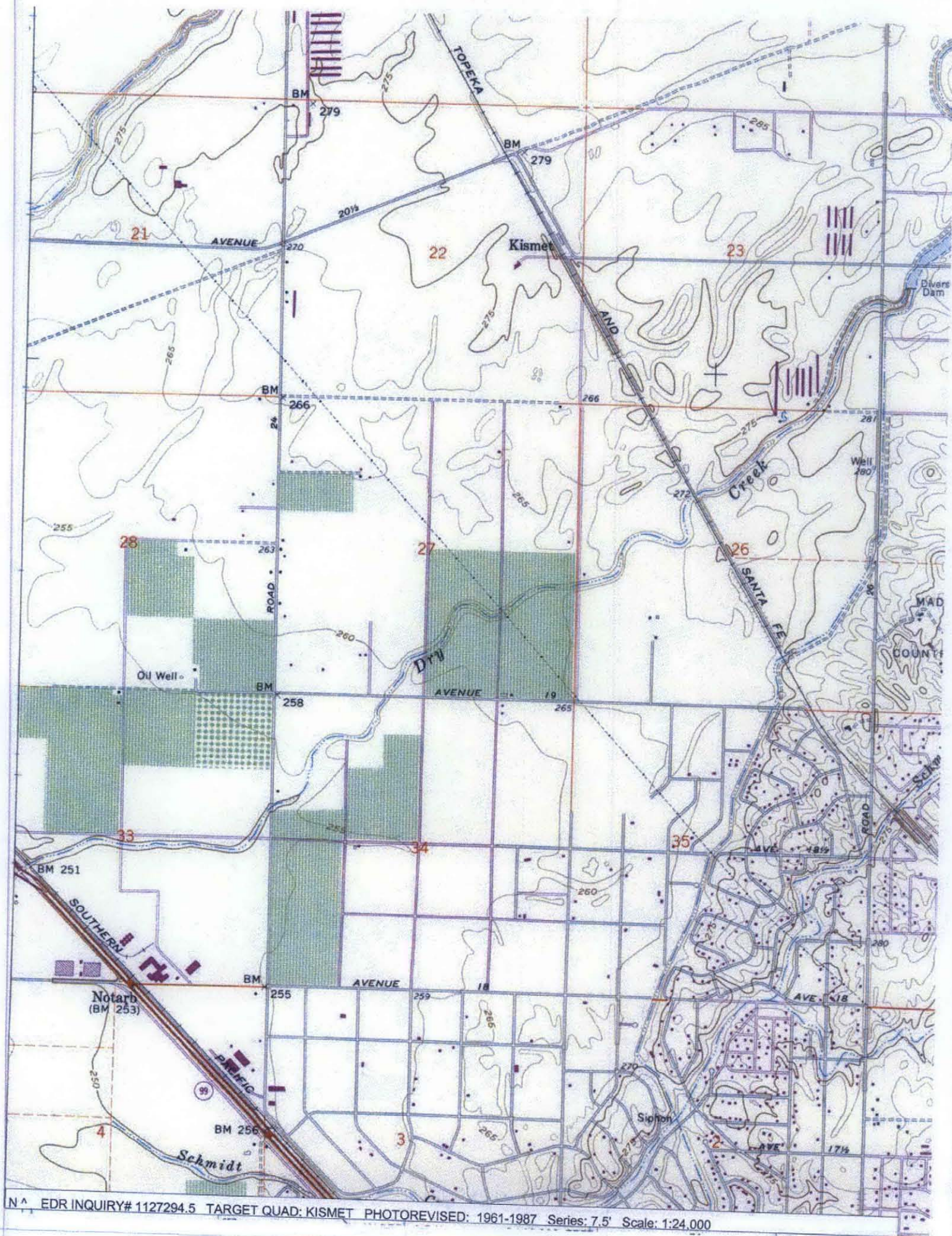
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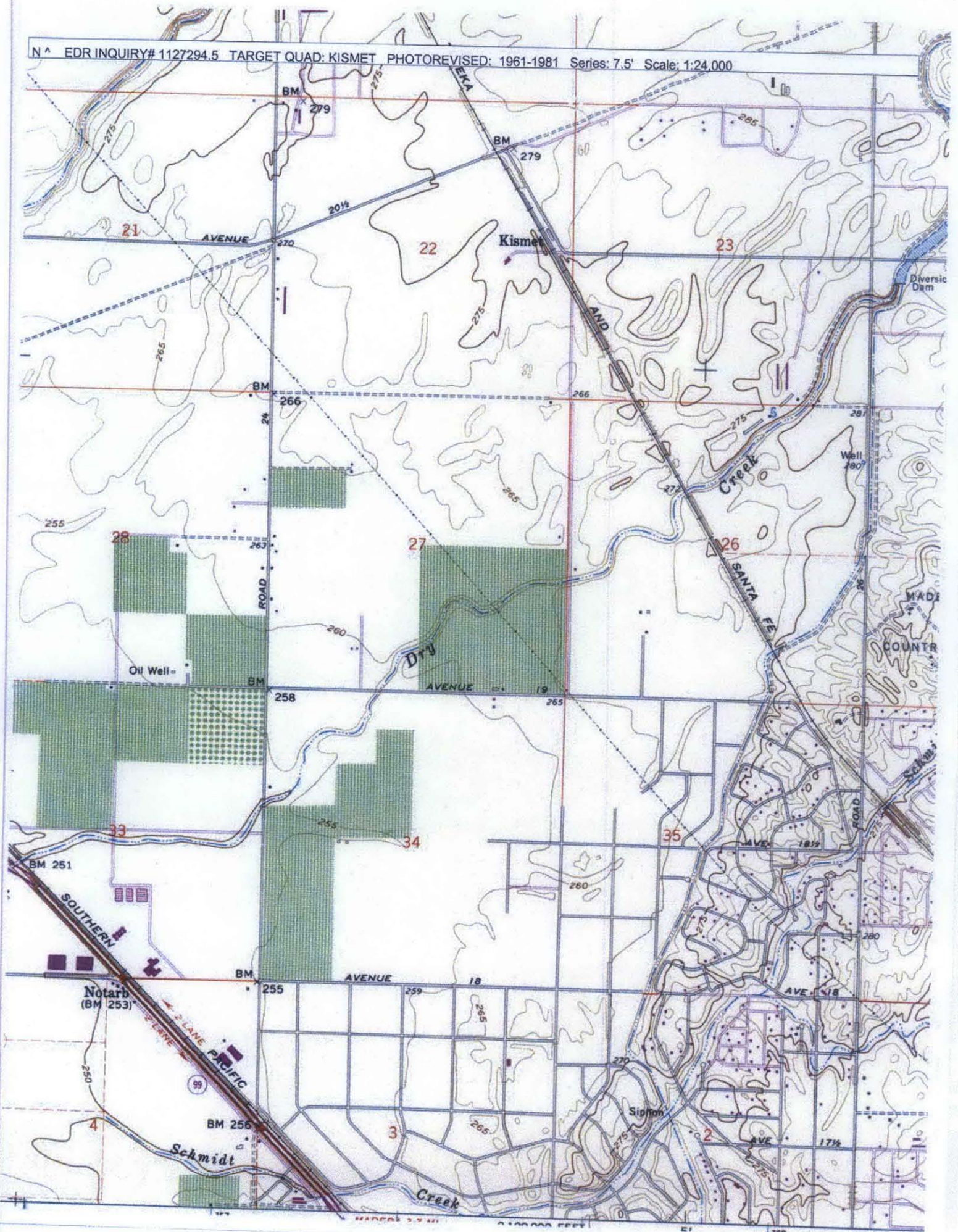
N ^ EDR INQUIRY# 1127294.5 ADJOINING QUAD: BERENDA PHOTOREVISED: 1961-1987 Series: 7.5' Scale: 1:24,000

The map shows a topographic view of the Berenda area in Louisiana. Key features include:

- Railways:** The Southern Railway and Pacific Railway are shown as prominent diagonal lines crossing the map.
- Water Features:** Berenda Creek flows through the center, and Dixieland Creek is visible in the lower right. A dry creek bed is also marked.
- Roads and Avenues:** Berenda Avenue runs horizontally across the middle. Other roads include Dixieland Road and various numbered roads (e.g., 1, 4, 5, 6, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 36).
- Landmarks and Infrastructure:** Storage Bins, Wells (e.g., Well 234, 239, 242, 243, 248, 249), a Borrow Pit, and several Ditches are indicated.
- Topography:** Contour lines show elevation changes, with peaks reaching up to 268 feet.
- Map Details:** The map includes a title block at the top left with the EDR Inquiry number, quad name, photorevision date, series, and scale. It also features a grid system with numbers 1 through 36 and letters A through Z.



N ^ EDR INQUIRY# 1127294.5 TARGET QUAD: KISMET PHOTOREVISED: 1961-1981 Series: 7.5' Scale: 1:24,000









N ^ EDR INQUIRY# 1127294.5 TARGET QUAD: KISMET YEAR: 1961 Series: 7.5' Scale: 1:24,000





N ^ EDR INQUIRY# 1127294.5 TARGET QUAD: KISMET YEAR: 1920 Series: 7.5' Scale: 1:31,680

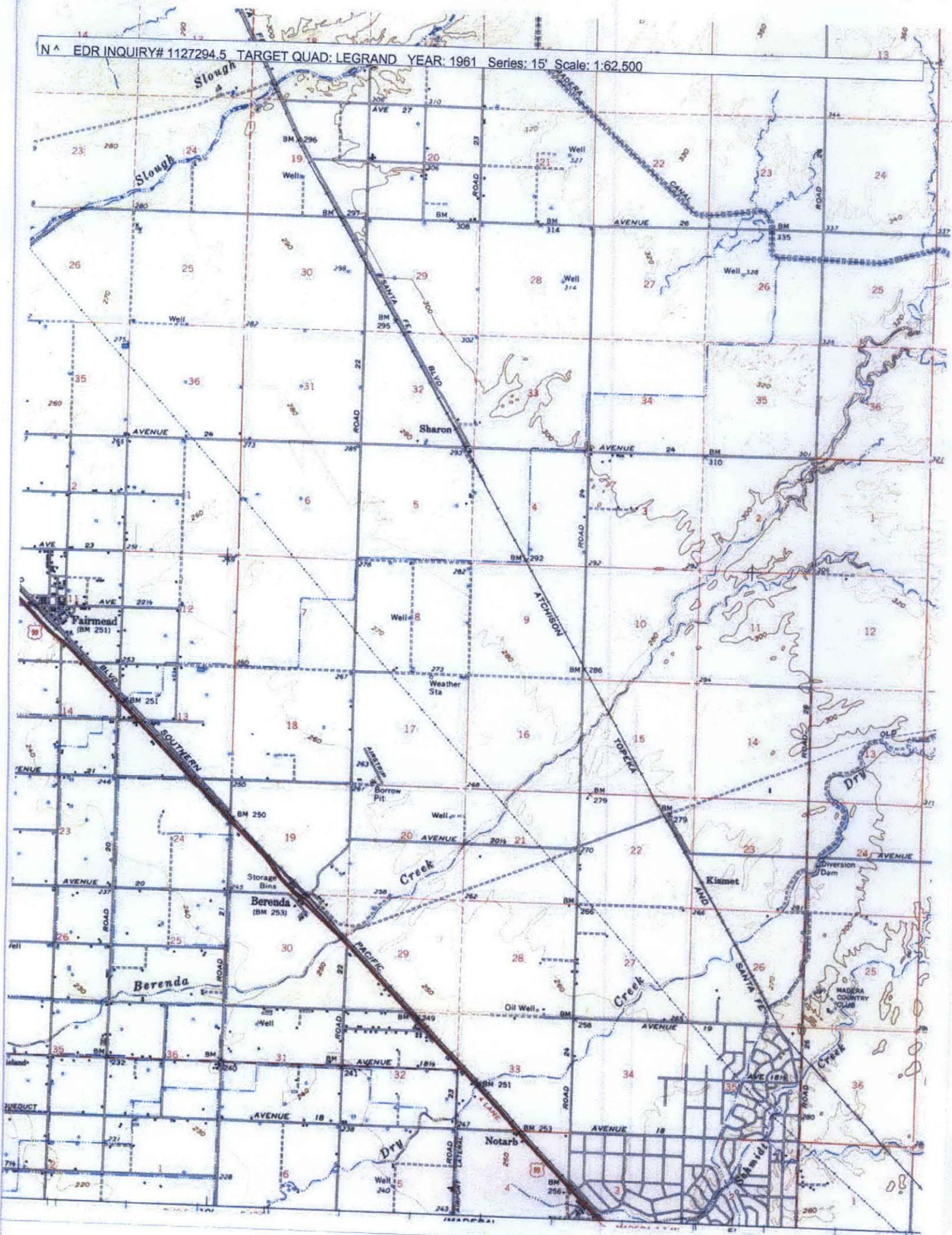


N^ EDR INQUIRY# 1127294.5 ADJOINING QUAD: BERENDA YEAR: 1961 Series: 7.5' Scale: 1:24,000

Well 254 256 261 263 265 267 269 271 273 275 277 279 281 283 285 287 289 291 293 295 297 299 301 303 305 307 309 311 313 315 317 319 321 323 325 327 329 331 333 335 337 339 341 343 345 347 349 351 353 355 357 359 361 363 365 367 369 371 373 375 377 379 381 383 385 387 389 391 393 395 397 399 401 403 405 407 409 411 413 415 417 419 421 423 425 427 429 431 433 435 437 439 441 443 445 447 449 451 453 455 457 459 461 463 465 467 469 471 473 475 477 479 481 483 485 487 489 491 493 495 497 499 501 503 505 507 509 511 513 515 517 519 521 523 525 527 529 531 533 535 537 539 541 543 545 547 549 551 553 555 557 559 561 563 565 567 569 571 573 575 577 579 581 583 585 587 589 591 593 595 597 599 601 603 605 607 609 611 613 615 617 619 621 623 625 627 629 631 633 635 637 639 641 643 645 647 649 651 653 655 657 659 661 663 665 667 669 671 673 675 677 679 681 683 685 687 689 691 693 695 697 699 701 703 705 707 709 711 713 715 717 719 721 723 725 727 729 731 733 735 737 739 741 743 745 747 749 751 753 755 757 759 761 763 765 767 769 771 773 775 777 779 781 783 785 787 789 791 793 795 797 799 801 803 805 807 809 811 813 815 817 819 821 823 825 827 829 831 833 835 837 839 841 843 845 847 849 851 853 855 857 859 861 863 865 867 869 871 873 875 877 879 881 883 885 887 889 891 893 895 897 899 901 903 905 907 909 911 913 915 917 919 921 923 925 927 929 931 933 935 937 939 941 943 945 947 949 951 953 955 957 959 961 963 965 967 969 971 973 975 977 979 981 983 985 987 989 991 993 995 997 999 1001 1003 1005 1007 1009 1011 1013 1015 1017 1019 1021 1023 1025 1027 1029 1031 1033 1035 1037 1039 1041 1043 1045 1047 1049 1051 1053 1055 1057 1059 1061 1063 1065 1067 1069 1071 1073 1075 1077 1079 1081 1083 1085 1087 1089 1091 1093 1095 1097 1099 1101 1103 1105 1107 1109 1111 1113 1115 1117 1119 1121 1123 1125 1127 1129 1131 1133 1135 1137 1139 1141 1143 1145 1147 1149 1151 1153 1155 1157 1159 1161 1163 1165 1167 1169 1171 1173 1175 1177 1179 1181 1183 1185 1187 1189 1191 1193 1195 1197 1199 1201 1203 1205 1207 1209 1211 1213 1215 1217 1219 1221 1223 1225 1227 1229 1231 1233 1235 1237 1239 1241 1243 1245 1247 1249 1251 1253 1255 1257 1259 1261 1263 1265 1267 1269 1271 1273 1275 1277 1279 1281 1283 1285 1287 1289 1291 1293 1295 1297 1299 1301 1303 1305 1307 1309 1311 1313 1315 1317 1319 1321 1323 1325 1327 1329 1331 1333 1335 1337 1339 1341 1343 1345 1347 1349 1351 1353 1355 1357 1359 1361 1363 1365 1367 1369 1371 1373 1375 1377 1379 1381 1383 1385 1387 1389 1391 1393 1395 1397 1399 1401 1403 1405 1407 1409 1411 1413 1415 1417 1419 1421 1423 1425 1427 1429 1431 1433 1435 1437 1439 1441 1443 1445 1447 1449 1451 1453 1455 1457 1459 1461 1463 1465 1467 1469 1471 1473 1475 1477 1479 1481 1483 1485 1487 1489 1491 1493 1495 1497 1499 1501 1503 1505 1507 1509 1511 1513 1515 1517 1519 1521 1523 1525 1527 1529 1531 1533 1535 1537 1539 1541 1543 1545 1547 1549 1551 1553 1555 1557 1559 1561 1563 1565 1567 1569 1571 1573 1575 1577 1579 1581 1583 1585 1587 1589 1591 1593 1595 1597 1599 1601 1603 1605 1607 1609 1611 1613 1615 1617 1619 1621 1623 1625 1627 1629 1631 1633 1635 1637 1639 1641 1643 1645 1647 1649 1651 1653 1655 1657 1659 1661 1663 1665 1667 1669 1671 1673 1675 1677 1679 1681 1683 1685 1687 1689 1691 1693 1695 1697 1699 1701 1703 1705 1707 1709 1711 1713 1715 1717 1719 1721 1723 1725 1727 1729 1731 1733 1735 1737 1739 1741 1743 1745 1747 1749 1751 1753 1755 1757 1759 1761 1763 1765 1767 1769 1771 1773 1775 1777 1779 1781 1783 1785 1787 1789 1791 1793 1795 1797 1799 1801 1803 1805 1807 1809 1811 1813 1815 1817 1819 1821 1823 1825 1827 1829 1831 1833 1835 1837 1839 1841 1843 1845 1847 1849 1851 1853 1855 1857 1859 1861 1863 1865 1867 1869 1871 1873 1875 1877 1879 1881 1883 1885 1887 1889 1891 1893 1895 1897 1899 1901 1903 1905 1907 1909 1911 1913 1915 1917 1919 1921 1923 1925 1927 1929 1931 1933 1935



N A EDR INQUIRY# 1127294.5 TARGET QUAD: LEGRAND YEAR: 1961 Series: 15' Scale: 1:62,500



# ***APPENDIX C***

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## ***DATABASE REPORT***





**EDR™** Environmental  
Data Resources Inc

## **The EDR Radius Map with GeoCheck®**

**North Fork Site  
17488 Golden State Blvd  
Madera, CA 93637**

**Inquiry Number: 01359424.1r**

**February 11, 2005**

## **The Standard in Environmental Risk Management Information**

**440 Wheelers Farms Road  
Milford, Connecticut 06460**

### **Nationwide Customer Service**

**Telephone: 1-800-352-0050  
Fax: 1-800-231-6802  
Internet: [www.edrnet.com](http://www.edrnet.com)**

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Physical Setting Source Summary.....	A-2
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***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

### TARGET PROPERTY INFORMATION

#### ADDRESS

17488 GOLDEN STATE BLVD  
MADERA, CA 93637

#### COORDINATES

Latitude (North): 37.004900 - 37° 0' 17.6"  
Longitude (West): 120.121400 - 120° 7' 17.0"  
Universal Transverse Mercator: Zone 10  
UTM X (Meters): 756146.2  
UTM Y (Meters): 4099087.5  
Elevation: 252 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 37120-A1 KISMET, CA  
Source: USGS 7.5 min quad index

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ( "reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

### FEDERAL ASTM STANDARD

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned  
CORRACTS..... Corrective Action Report  
RCRA-TSDF..... Resource Conservation and Recovery Act Information  
ERNS..... Emergency Response Notification System

### STATE ASTM STANDARD

AWP..... Annual Workplan Sites

## **EXECUTIVE SUMMARY**

<b>Cal-Sites</b> .....	Calsites Database
<b>CHMIRS</b> .....	California Hazardous Material Incident Report System
<b>Notify 65</b> .....	Proposition 65 Records
<b>Toxic Pits</b> .....	Toxic Pits Cleanup Act Sites
<b>SWF/LF</b> .....	Solid Waste Information System
<b>UST</b> .....	List of Underground Storage Tank Facilities
<b>VCP</b> .....	Voluntary Cleanup Program Properties
<b>INDIAN LUST</b> .....	Leaking Underground Storage Tanks on Indian Land
<b>INDIAN UST</b> .....	Underground Storage Tanks on Indian Land

### **FEDERAL ASTM SUPPLEMENTAL**

<b>CONSENT</b> .....	Superfund (CERCLA) Consent Decrees
<b>ROD</b> .....	Records Of Decision
<b>Delisted NPL</b> .....	National Priority List Deletions
<b>HMIRS</b> .....	Hazardous Materials Information Reporting System
<b>MLTS</b> .....	Material Licensing Tracking System
<b>MINES</b> .....	Mines Master Index File
<b>NPL Liens</b> .....	Federal Superfund Liens
<b>PADS</b> .....	PCB Activity Database System
<b>ODI</b> .....	Open Dump Inventory
<b>DOD</b> .....	Department of Defense Sites
<b>INDIAN RESERV</b> .....	Indian Reservations
<b>UMTRA</b> .....	Uranium Mill Tailings Sites
<b>FUDS</b> .....	Formerly Used Defense Sites
<b>RAATS</b> .....	RCRA Administrative Action Tracking System
<b>TRIS</b> .....	Toxic Chemical Release Inventory System
<b>TSCA</b> .....	Toxic Substances Control Act
<b>SSTS</b> .....	Section 7 Tracking Systems
<b>FTTS INSP</b> .....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

### **STATE OR LOCAL ASTM SUPPLEMENTAL**

<b>AST</b> .....	Aboveground Petroleum Storage Tank Facilities
<b>CLEANERS</b> .....	Cleaner Facilities
<b>DEED</b> .....	Deed Restriction Listing
<b>NFA</b> .....	No Further Action Determination
<b>NFE</b> .....	Properties Needing Further Evaluation
<b>SCH</b> .....	School Property Evaluation Program

### **EDR PROPRIETARY HISTORICAL DATABASES**

<b>Coal Gas</b> .....	Former Manufactured Gas (Coal Gas) Sites
-----------------------	--

### **BROWNFIELDS DATABASES**

<b>US BROWNFIELDS</b> .....	A Listing of Brownfields Sites
<b>VCP</b> .....	Voluntary Cleanup Program Properties

### **SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified.

## EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### FEDERAL ASTM STANDARD

**CERCLIS:** The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 12/14/2004 has revealed that there is 1 CERCLIS site within approximately 1.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b><i>MADERA MUNI ARPT</i></b>	<b><i>4020 AVIATION DR</i></b>	<b><i>1 - 2 SE</i></b>	<b><i>D15</i></b>	<b><i>20</i></b>

**RCRAInfo:** RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act ( RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 11/23/2004 has revealed that there is 1 RCRA-LQG site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b><i>MOORE QUALITY GALVANIZING</i></b>	<b><i>3001 FALCON DRIVE</i></b>	<b><i>1 - 2 SE</i></b>	<b><i>16</i></b>	<b><i>21</i></b>

**RCRAInfo:** RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act ( RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective



## EXECUTIVE SUMMARY

information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 11/23/2004 has revealed that there is 1 RCRA-SQG site within approximately 1.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>CENTRAL CALIFORNIA KENWORTH</b>	<b>22615 AVE 18 1/2</b>	<b>1 - 2 NNW 12</b>		<b>14</b>

### STATE ASTM STANDARD

**CORTESE:** This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 2 Cortese sites within approximately 1.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b>	<b>4020 AVIATION DR</b>	<b>1 - 2 SE D13</b>		<b>15</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>TOP DIESEL REPAIR, INC.</b>	<b>22615 AVE 18-1/2</b>	<b>1 - 2 NNW 10</b>		<b>12</b>

**WMUDS/SWAT:** The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, has revealed that there is 1 WMUDS/SWAT site within approximately 1.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b>	<b>4020 AVIATION DR</b>	<b>1 - 2 SE D13</b>		<b>15</b>

**LUST:** The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 10/13/2004 has revealed that there are 2 LUST sites within approximately 1.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b>	<b>4020 AVIATION DR</b>	<b>1 - 2 SE D13</b>		<b>15</b>

## EXECUTIVE SUMMARY

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>TOP DIESEL REPAIR, INC.</b>	<b>22615 AVE 18-1/2</b>	<b>1 - 2    NNW</b>	<b>10</b>	<b>12</b>

**BEP:** Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, has revealed that there is 1 CA BOND EXP. PLAN site within approximately 2 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>MADERA MUNICIPAL AIRPORT</b>	<b>4020 AVIATION DR</b>	<b>1 - 2    SE</b>	<b>D13</b>	<b>15</b>

**CA FID:** The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there is 1 CA FID UST site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>VALLEY GRAIN PRODUCTS, INC.</b>	<b>23865 AVENUE 18</b>	<b>1/2 - 1    NE</b>	<b>A4</b>	<b>7</b>

**HIST UST:** Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
PIPCO INC.	18485 ROAD 24	1/2 - 1    NE	8	10
AIRPORT FUEL FACILITY	4020 AVIATION DR	1 - 2    SE	D14	20
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
OSEPH PITACCHIO	22517 AVENUE 18 1/2	1 - 2    WNW	C9	11
FREEMAN E BROOKS	22497 AVENUE 18 1/2	1 - 2    WNW	C11	13

### FEDERAL ASTM SUPPLEMENTAL

**FINDS:** The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this

## EXECUTIVE SUMMARY

database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 09/09/2004 has revealed that there is 1 FINDS site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
A-Z MANUFACTURING	17462 BALDWIN STREET	1/2 - 1 E	B6	9

### STATE OR LOCAL ASTM SUPPLEMENTAL

**WDS:**California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 12/20/2004 has revealed that there is 1 CA WDS site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
VALLEY GRAIN PRODUCTS	23865 AVENUE 18	1/2 - 1 NE	A5	7

**REF:** This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

A review of the REF list, as provided by EDR, and dated 11/09/2004 has revealed that there is 1 REF site within approximately 1.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MADERA MUNICIPAL AIRPORT	4020 AVIATION DR	1 - 2 SE	D13	15

**Emissions Inventory Data:**Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2002 has revealed that there is 1 EMI site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
VALLEY GRAIN PRODUCTS	23865 AVENUE 18	1/2 - 1 NE	A5	7

**CA SLIC:** SLIC Region comes from the California Regional Water Quality Control Board.

A review of the CA SLIC list, as provided by EDR, has revealed that there is 1 CA SLIC site within approximately 1.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MADERA MUNICIPAL AIRPORT	4020 AVIATION DR	1 - 2 SE	D13	15

## EXECUTIVE SUMMARY

**HAZNET:** The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2002 has revealed that there are 5 HAZNET sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MADERA MUNICIPAL GOLF COURSE	23200 AVENUE 17	1/2 - 1 SSW	2	6
ANDREW TAHAN	23783 AVE 17	1/2 - 1 SSE	3	7
<b>VALLEY GRAIN PRODUCTS</b>	<b>23865 AVENUE 18</b>	<b>1/2 - 1 NE</b>	<b>A5</b>	<b>7</b>
AZ MANUFACTURING	17462 BALDWIN ST	1/2 - 1 E	B7	10
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
A I C O MADERA	17486 ROAD 23	1/4 - 1/2 WSW	1	6

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
MELIKIAN FARMS, INC.	LUST, Cortese
HAWS FARMS	LUST, Cortese
DIXIELAND SCHOOL	LUST, Cortese
ROBERTS	LUST, Cortese
LAVINA RANCH	LUST, Cortese
M.U.S.T. CENTER	LUST, Cortese
MADERA PUMP INC.	LUST, Cortese
DOMRIES INTERPRISES INC.	LUST, Cortese
CAL YORK RANCHES	LUST, Cortese
SHOP-N-GO #598	LUST, Cortese
SHOP N GO	LUST, Cortese
41 RANCH	LUST, Cortese
HOME RANCH	LUST, Cortese
FAIRMEAD DSPL SITE	CERC-NFRAP
PG&E GAS PLANT MADERA	CERC-NFRAP
MIREX-CONTAMINATED AIRCRAFT	CERC-NFRAP
YEH WTS	SWF/LF
RAYMOND ROAD TIRE SITE	SWF/LF
MADERA CITY DUMP	SWF/LF
SAN JOAQUIN HWY 99 BUSINESS	LUST
J & V FARMS	LUST
J & V FARMS	LUST
J & V FARMS	LUST
STEWART & NUSS	LUST
SHOP-N-GO #598	UST
JOHNNY QUIK FOOD STORE #131	UST
BILL S KWIK STOP	UST
S & K MINI MART #3	UST
PILOT TRUCK CENTER	UST
7-ELEVEN FOOD STORE #17117	UST
STUART S MADERA MOBIL MART	UST
HARMIN S LIQUOR & GAS	UST
BJ S MART & DELI	UST
BEACON STATION #611	UST
GAS-N-SAVE	UST
7-ELEVEN FOOD STORE #16895	UST
MADERA SELF SERVICE	UST
JOHNNY QUIK FOOD STORE #101	UST
H & S ULTRAMART #2	UST
JOHNNY QUIK FOOD STORE #119	UST
PACIFIC BELL (UG-027)	UST
M & M MARKET	UST
FARRIOR FARMS	HIST UST
PAPAGNI-BONITA	HIST UST
C.E. CAMPBELL & SON RANCH	HIST UST
CHARLES F. KLEIN	HIST UST
CADENAZZI RANCH	HIST UST
HENRY S. NAITO	HIST UST
ROYAL MADERA VINEYARDS	HIST UST
VALLEY GRAIN PRODUCTS, INC.	HIST UST
STEVE ERICKSON FARMS	HIST UST
DOUGLAS SHOEMATE	HIST UST
DASILVA DAIRY	HIST UST
LAURENCE W. SIEBERT	HIST UST
STAGE RANCH INC.	HIST UST
M.H. MATHISEN	HIST UST
L. H. H.	HIST UST
HALOPOFF FARM	HIST UST
CROSSLAND RIVER RANCH	HIST UST



## EXECUTIVE SUMMARY

MADERA DISTRICT FIR	HIST UST
COSTALES FARMS, INC.	HIST UST
WILCATS	HIST UST
VINA DEL OSO	HIST UST
TONY DONATELLI	HIST UST
TOM G. PISTACCHIO	HIST UST
SUNSWEET DRYERS - MADERA	HIST UST, EMI
SCHMALL VINEYARDS, INC.	HIST UST
ROY W SMITH	HIST UST
ROTHGARN RANCH	HIST UST
RAYMOND PITRUCCI	HIST UST
MAGDIC RANCH	HIST UST
MADERA COUNTY ROAD YARD #1	HIST UST
MABEL I KINNEY	HIST UST
LUCKY B STABLES	HIST UST
USTIN D DENMAN	HIST UST
AMES E. LOWRANCE	HIST UST
GASTON OWNBEY	HIST UST
DENNIS MEISNER	HIST UST
CALVARY CEMETERY	HIST UST
POPE RANCH	HIST UST
BROCKMAN FARMS	HIST UST
TOVIA RANCH	HIST UST
RIPPERDAN MKT	HIST UST
LEE DA SILVA & ANNA	HIST UST
STOETZL RANCH	HIST UST
OAN KORTOFF R.	HIST UST
HOME RANCH	HIST UST
ADOLU RANCH	HIST UST
PAUL CAPPELLUTI	HIST UST
RIPPERDAN RANCH	AST
ROBBIN COLLINS	AST
NORTH MADERA RANCH	AST
EAGLE CREEK RANCH	AST
BRITZ FERTILIZERS, MADERA	AST
TALLEY TRANSPORTATION	AST
MAIN RANCH SHOP	AST
MADERA RETAIL FACILITY	AST
GREGG SUBSTATION	AST
HOUSING AUTHORITY OF THE CITY OF M	HAZNET
FABRICATED ADVANCED BUILDING SYSTE	HAZNET
MUSD/CENTRAL SERVICES	HAZNET
CALTRANS DIST 6/ENV AIR NOISE & WA	HAZNET
EL RANCH	HAZNET
HOUSING AUTHORITY OF THE CITY OF M	HAZNET
HOUSING AUTHORITY OF THE CITY OF M	HAZNET
BEACON OIL	HAZNET
PISTORESI AG SERVICE INC	HAZNET
COUNTY OF MADERA - ENGINEERING	HAZNET
AZ MANUFACTURING	HAZNET
MARIO ZAPATA	HAZNET
MADERA PUMPS	HAZNET
PACIFIC GAS & ELECTRIC CO.	HAZNET
DALENA FARMS	HAZNET
HOUSING AUTHORITY OF THE CITY OF M	HAZNET
IM'S AUTOMOTIVE	HAZNET
S & RANCH	HAZNET
DEPT OF TRANSPORTATION/DIST 6	HAZNET
DOT	HAZNET
LOUISE YOUNG	HAZNET
THOMASON TRACTOR COMPANY	HAZNET
BERENDA SUN FARMS	HAZNET

## EXECUTIVE SUMMARY

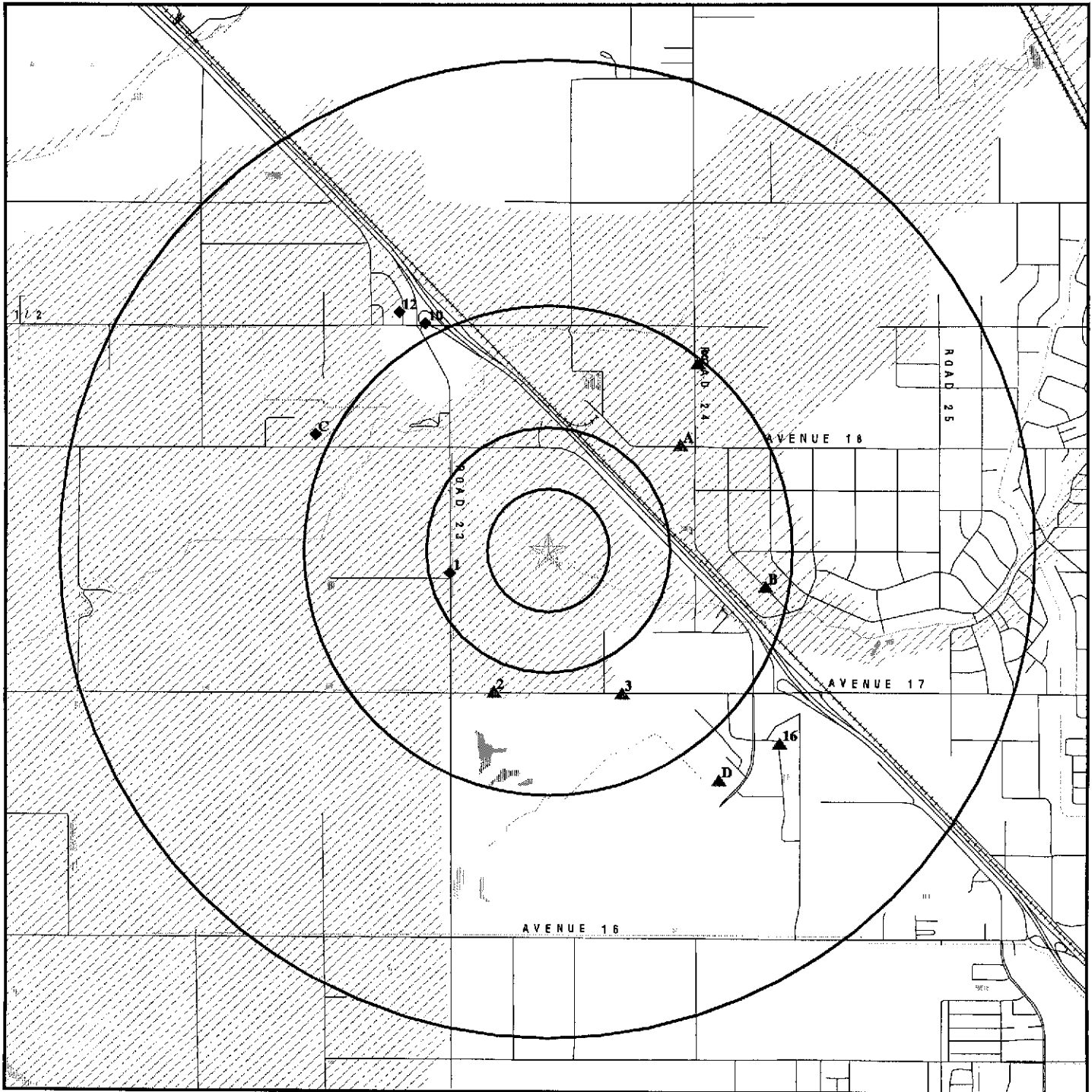
ART RUBIO	HAZNET
MARIA ROBLES	HAZNET, CA SLIC
DON AND LINDA LEWIS	HAZNET
S & RANCH	HAZNET
DENNIS MEISNER VINEYARDS	HAZNET
DIBUDUO & DEFENES	HAZNET
PILOT TRAVEL CENTERS LLC # 365	HAZNET
MADERA TRACTOR & IMPLEMENT CO INC	HAZNET
PILOT	HAZNET, EMI
PG&E NEWHALL	HAZNET
BALL-FOSTER GLASS CO.,LLC	HAZNET
RANCHOS DENTAL CARE	HAZNET
LUCKY 7	HAZNET
IMMY'S MARKET	HAZNET
RANCHOS CHIROPRACTIC	HAZNET
KENT HORN	HAZNET
ELECTRONIC SORTING SERVICE	HAZNET
SWIFT TRANSPORTATION INC	HAZNET
DMP DEV CORP	HAZNET
COUNTY OF MADERA	HAZNET
MADERA SUB STATION	HAZNET
LONGS DRUG STORE #159	HAZNET
1X UNITED STATES CODE STORAGE	HAZNET
GRAPHIC SCIENCES INC	HAZNET
BETTY CASTRO	HAZNET
MADERA COUNTY OFFICE OF EDUCATION	HAZNET
ARCANE AUTOMOTIVE	HAZNET
DAVID NORBY	HAZNET
PACIFIC GAS AND ELECTRIC/SITE 7.5	HAZNET
PG&E GREG SUBSTATION GARAGE	HAZNET
MADERA COUNTY ENGINEERING	HAZNET
CONSOLIDATED LAND CO	HAZNET
CHESTER SANTOS	HAZNET
UNION PACIFIC RAILROAD	HAZNET
SCHOETTLER TIRE	HAZNET
RAY'S SMALL ENGINE AND GARDEN EQUI	HAZNET
PACIFIC BELL	RCRA-SQG, FINDS
GREGG SUBSTATION GARAGE	RCRA-SQG, FINDS
PG&E SAN JOAQUIN 3 HYDRO PLANT	RCRA-SQG, FINDS
NORTH BOUND ROUTE 99 / .2 MILE SOU	ERNS
CONSTRUCTN SITE:RD28,N OF AVE. 14	ERNS
.25 MILE NORTH OF AVENUE 9 AND .25	ERNS
ROAD 33 NORTH OF AVE 12	ERNS
STATE ROUTE 99 NORTHBOUND NORTH OF	ERNS
SITE ID 060390004	FINDS
VALLEY GRAIN AZTECA MILLING	FINDS, EMI
RIPPERDAN DISPOSAL SITE	FINDS
SITE ID 060390003	FINDS
PG&E - MADERA MGP	CA SLIC
BALTIMORE AIRCOIL COMPANY	CA SLIC
BEAL PROPERTIES, INC	CA WDS
WWTF	CA WDS
FRUTEC, INC.	CA WDS
DIAMOND H DAIRY	CA WDS
MADERA BIOMASS POWER PLANT	CA WDS
ABC AUTO & TRUCK WRECKERS	REF
MADERA GLASS COMPANY	REF
STEEL STRUCTURES, INC	REF
NORBY LUMBER COMPANY INC	REF
LEON'S PLACE AND FIX IT	REF
LOT SOUTH OF VALLEY WHOLESALE BLDG	REF
LANDFILL #1	REF

## EXECUTIVE SUMMARY

BRITZ FERTILIZERS, INC  
WESTERN FARM SERVICE-CENTRAL VALLE  
SUN-MAID GROWERS OF CALIFORNIA  
VERN JONES OIL & GAS CORP.

SSTS  
SSTS  
EMI  
EMI

# OVERVIEW MAP - 01359424.1r - AES



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- ▨ National Priority List Sites
- ▨ Landfill Sites
- ▨ Dept. Defense Sites



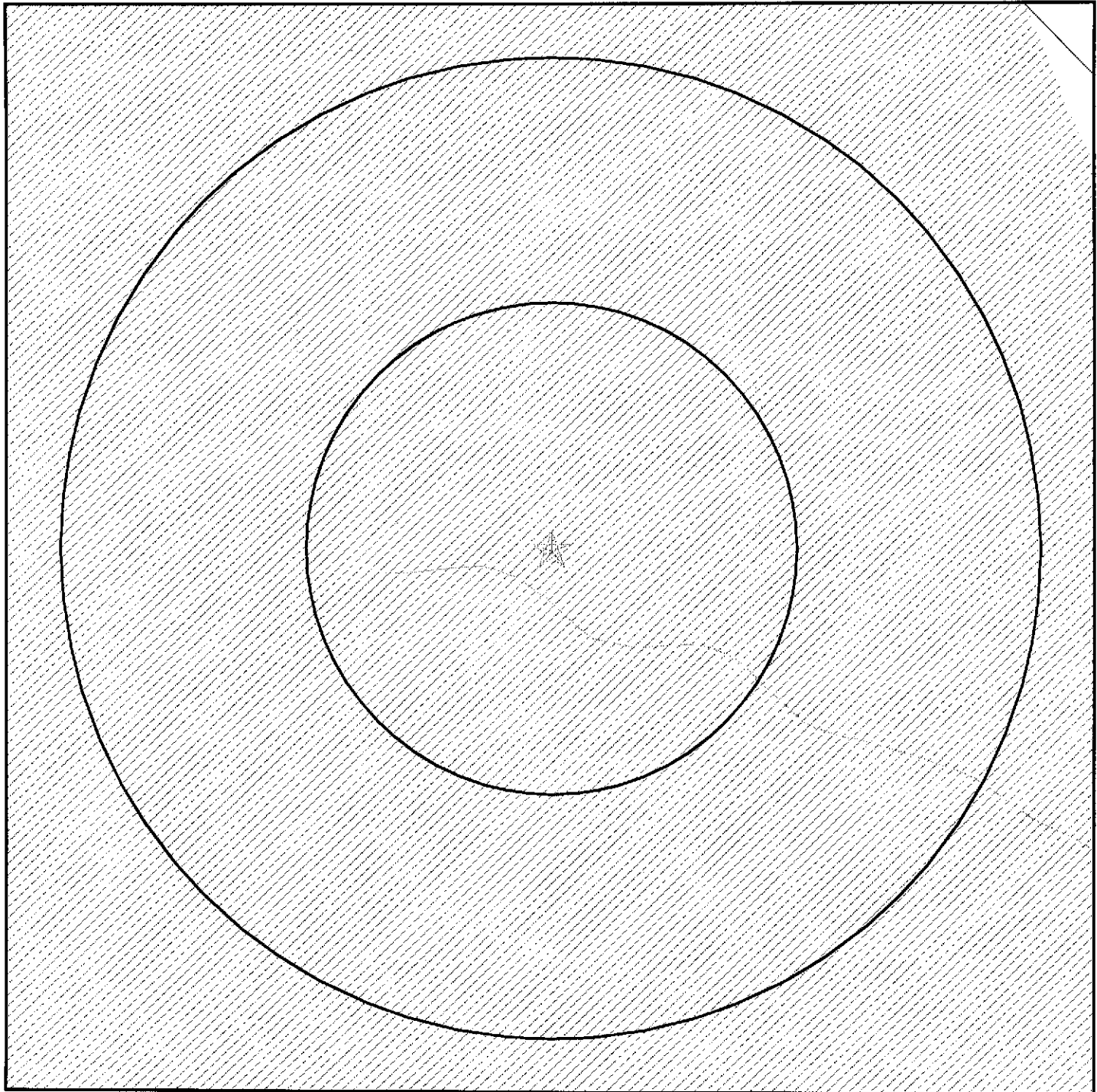
- ▨ Indian Reservations BIA
- ▨ Oil & Gas pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone
- ▨ Federal Wetlands
- ▨ Areas of Concern



**TARGET PROPERTY:** North Fork Site  
**ADDRESS:** 17488 Golden State Blvd  
**CITY/STATE/ZIP:** Madera CA 93637  
**LAT/LONG:** 37.0049 / 120.1214

**CUSTOMER:** AES  
**CONTACT:** Pete Connelly  
**INQUIRY #:** 01359424.1r  
**DATE:** February 11, 2005 4:15 pm

# DETAIL MAP - 01359424.1r - AES



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Coal Gasification Sites

■ Sensitive Receptors

■ National Priority List Sites

■ Landfill Sites

■ Dept. Defense Sites

■ Indian Reservations BIA

~ Oil & Gas pipelines

■ 100-year flood zone

■ 500-year flood zone

■ Areas of Concern

0 1/16 1/8 1/4 Miles



TARGET PROPERTY: North Fork Site  
 ADDRESS: 17488 Golden State Blvd  
 CITY/STATE/ZIP: Madera CA 93637  
 LAT/LONG: 37.0049 / 120.1214

CUSTOMER: AES  
 CONTACT: Pete Connelly  
 INQUIRY #: 01359424.1r  
 DATE: February 11, 2005 4:15 pm



## MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b><u>FEDERAL ASTM STANDARD</u></b>								
NPL		2.000	0	0	0	0	0	0
Proposed NPL		2.000	0	0	0	0	0	0
CERCLIS		1.500	0	0	0	0	1	1
CERC-NFRAP		1.250	0	0	0	0	0	0
CORRACTS		2.000	0	0	0	0	0	0
RCRA TSD		1.500	0	0	0	0	0	0
RCRA Lg. Quan. Gen.		1.250	0	0	0	0	1	1
RCRA Sm. Quan. Gen.		1.250	0	0	0	0	1	1
ERNS		1.000	0	0	0	0	NR	0
<b><u>STATE ASTM STANDARD</u></b>								
AWP		2.000	0	0	0	0	0	0
Cal-Sites		2.000	0	0	0	0	0	0
CHMIRS		1.000	0	0	0	0	NR	0
Cortese		1.500	0	0	0	0	2	2
Notify 65		2.000	0	0	0	0	0	0
Toxic Pits		2.000	0	0	0	0	0	0
State Landfill		1.500	0	0	0	0	0	0
WMUDS/SWAT		1.500	0	0	0	0	1	1
LUST		1.500	0	0	0	0	2	2
CA Bond Exp. Plan		2.000	0	0	0	0	1	1
UST		1.250	0	0	0	0	0	0
VCP		1.500	0	0	0	0	0	0
INDIAN LUST		1.500	0	0	0	0	0	0
INDIAN UST		1.250	0	0	0	0	0	0
CA FID UST		1.250	0	0	0	1	0	1
HIST UST		1.250	0	0	0	1	3	4
<b><u>FEDERAL ASTM SUPPLEMENTAL</u></b>								
CONSENT		2.000	0	0	0	0	0	0
ROD		2.000	0	0	0	0	0	0
Delisted NPL		2.000	0	0	0	0	0	0
FINDS		1.000	0	0	0	1	NR	1
HMIRS		1.000	0	0	0	0	NR	0
MLTS		1.000	0	0	0	0	NR	0
MINES		1.250	0	0	0	0	0	0
NPL Liens		1.000	0	0	0	0	NR	0
PADS		1.000	0	0	0	0	NR	0
ODI		1.500	0	0	0	0	0	0
DOD		2.000	0	0	0	0	0	0
INDIAN RESERV		2.000	0	0	0	0	0	0
UMTRA		1.500	0	0	0	0	0	0
FUDS		2.000	0	0	0	0	0	0
RAATS		1.000	0	0	0	0	NR	0
TRIS		1.000	0	0	0	0	NR	0

## MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TSCA		1.000	0	0	0	0	NR	0
SSTS		1.000	0	0	0	0	NR	0
FTTS		1.000	0	0	0	0	NR	0

### STATE OR LOCAL ASTM SUPPLEMENTAL

AST		1.000	0	0	0	0	NR	0
CLEANERS		1.250	0	0	0	0	0	0
CA WDS		1.000	0	0	0	1	NR	1
DEED		1.000	0	0	0	0	NR	0
REF		1.250	0	0	0	0	1	1
EMI		1.000	0	0	0	1	NR	1
NFA		1.250	0	0	0	0	0	0
NFE		1.250	0	0	0	0	0	0
SCH		1.250	0	0	0	0	0	0
SLIC		1.500	0	0	0	0	1	1
HAZNET		1.000	0	0	1	4	NR	5

### EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas		2.000	0	0	0	0	0	0
----------	--	-------	---	---	---	---	---	---

### BROWNFIELDS DATABASES

US BROWNFIELDS		1.500	0	0	0	0	0	0
VCP		1.500	0	0	0	0	0	0

### NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

**1**  
**WSW**  
**1/4-1/2**  
**2182 ft.**

**A I C O MADERA**  
**17486 ROAD 23**  
**MADERA, CA 93637**

**HAZNET** **S103636288**  
**N/A**

**Relative:**  
**Lower**

**HAZNET:**  
Gepaid: CAC001346904  
TSD EPA ID: CAD008302903  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: .0208  
Waste Category: Off-specification, aged, or surplus inorganics  
Disposal Method: Recycler  
Contact: NADIM JABJI/PRES  
Telephone: (000) 000-0000  
Mailing Address: PO BOX 5994  
FRESNO, CA 93755  
County: Madera

**2**  
**SSW**  
**1/2-1**  
**3261 ft.**

**MADERA MUNICIPAL GOLF COURSE**  
**23200 AVENUE 17**  
**MADERA, CA 93637**

**HAZNET** **S104583787**  
**N/A**

**Relative:**  
**Equal**

**HAZNET:**  
Gepaid: CAL930295569  
TSD EPA ID: CAD093459485  
Gen County: Madera  
Tsd County: Fresno  
Tons: 0.2084  
Waste Category: Aqueous solution with less than 10% total organic residues  
Disposal Method: Treatment, Tank  
Contact: MADERA MUNICIPAL GOLF COURSE  
Telephone: (209) 661-5400  
Mailing Address: 23200 AVENUE 17  
MADERA, CA 93637 - 9258  
County: Madera  
Gepaid: CAL930295569  
TSD EPA ID: CAD093459485  
Gen County: Madera  
Tsd County: Fresno  
Tons: .1625  
Waste Category: Aqueous solution with less than 10% total organic residues  
Disposal Method: Treatment, Tank  
Contact: MADERA MUNICIPAL GOLF COURSE  
Telephone: (209) 661-5400  
Mailing Address: 23200 AVENUE 17  
MADERA, CA 93637 - 9258  
County: Madera

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**3**  
**SSE**  
**1/2-1**  
**3475 ft.**

**ANDREW TAHAN**  
**23783 AVE 17**  
**MADERA, CA 93637**

**HAZNET** **S103950185**  
**N/A**

**Relative:** **HAZNET:**  
**Equal** Gepaid: CAC001031752  
TSD EPA ID: CAL000027741  
**Actual:** Gen County: Madera  
**252 ft.** Tsd County: 5  
Tons: 2.5284  
Waste Category: Asbestos-containing waste  
Disposal Method: Disposal, Land Fill  
Contact: ANDREW TAHAN  
Telephone: (000) 000-0000  
Mailing Address: 31355 AVE 10  
MADERA, CA 93638  
County Madera

**A4**  
**NE**  
**1/2-1**  
**3649 ft.**

**VALLEY GRAIN PRODUCTS, INC.**  
**23865 AVENUE 18**  
**MADERA, CA 93639**

**CA FID UST** **S101588406**  
**N/A**

**Relative:** **Site 1 of 2 in cluster A**  
**Higher** **FID:**  
Facility ID: 20000370 Regulate ID: Not reported  
**Actual:** Reg By: Inactive Underground Storage Tank Location  
**257 ft.** Cortese Code: Not reported SIC Code: Not reported  
Status: Inactive Facility Tel: (209) 675-3400  
Mail To: Not reported  
23865 AVENUE 18  
MADERA, CA 93639  
Contact: Not reported Contact Tel: Not reported  
DUNs No: Not reported NPDES No: Not reported  
Creation: 10/22/93 Modified: 00/00/00  
EPA ID: Not reported  
Comments: Not reported

**A5**  
**NE**  
**1/2-1**  
**3653 ft.**

**VALLEY GRAIN PRODUCTS**  
**23865 AVENUE 18**  
**MADERA, CA 93638**

**HAZNET** **S102004472**  
**CA WDS** **N/A**  
**EMI**

**Relative:** **Site 2 of 2 in cluster A**  
**Higher** **HAZNET:**  
Gepaid: CAL000092014  
**Actual:** TSD EPA ID: CAD059494310  
**257 ft.** Gen County: Madera  
Tsd County: Santa Clara  
Tons: .8340  
Waste Category: Liquids with chromium (VI) > 500 mg/l  
Disposal Method: Disposal, Other  
Contact: AZTECA MILLING CO  
Telephone: (210) 383-4911  
Mailing Address: 23865 AVENUE 18  
MADERA, CA 93638 - 9644  
County Madera

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

VALLEY GRAIN PRODUCTS (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S102004472

Gepaid: CAL000092014  
TSD EPA ID: CAD059494310  
Gen County: Madera  
Tsd County: Santa Clara  
Tons: .9591  
Waste Category: Liquids with pH <UN-> 2 with metals  
Disposal Method: Disposal, Other  
Contact: AZTECA MILLING CO  
Telephone: (210) 383-4911  
Mailing Address: 23865 AVENUE 18  
MADERA, CA 93638 - 9644  
County: Madera  
Gepaid: CAL000092014  
TSD EPA ID: CAD059494310  
Gen County: Madera  
Tsd County: Santa Clara  
Tons: .4378  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Transfer Station  
Contact: AZTECA MILLING CO  
Telephone: (210) 383-4911  
Mailing Address: 23865 AVENUE 18  
MADERA, CA 93638 - 9644  
County: Madera  
Gepaid: CAL000092014  
TSD EPA ID: CAD059494310  
Gen County: Madera  
Tsd County: Santa Clara  
Tons: .4587  
Waste Category: Liquids with chromium (VI) > 500 mg/l  
Disposal Method: Transfer Station  
Contact: AZTECA MILLING CO  
Telephone: (210) 383-4911  
Mailing Address: 23865 AVENUE 18  
MADERA, CA 93638 - 9644  
County: Madera  
Gepaid: CAL000092014  
TSD EPA ID: CAD059494310  
Gen County: Madera  
Tsd County: Santa Clara  
Tons: .4587  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Transfer Station  
Contact: AZTECA MILLING CO  
Telephone: (210) 383-4911  
Mailing Address: 23865 AVENUE 18  
MADERA, CA 93638 - 9644  
County: Madera

[Click this hyperlink](#) while viewing on your computer to access  
15 additional CA HAZNET record(s) in the EDR Site Report.

WDS:

Facility ID:	San Joaquin 202008001	Facility Telephone	Not reported
Facility Contact	DIANA WATKINS	SIC Code 2:	Not reported
SIC Code:	723		



Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

VALLEY GRAIN PRODUCTS (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S102004472

Agency Name: AZTECA MILLING/VALLEY GRAIN  
Agency Address: 23865 AVE 18  
MADERA 93638  
Agency Contact: BARRY RUNYON  
Design Flow: 0 Million Gal/Day  
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.  
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.  
Agency Type: Private  
Waste Type: Process Waste (Waste produced as part of the industrial/manufacturing process) - Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.  
Threat to Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.  
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.  
Reclamation: No reclamation requirements associated with this facility.  
POTW: The facility is not a POTW.  
NPDES Number: Not reported  
Subregion: 0

EMISSIONS :

Facility ID : 2041  
Air District Code : SJU  
SIC Code : 2096  
Total Priority Score : Not reported  
Health Risk Assessment : Not reported  
Non-cancer Chronic Haz Index : Not reported  
Non-cancer Acute Haz Index : Not reported  
Air Basin : SJV  
Air District Name : SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System : Not reported  
Consolidated Emission Reporting Rule : Not reported  
County Code : 20  
County ID : 20

B6  
East  
1/2-1  
4753 ft.

A-Z MANUFACTURING  
17462 BALDWIN STREET  
MADERA, CA 93638

FINDS 1007467043  
110017404655

Site 1 of 2 in cluster B

Relative:  
Higher

Actual:  
259 ft.

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

A-Z MANUFACTURING (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1007467043

FINDS:

Other Pertinent Environmental Activity Identified at Site:  
RBLC

B7  
East  
1/2-1  
4763 ft.

AZ MANUFACTURING  
17462 BALDWIN ST  
MADERA, CA 93638

HAZNET S103636271  
N/A

Site 2 of 2 in cluster B

Relative:  
Higher

Actual:  
259 ft.

HAZNET:

Gepaid: CAL000177564  
TSD EPA ID: CAT000613893  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: .1485  
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)  
Disposal Method: Transfer Station  
Contact: WILBUR OLSON  
Telephone: (000) 000-0000  
Mailing Address: 15429 ROAD 28 1/2  
MADERA, CA 93638 - 2326  
County: Madera  
  
Gepaid: CAL000177564  
TSD EPA ID: CAT000613893  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: .0540  
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)  
Disposal Method: Not reported  
Contact: WILBUR OLSON  
Telephone: (000) 000-0000  
Mailing Address: 15429 ROAD 28 1/2  
MADERA, CA 93638 - 2326  
County: Madera

8  
NE  
1/2-1  
5192 ft.

PIPCO INC.  
18485 ROAD 24  
MADERA, CA 93638

HIST UST U001589577  
N/A

Relative:  
Higher

Actual:  
256 ft.

UST HIST:

Facility ID: 38183  
Total Tanks: 2  
Owner Address: 18485 ROAD 24  
MADERA, CA 93638  
  
Tank Used for: PRODUCT  
Tank Num: 1  
Tank Capacity: 00000500  
Type of Fuel: UNLEADED  
Leak Detection: Not reported  
Contact Name: ROBERT PAUL  
Facility Type: Other  
  
Facility ID: 38183  
Total Tanks: 2  
Owner Address: 18485 ROAD 24

Owner Name: PIPCO, INC. GROWERS-PACKERS-SH  
Region: STATE

Container Num: 1  
Year Installed: 1965  
Tank Construction: 1/4 inches

Telephone: (209) 674-6675  
Other Type: FARMING

Owner Name: PIPCO, INC. GROWERS-PACKERS-SH  
Region: STATE

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

PIPCO INC. (Continued)

EDR ID Number  
EPA ID Number

Database(s)

U001589577

MADERA, CA 93638  
Tank Used for: PRODUCT  
Tank Num: 2  
Tank Capacity: 00000500  
Type of Fuel: REGULAR  
Leak Detection: Not reported  
Contact Name: ROBERT PAUL  
Facility Type: Other  
Container Num: 2  
Year Installed: 1965  
Tank Construction: 1/4 inches  
Telephone: (209) 674-6675  
Other Type: FARMING

C9  
WNW  
> 1  
5492 ft.

OSEPH PITACCHIO  
22517 AVENUE 18 1/2  
MADERA, CA 93637

HIST UST U001589243  
N/A

Site 1 of 2 in cluster C

Relative:  
Lower

Actual:  
243 ft.

UST HIST:

Facility ID: 23613  
Total Tanks: 4  
Owner Address: 5829 NORTH MOTEL DRIVE  
FRESNO, CA 93711

Owner Name: G & PISTACCHIO TRUCKING CO.  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 1  
Tank Capacity: 00010000  
Type of Fuel: DIESEL  
Leak Detection: None  
Contact Name: FOREMAN  
Facility Type: Gas Station

Container Num: DIESEL #1  
Year Installed: 1976  
Tank Construction: 1/4 inches

Telephone: (209) 673-5783  
Other Type: Not reported

Facility ID: 23613  
Total Tanks: 4  
Owner Address: 5829 NORTH MOTEL DRIVE  
FRESNO, CA 93711

Owner Name: G & PISTACCHIO TRUCKING CO.  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 2  
Tank Capacity: 00005000  
Type of Fuel: Not reported  
Leak Detection: None  
Contact Name: FOREMAN  
Facility Type: Gas Station

Container Num: MOTOR OIL  
Year Installed: 1976  
Tank Construction: 1/4 inches

Telephone: (209) 673-5783  
Other Type: Not reported

Facility ID: 23613  
Total Tanks: 4  
Owner Address: 5829 NORTH MOTEL DRIVE  
FRESNO, CA 93711

Owner Name: G & PISTACCHIO TRUCKING CO.  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 3  
Tank Capacity: 00001000  
Type of Fuel: REGULAR  
Leak Detection: None  
Contact Name: FOREMAN  
Facility Type: Gas Station

Container Num: GAS #3  
Year Installed: 1976  
Tank Construction: 1/8 inches

Telephone: (209) 673-5783  
Other Type: Not reported

Facility ID: 23613  
Total Tanks: 4  
Owner Address: 5829 NORTH MOTEL DRIVE  
FRESNO, CA 93711

Owner Name: G & PISTACCHIO TRUCKING CO.  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 4  
Tank Capacity: 00000150

Container Num: #4  
Year Installed: 1976

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

OSEPH PITACCHIO (Continued)

EDR ID Number  
EPA ID Number

Database(s)

U001589243

Type of Fuel:	Not reported	Tank Construction:	12 gauge
Leak Detection:	None		
Contact Name:	FOREMAN	Telephone:	(209) 673-5783
Facility Type:	Gas Station	Other Type:	Not reported

10  
NNW  
> 1  
5580 ft.

TOP DIESEL REPAIR, INC.  
22615 AVE 18-1/2  
MADERA, CA 93637

LUST  
Cortese  
S105024811  
N/A

Relative:  
Lower

Actual:  
250 ft.

State LUST:

Cross Street:	GOLDEN STATE	
Qty Leaked:	Not reported	
Case Number	5T20000	
Reg Board:	5F	
Chemical:	Regular Gasoline	
Lead Agency:	Local Agency	
Local Agency :	20000	
Case Type:	Soil only	
Status:	Case Closed	
Review Date:	Not reported	Confirm Leak: Not reported
Workplan:	Not reported	Prelim Assess: Not reported
Pollution Char:	Not reported	Remed Plan: Not reported
Remed Action:	Not reported	
Monitoring:	Not reported	
Close Date:	1991-05-09 00:00:00	
Release Date:	1991-05-09 00:00:00	
Cleanup Fund Id :	Not reported	
Discover Date :	1989-04-03 00:00:00	
Enforcement Dt :	1965-01-01 00:00:00	
Enf Type:	None Taken	
Enter Date :	1991-05-17 00:00:00	
Funding:	Responsible Party	
Staff Initials:	JAN	
How Discovered:	Tank Closure	
How Stopped:	Not reported	
Interim :	Not reported	
Leak Cause:	UNK	
Leak Source:	UNK	
MTBE Date :	Not reported	
Max MTBE GW :	Not reported	
MTBE Tested:	Site NOT Tested for MTBE. Includes Unknown and Not Analyzed.	
Priority:	4	
Local Case # :	Not reported	
Beneficial:	Not reported	
Staff :	JWH	
GW Qualifier :	Not reported	
Max MTBE Soil :	Not reported	
Soil Qualifier :	Not reported	
Hydr Basin #:	SAN JOAQUIN VALLEY (	
Operator :	TOM G. P	
Oversight Prgm:	LUST	
Review Date :	1991-05-09 00:00:00	
Stop Date :	1989-04-03	
Work Suspended	No	
Responsible Party	TOM G. PISTACCHIO	
RP Address:	22615 AVENUE 18-1/2, MADERA,	
Global Id:	T0603900108	
Org Name:	Not reported	

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

TOP DIESEL REPAIR, INC. (Continued)

EDR ID Number  
EPA ID Number

S105024811

Contact Person: Not reported  
MTBE Conc: 0  
Mtbe Fuel: 1  
Water System Name: Not reported  
Well Name: Not reported  
Distance To Lust: 0  
Waste Discharge Global ID: Not reported  
Waste Disch Assigned Name: Not reported

LUST Region 5:

Substance: REGULAR GASOLINE  
Case Type: Soil only  
Program: LUST  
Staff Initials: JWH  
Status: Case Closed  
MTBE Code: N/A  
Lead Agency: Local

Case Number: 5T20000108

CORTESE:

Region: CORTESE  
Fac Address 2: 22615 AVE 18-1/2

C11  
WNW  
> 1  
5617 ft.

FREEMAN E BROOKS  
22497 AVENUE 18 1/2  
MADERA, CA 93637

HIST UST U001589175  
N/A

Site 2 of 2 In cluster C

Relative:  
Lower

Actual:  
243 ft.

UST HIST:

Facility ID: 60660  
Total Tanks: 2  
Owner Address: 22497 AVE 18 1/2  
MADERA, CA 93637  
Tank Used for: PRODUCT  
Tank Num: 1  
Tank Capacity: 00000500  
Type of Fuel: DIESEL  
Leak Detection: None  
Contact Name: JACK FREEMAN  
Facility Type: Other

Owner Name: FREEMAN E BROOKS  
Region: STATE

Container Num: 1  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 674-2308  
Other Type: FARM

Facility ID: 60660  
Total Tanks: 2  
Owner Address: 22497 AVE 18 1/2  
MADERA, CA 93637

Owner Name: FREEMAN E BROOKS  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 2

Container Num: 2  
Year Installed: Not reported  
Tank Construction: Not Reported

Tank Capacity: 00000000  
Type of Fuel: 06  
Leak Detection: None  
Contact Name: JACK FREEMAN  
Facility Type: Other

Telephone: (209) 674-2308  
Other Type: FARM



Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

12  
NNW  
> 1  
6077 ft.  
**CENTRAL CALIFORNIA KENWORTH**  
**22615 AVE 18 1/2**  
**MADERA, CA 93637**

**RCRA-SQG**  
**FINDS**  
**HAZNET**  
**1000110808**  
**CAD982028680**

**Relative:**  
**Lower**

RCRAInfo:

Owner: TOM G PISTACCHIO  
(209) 661-6250

**Actual:**  
**250 ft.**

EPA ID: CAD982028680

Contact: TOM G PISTACCHIO  
(209) 661-6250

Classification: Small Quantity Generator  
TSDF Activities: Not reported

Violation Status: No violations found

**FINDS:**

Other Pertinent Environmental Activity Identified at Site:  
Resource Conservation and Recovery Act Information system

**HAZNET:**

Gepaid: CAD982028680  
TSD EPA ID: CAD066113465  
Gen County: Madera  
Tsd County: Fresno  
Tons: 1.7037  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Transfer Station  
Contact: CENTRAL CALIFORNIA KENWORTH  
Telephone: (559) 268-4344  
Mailing Address: 2892 E JENSEN AVE  
FRESNO, CA 93706 - 9701  
County: Madera  
Gepaid: CAD982028680  
TSD EPA ID: CAD066113465  
Gen County: Madera  
Tsd County: Fresno  
Tons: .0625  
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)  
Disposal Method: Transfer Station  
Contact: CENTRAL CALIFORNIA KENWORTH  
Telephone: (559) 268-4344  
Mailing Address: 2892 E JENSEN AVE  
FRESNO, CA 93706 - 9701  
County: Madera  
Gepaid: CAD982028680  
TSD EPA ID: CAT000613893  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: .2310  
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)  
Disposal Method: Transfer Station  
Contact: CENTRAL CALIFORNIA KENWORTH  
Telephone: (559) 268-4344  
Mailing Address: 2892 E JENSEN AVE  
FRESNO, CA 93706 - 9701  
County: Madera

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number  
EPA ID Number

CENTRAL CALIFORNIA KENWORTH (Continued)

1000110808

Gepaid: CAD982028680  
TSD EPA ID: CAD066113465  
Gen County: Madera  
Tsd County: Fresno  
Tons: .9543  
Waste Category: Liquids with halogenated organic compounds > 1000 mg/l  
Disposal Method: Transfer Station  
Contact: CENTRAL CALIFORNIA KENWORTH  
Telephone: (559) 268-4344  
Mailing Address: 2892 E JENSEN AVE  
FRESNO, CA 93706 - 9701  
County Madera  
Gepaid: CAD982028680  
TSD EPA ID: CAD982446882  
Gen County: Madera  
Tsd County: Fresno  
Tons: .4170  
Waste Category: Aqueous solution with less than 10% total organic residues  
Disposal Method: Transfer Station  
Contact: CENTRAL CALIFORNIA KENWORTH  
Telephone: (559) 268-4344  
Mailing Address: 2892 E JENSEN AVE  
FRESNO, CA 93706 - 9701  
County Madera

[Click this hyperlink](#) while viewing on your computer to access  
33 additional CA HAZNET record(s) in the EDR Site Report.

D13 MADERA MUNICIPAL AIRPORT  
SE 4020 AVIATION DR  
> 1 MADERA CA, CA 93637  
6184 ft.

Relative:  
Equal

Actual:  
252 ft.

Site 1 of 3 in cluster D

State LUST:

Cross Street: AVE 17  
Qty Leaked: Not reported  
Case Number 5T20000  
Reg Board: 5F  
Chemical: Gasoline  
Lead Agency: Local Agency  
Local Agency : 20000  
Case Type: Soil only  
Status: Case Closed  
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes  
spreading or land farming)

Review Date: Not reported  
Workplan: Not reported  
Pollution Char: Not reported  
Remed Action: Not reported  
Monitoring: Not reported  
Close Date: 1987-12-29 00:00:00  
Release Date: 1987-12-29 00:00:00  
Cleanup Fund Id : Not reported  
Discover Date : 1987-12-16 00:00:00  
Enforcement Dt : 1965-01-01 00:00:00  
Enf Type: None Taken

Confirm Leak: Not reported  
Prelim Assess: Not reported  
Remed Plan: Not reported

LUST S100833198  
Cortese N/A  
WMUDS/SWAT  
CA BOND EXP. PLAN  
CA SLIC  
REF

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

MADERA MUNICIPAL AIRPORT (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S100833198

Enter Date : 1988-01-07 00:00:00  
Funding: Not reported  
Staff Initials: DEL  
How Discovered: Tank Test  
How Stopped: Not reported  
Interim : Not reported  
Leak Cause: Overfill  
Leak Source: Tank  
MTBE Date : Not reported  
Max MTBE GW : Not reported  
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.  
Priority: 4  
Local Case # : Not reported  
Beneficial: Not reported  
Staff : JWH  
GW Qualifier : Not reported  
Max MTBE Soil : Not reported  
Soil Qualifier : Not reported  
Hydr Basin #: SAN JOAQUIN VALLEY (  
Operator : SUALLEY,  
Oversight Prgm: LUST  
Review Date : 1987-12-29 00:00:00  
Stop Date : Not reported  
Work Suspended :No  
Responsible PartyCITY OF MADERA  
RP Address: 205 W. FOURTH, MADERA, CA 93  
Global Id: T0603900044  
Org Name: Not reported  
Contact Person: Not reported  
MTBE Conc: 0  
Mtbe Fuel: 1  
Water System Name: Not reported  
Well Name: Not reported  
Distance To Lust: 0  
Waste Discharge Global ID: Not reported  
Waste Disch Assigned Name: Not reported

LUST Region 5:

Substance: GASOLINE  
Case Type: Soil only  
Program: LUST  
Staff Initials: JWH  
Status: Case Closed  
MTBE Code: N/A  
Lead Agency: Local

Case Number: 5T20000044

BEP:

Site Description : The site is a municipal airport with crop dusting operations, involving pesticide-contaminated wash and rinse waters running off to an unlined ditch. There is an irrigation and drainage evaporation pond approximately 1.5 miles downstream from the point of discharge.

Hazardous Waste Desc : DDT, malathion, dieldrin, ethion and trithion were found at high levels at the point of discharge to the ditch. DDT was found in a soil sample taken at the pond. The estimated waste volume is 1,500 drums. Samples taken from the canal/ditch indicatedthe following analyses: DDT - 2,710 milligrams per kilogram (mg/kg); dieldrin - 23.0 mg/kg; ethion - 112 mg/kg; malathion - 1,110 mg/kg; and trithion - 161 mg/kg.

Threat To Public Health & Env : Within a one mile radius, there is a trailer park with 50 trailers; also

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

MADERA MUNICIPAL AIRPORT (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S100833198

Site Activity Status : approximately 20 residences and 50 industrial employees. No critical animal habitats are within a one mile radius. Pathways for migration or contact are surface water and direct contact. Depth to ground water is 90 feet. The site geology is alluvium, chiefly from granitic sources and clay lenses 3 to 20 feet from the surface. A barbed wire fence surrounds the airport. DHS will be negotiating a stipulated remedial action order in July, 1991. DHS will require a closure plan for the unlined ditch and pond at this facility.

Project Revenue Source Co. : Not Reported

PRS Company Address : Not reported

Project Revenue Source Desc : In September, 1984, the City of Madera hired Twining Labs, Inc., to complete a proposal for a geotechnical investigation. This proposal was completed in December, 1984. The City of Madera will fund further characterization and remedial action at this site. The Department has budgeted \$50,000 for direct costs associated with the site. DHS will attempt to recover 100 percent of direct costs plus staff costs and overhead related to the project. The responsible parties will pay all costs associated with remedial investigations and cleanup activities.

Responsible Party : RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN

REF:

Facility ID : 20070001

Dtsc Region Code : 1

Region Code Definition : SACRAMENTO

County Code : 20

Site Name Under : Not reported

Current Status Date : 11021994

Current Status Code : REFRW

Current Status : PROPERTY/SITE REFERRED TO RWQCB

Lead Agency Code : Not reported

Lead Agency : N/A

Site Type Code : Not reported

Site Type : N/A

National Priorities List : Not reported

Tier : Not reported

Source Of Funding Code : Not reported

Staff Member : Not reported

Supervisor : Not reported

Sic Code : 07

Sic Code Definition : AGRICULTURAL SERVICES

Site Mitigatn & Brnfls Reuse Prog (SMBR) Code : CC

SMBR Branch : CENTRAL CALIFORNIA

Regional Water Quality Control Board : Not reported

RWQCB Definition : Not reported

Site Access Controlled : Not reported

Listed In Haz Wst & Substncls Sites List (CORTESE) : Not reported

Date Hazard Ranked : Not reported

GW Contamination Suspected : Not reported

# Of Sources Contributing To Contamination : 0.00000

Lat/Long : 0.00000° 0.00000° 0.00000° / 0.00000° 0.00000° 0.00000°

Direction Lat : Not reported

Direction Long : Not reported

Lat/long Method : Not reported

Entity Lat/long Coordinates Refer To : Not reported

State Assembly Distt Code : Not reported

State Senate Distt Code : Not reported

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

**MADERA MUNICIPAL AIRPORT (Continued)**

EDR ID Number  
EPA ID Number

Database(s)

**S100833198**

Identifying Code: EPA  
ID Value: CAD980636898  
Other ID Desc: EPA IDENTIFICATION NUMBER  
Alternate Name(s): MADERA MUNICIPAL AIRPORT  
Address(es): 4020 AVIATION DRIVE  
MADERA, CA 93638  
Background Info: Not reported  
Facility Id: Not reported  
AWP Activities Code: Not reported  
DTSC Site Activity Code: Not reported  
Activity Code Def: Not reported  
AWP Activity Id: Not reported  
Dt Activity Due For Completion: Not reported  
Revised Due Date: Not reported  
Date Activity Completed: Not reported  
Est # Of Person-years To Complete: Not reported  
Est. Size Of An Activity Code: Not reported  
Site Status When Activity Commitment Made: Not reported  
Status Code Definition: Not reported  
Cubic Yards Of Solids Removed At Completion: Not reported  
Gallons Of Liquid Removed Upon Completion: Not reported  
Cubic Yards Of Solids Treated Upon Completion: Not reported  
Actvty Deleted Via Commitmnt/Completns Screen: Not reported  
Special Program Code: Not reported  
Special Program: Not reported  
Comments Date: 01011985  
Comments: This is the date the site was first listed pursuant to section 25356.  
SITE SCREENING DONE  
EPA completed Listing Site Inspection and will list site.  
AERIAL SURVEILLANCE  
Site Screening Done: According to 1984 sample results, drainage ditch contaminated with DDT up to 1510 ppm, DDD up to 1090 ppm, dieldrin, ethion, malathion, and trithion. 1985 sample results revealed DDT up to 23.9 ppm, trithion, DEF, ethylparathion, and ethion. Shallow aquifer contaminated with toxaphene and DDT. RWQCB will work on the site in 1990/91.  
Hazard Ranking Package completed.

**WMUDS:**

Region: 5F  
Date of Last Facility Edit: Not reported  
Last Facility Editors: Not reported  
Waste Discharge System ID: 5C200101003  
Solid Waste Information ID: Not reported  
Waste Discharge System: True  
Solid Waste Assessment Test Program: False  
Facility Name: Not reported  
Toxic Pits Cleanup Act Program: False  
Resource Conservation Recovery Act Program: False  
Department of Defense: False  
Open to Public: False  
Number of WMUDS at Facility: 1  
Facility Telephone: Not reported  
Primary Standard Industrial Classification: 2879  
Secondary Standard Industrial Classification: Not reported  
Solid Waste Assessment Test Program Name: Not reported



Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

MADERA MUNICIPAL AIRPORT (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S100833198

NPID: Not reported  
Tonnage: 0  
Regional Board ID: Not reported  
Municipal Solid Waste: False  
Superorder: False  
Sub Chapter 15: True  
Reg. Board Project Officer: ESB  
Section Range: Not reported  
RCRA Facility: No  
Waste Discharge Requirements: A  
Base Meridian: Not reported  
Waste List: False  
Facility Description: Not reported  
Self-Monitoring Rept. Frequency: Annual Submittal  
Threat to Water Quality:

Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.

Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)  
Complexity: Category A - Any major NPDES facility, any non-NPDES facility (particularly those with toxic wastes) that would be a major if discharge was made to surface or ground waters, or any Class I disposal site. Includes any small-volume complex facility (particularly those with toxicwastes) with numerous discharge points, leak detection systems or ground water monitoring wells.  
Prime Waste: Process Waste (Waste produced as part of the industrial/manufacturing process) - Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.  
Agency: MADERA, CITY OF  
Address: 205 W 4TH ST  
MADERA CA 93637  
Department: Not reported  
Contact: SAM M SCHEIDER  
Telephone: (559) 674-6958  
Type: City  
Landowner: Not reported  
Address: Not reported  
Telephone: Not reported  
Contact: Not reported

CORTESE:  
Region: CORTESE  
Fac Address 2: 4020 AVIATION DR

CA STATE SLIC :  
Global Id : SLT5FS594624  
Region : STATE  
Assigned Name : SLICSITE  
Lead Agency Contact : CHRIS MARKOWSKI  
Lead Agency : CENTRAL VALLEY RWQCB (REGION 5F)  
Lead Agency Case Number : SLT5FS059  
Responsible Party : Not reported

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

**MADERA MUNICIPAL AIRPORT (Continued)**

EDR ID Number  
EPA ID Number

Database(s)

**S100833198**

Recent Dtw : Not reported  
Substance Released : NOT\_SELECTED

**D14**  
**SE**  
**> 1**  
**6184 ft.**

**AIRPORT FUEL FACILITY**  
**4020 AVIATION DR**  
**MADERA, CA 93637**

**HIST UST** **U001589044**  
**N/A**

**Site 2 of 3 in cluster D**

**Relative:**  
**Equal**

**Actual:**  
**252 ft.**

**UST HIST:**

Facility ID: 42554  
Total Tanks: 2  
Owner Address: 4020 AVIATION DRIVE  
MADERA, CA 93637  
Tank Used for: PRODUCT  
Tank Num: 1  
Tank Capacity: 00010000  
Type of Fuel: 06  
Leak Detection: Visual  
Contact Name: LUND AVIATION  
Facility Type: Gas Station

Owner Name: CITY OF MADERA  
Region: STATE

Container Num: 2  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 674-2201  
Other Type: AIRCRAFT FUEL

Facility ID: 42554  
Total Tanks: 2  
Owner Address: 4020 AVIATION DRIVE  
MADERA, CA 93637  
Tank Used for: PRODUCT  
Tank Num: 2  
Tank Capacity: 00005000  
Type of Fuel: 06  
Leak Detection: Visual  
Contact Name: LUND AVIATION  
Facility Type: Gas Station

Owner Name: CITY OF MADERA  
Region: STATE

Container Num: 1  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 674-2201  
Other Type: AIRCRAFT FUEL

**D15**  
**SE**  
**> 1**  
**6184 ft.**

**MADERA MUNI ARPT**  
**4020 AVIATION DR**  
**MADERA, CA 93637**

**CERCLIS** **1000212190**  
**FINDS** **CAD980636898**

**Site 3 of 3 in cluster D**

**Relative:**  
**Equal**

**Actual:**  
**252 ft.**

**CERCLIS Classification Data:**

Site incident category: Not reported

Federal Facility: Not a Federal Facility

Non NPL Status: NFRAP

Ownership Status: Unknown

NPL Status: Not on the NPL

Contact: Betsy Curnow

Contact Tel: (415) 972-3093

Contact Title: Not reported

Contact: Jere Johnson

Contact Tel: (415) 972-3094

Contact Title: Not reported

Site Description: PRPs are actively remediating the site, EPA to receive closure reports

**CERCLIS Assessment History:**

Assessment: DISCOVERY

Completed: 12/01/1979

Assessment: PRELIMINARY ASSESSMENT

Completed: 04/01/1987

Assessment: HRS PACKAGE

Completed: 08/01/1987

Assessment: SITE INSPECTION

Completed: 09/01/1987

Assessment: EXPANDED SITE INSPECTION

Completed: 03/09/1989

Assessment: SITE REASSESSMENT

Completed: 07/06/2004

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

**MADERA MUNI ARPT (Continued)**

EDR ID Number  
EPA ID Number

1000212190

CERCLIS Site Status:  
NFRAP (No Further Remedial Action Planned)

FINDS:  
Other Pertinent Environmental Activity Identified at Site:  
Comprehensive Environmental Response, Compensation and Liability Information System

16  
SE  
> 1  
6513 ft.

**MOORE QUALITY GALVANIZING**  
**3001 FALCON DRIVE**  
**MADERA, CA 93637**

**FINDS** 1000355118  
**HAZNET** 93639MRQLT30  
**RCRA-LQG**  
**TRIS**  
**CA WDS**  
**EMI**

Relative:  
Equal

Actual:  
252 ft.

RCRAInfo:  
Owner: NOT REQUIRED  
(415) 555-1212  
EPA ID: CAD982486813  
Contact: Not reported  
Classification: Large Quantity Generator  
TSDF Activities: Not reported  
Violation Status: No violations found

FINDS:  
Other Pertinent Environmental Activity Identified at Site:  
National Emissions Inventory  
Resource Conservation and Recovery Act Information system  
Toxics Release Inventory

HAZNET:  
Gepaid: CAD982486813  
TSD EPA ID: CAD097030993  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: 8.3400  
Waste Category: Alkaline solution (pH <UN-> 12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)  
Disposal Method: Treatment, Tank  
Contact: THOMAS E MOORE  
Telephone: (209) 673-2822  
Mailing Address: PO BOX 420  
MADERA, CA 93639 - 0420  
County: Madera  
Gepaid: CAD982486813  
TSD EPA ID: CAD097030993  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: 96.9525  
Waste Category: Liquids with pH <UN-> 2 with metals  
Disposal Method: Treatment, Tank  
Contact: THOMAS E MOORE  
Telephone: (209) 673-2822  
Mailing Address: PO BOX 420  
MADERA, CA 93639 - 0420  
County: Madera

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

MOORE QUALITY GALVANIZING (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000355118

Gepaid: CAD982486813  
TSD EPA ID: CAT000646117  
Gen County: Madera  
Tsd County: Kings  
Tons: 10.9564  
Waste Category: Unspecified sludge waste  
Disposal Method: Not reported  
Contact: THOMAS E MOORE  
Telephone: (209) 673-2822  
Mailing Address: PO BOX 420  
MADERA, CA 93639 - 0420  
County: Madera  
Gepaid: CAD982486813  
TSD EPA ID: CAT000646117  
Gen County: Madera  
Tsd County: Kings  
Tons: 14.6659  
Waste Category: Unspecified sludge waste  
Disposal Method: Disposal, Land Fill  
Contact: THOMAS E MOORE  
Telephone: (209) 673-2822  
Mailing Address: PO BOX 420  
MADERA, CA 93639 - 0420  
County: Madera  
Gepaid: CAD982486813  
TSD EPA ID: CAD097030993  
Gen County: Madera  
Tsd County: Los Angeles  
Tons: 13.7610  
Waste Category: Alkaline solution without metals (pH > 12.5)  
Disposal Method: Recycler  
Contact: THOMAS E MOORE  
Telephone: (209) 673-2822  
Mailing Address: PO BOX 420  
MADERA, CA 93639 - 0420  
County: Madera

[Click this hyperlink](#) while viewing on your computer to access  
39 additional CA HAZNET record(s) in the EDR Site Report.

WDS:

Facility ID: 5F 201012227  
Facility Contact: TOM MOORE  
SIC Code: 0  
Agency Name: MOORE QUALITY GALVANIZING  
Agency Address: PO Box 420  
Madera 93639 - 0420  
Agency Contact: TOM MOORE  
Design Flow: 0 Million Gal/Day  
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.  
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.  
Agency Type: Private  
Facility Telephone: (559) 673-2822  
SIC Code 2: Not reported  
Agency Phone: (559) 673-2822  
Baseline Flow: 0 Million Gal/Day

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

**MOORE QUALITY GALVANIZING (Continued)**

EDR ID Number  
EPA ID Number

Database(s)

1000355118

Waste Type: Not reported  
Threat to Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.  
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.  
Reclamation: Not reported  
POTW: Not reported  
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board  
Subregion: 0

**EMISSIONS :**

Facility ID : 848  
Air District Code : SJU  
SIC Code : 3471  
Total Priority Score : Not reported  
Health Risk Assessment : Not reported  
Non-cancer Chronic Haz Index : Not reported  
Non-cancer Acute Haz Index : Not reported  
Air Basin : SJV  
Air District Name : SAN JOAQUIN VALLEY UNIFIED APCD  
Community Health Air Pollution Info System : Not reported  
Consolidated Emission Reporting Rule : Not reported  
County Code : 20  
County ID : 20



## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MADERA	S103626639	HOUSING AUTHORITY OF THE CITY OF M	125 / 129 PARK ST	93637	HAZNET
MADERA	S105083090	FABRICATED ADVANCED BUILDING SYSTE	2319 W 13TH AVE	93637	HAZNET
MADERA	S103631999	MUSD/CENTRAL SERVICES	1505 HWY 145	93637	HAZNET
MADERA	S105024803	MELIKIAN FARMS, INC.	10606 HWY 145	93638	LUST, Cortese
MADERA	S106085947	CALTRANS DIST & ENV AIR NOISE & WA	6850 HWY 145(CHERVON,NE CORNER	93637	HAZNET
MADERA	S105024810	HAWS FARMS	13324 RD 17	93637	LUST, Cortese
MADERA	U001589166	FARRIOR FARMS	5615 RD. 18 3/4	93637	HIST UST
MADERA	A100176572	RIPPERDAN RANCH	5615 RD. 18 3/4	93637	AST
MADERA	S103665085	EL RANCH	5615 RD 183 3/4	93637	HAZNET
MADERA	1003878432	FAIRMEAD DSPL SITE	RD 19 & AVE 22	93637	CERC-NFRAP
MADERA	U001589336	PAPAGNI-BONITA	RD. 19 1/2	93637	HIST UST
MADERA	U001589090	C.E. CAMPBELL & SON RANCH	20720 RD 19	93637	HIST UST
MADERA	S105024812	DIXIELAND SCHOOL	18440 RD 19	93637	LUST, Cortese
MADERA	A100211351	ROBBIN COLLINS	18844 RD 19 1/2	93637	AST
MADERA	S105024814	ROBERTS	19836 RD 21	93637	LUST, Cortese
MADERA	S103641765	HOUSING AUTHORITY OF THE CITY OF M	213 / 217 CYPRESS	93637	HAZNET
MADERA	S103640052	HOUSING AUTHORITY OF THE CITY OF M	201,205,209,217 / 218 LEWIS	93637	HAZNET
MADERA	S105024818	LAVINA RANCH	9408 RD 23	93637	LUST, Cortese
MADERA	S105083692	BEACON OIL	16981 RD 26	93638	HAZNET
MADERA	U001589096	CHARLES F. KLEIN	RD 27 1/2	93637	HIST UST
MADERA	A100176440	NORTH MADERA RANCH	22257 RD. 28 1/2	93638	AST
MADERA	U001589506	CADENAZZI RANCH	1819 RD. 28 1/2	93638	HIST UST
MADERA	S105089171	PISTORESI AG SERVICE INC	15428 RD 28 1/2	93638	HAZNET
MADERA	S104567607	COUNTY OF MADERA - ENGINEERING	14215 RD 28	93638	HAZNET
MADERA	S103951552	AZ MANUFACTURING	15429 RD 28 1/2	93638	HAZNET
MADERA	A100176136	EAGLE CREEK RANCH	22334 RD. 28 1/2	93638	AST
MADERA	S105024793	M.U.S.T. CENTER	RD 28-1/2	93637	LUST, Cortese
MADERA	1005838956	SITE ID 060390004	RD. 29 1/2 NO. OF AVE 8 MADERA	93637	FINDS
MADERA	S106065484	MARIO ZAPATA	11855 RD 29	93637	HAZNET
MADERA	S105034738	MADERA PUMPS	11884 RD 29	93637	HAZNET
MADERA	S105024825	MADERA PUMP INC.	11884 RD 29	93637	LUST, Cortese
MADERA	A100176003	BRITZ FERTILIZERS, MADERA	11856 RD. 29	93637	AST
MADERA	1005425593	BRITZ FERTILIZERS, INC	11856 RD 29	93637	SSTS
MADERA	S105024826	DOMRIES ENTERPRISES INC.	12281 RD 29	93638	LUST, Cortese
MADERA	A100110130	TALLEY TRANSPORTATION	12325 RD. 29	93638	AST
MADERA	U001589208	HENRY S. NAITO	6699 RD 3 1/2	93637	HIST UST
MADERA	S102798407	PACIFIC GAS & ELECTRIC CO.	RD. 32 1/2 1 MILE SOUTH OF	93637	HAZNET
MADERA	U001589585	ROYAL MADERA VINEYARDS	7770 RD. 33	93638	HIST UST
MADERA	S105024828	CAL YORK RANCHES	13100 RD 34 1/2	93637	LUST, Cortese
MADERA	S104576004	DALENA FARMS	7636 RD 34	93638	HAZNET
MADERA	S103654323	HOUSING AUTHORITY OF THE CITY OF M	345 / 353 SHARON	93638	HAZNET
MADERA	S105083679	IM'S AUTOMOTIVE	13906 RD 36	93638	HAZNET
MADERA	S105725416	S & RANCH	10888 RD 40	93638	HAZNET

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MADERA	A100178351	MAIN RANCH SHOP	10888 RD. 40	93638	AST
MADERA	S105024830	SHOP-N-GO #598	10480 HWY 41	93637	LUST, Cortese
MADERA	S105024829	SHOP N GO	10480 HWY 41	93637	LUST, Cortese
MADERA	S103678956	DEPT OF TRANSPORTATION/DIST 6	HWY 41 / RIVER	93637	HAZNET
MADERA	U003941701	SHOP-N-GO #598	10480 HIGHWAY 41	93638	UST
MADERA	S103678957	DOT	HWY 41 / AVE 10	93638	HAZNET
MADERA	U001589450	VALLEY GRAIN PRODUCTS, INC.	20157 HWY 99	93637	HIST UST
MADERA	U001589422	STEVE ERICKSON FARMS	10896 HWY. 99	93637	HIST UST
MADERA	U001589143	DOUGLAS SHOEMATE	9486 HWY 99	93637	HIST UST
MADERA	U001589121	DASILVA DAIRY	17183 HWY 99	93637	HIST UST
MADERA	S100181550	ABC AUTO & TRUCK WRECKERS	19494 HIGHWAY 99	93637	REF
MADERA	1006094993	VALLEY GRAIN AZTECA MILLING	20157 HIGHWAY 99	93637	FINDS, EMI
MADERA	U001589555	LAURENCE W. SIEBERT	AS ABOVE	93638	HIST UST
MADERA	S105984573	YEH WTS	APN # 029-31-0-039-0		SWFILE
MADERA	S103480042	SAN JOAQUIN HWY 99 BUSINESS	APN#048-200-002 / -		LUST
MADERA	1006835529	RIPPERDAN DISPOSAL SITE	AVE 7 AND ROAD 21		FINDS
MADERA	S103868452	BEAL PROPERTIES, INC	AVE 12 / HWY 99		CA WDS
MADERA	U001589420	STAGE RANCH INC.	AVE 11 1/2	93637	HIST UST
MADERA	U001589275	M.H. MATHISEN	18104 AVE 19	93637	HIST UST
MADERA	U001589253	L. H. H.	29557 6TH AVE	93637	HIST UST
MADERA	U001589202	HALOPOFF FARM	2826 4 AVE 5 1/2	93637	HIST UST
MADERA	U001589114	CROSSLAND RIVER RANCH	6149 AVE 32 1/2	93637	HIST UST
MADERA	S106571377	WWTF	AVE 13 / RD 21 1/2	93637	CA WDS
MADERA	S106455302	J & V FARMS	25482 AVE 8	93637	LUST
MADERA	S106455301	J & V FARMS	25409 AVE 8	93637	LUST
MADERA	S106249226	SUN-MAID GROWERS OF CALIFORNIA	27400 AVE 6	93637	EMI
MADERA	S106163511	J & V FARMS	25482 AVE 8	93637	LUST
MADERA	S106089258	LOUISE YOUNG	20425 AVE 21	93637	HAZNET
MADERA	S106085387	THOMASON TRACTOR COMPANY	AVE 18 1/2 / RD 16	93637	HAZNET
MADERA	S105088935	BERENDA SUN FARMS	23593 AVE 20 1/2	93638	HAZNET
MADERA	S105086936	ART RUBIO	25186 AVE 21	93638	HAZNET
MADERA	S105086912	MARIA ROBLES	19261 AVE 18 1/2	93638	HAZNET
MADERA	S105083212	DON AND LINDA LEWIS	24825 AVE 16	93638	HAZNET
MADERA	S105034619	S & RANCH	39639 AVE 10	93638	HAZNET
MADERA	S105033425	DENNIS MEISNER VINEYARDS	28318 AVE 14 1/2	93638	HAZNET
MADERA	S105024834	41 RANCH	40482 AVE 9	93638	HAZNET
MADERA	S104568430	DIBUDUO & DEFENES	38384 AVE 12	93638	LUST, Cortese
MADERA	U001589286	MADERA DISTRICT FIR	25826 AVE. 15 1/2	93638	HAZNET
MADERA	U001589108	COSTALES FARMS, INC.	12502 AVE. 1ST.	93637	HIST UST
MADERA	A100160506	MADERA RETAIL FACILITY	24778 AVE. 13	93637	HIST UST
MADERA	S106103881	FRUTECH, INC.	31754 AVE. 9	93637	AST
MADERA	A100160365	GREGG SUBSTATION	34657 AVE.7	93638	CA WDS
MADERA	S106103895	DIAMOND H DAIRY	9564 AVENUE 18 / A HALF	93638	AST
MADERA	U003940209	JOHNNY QUIK FOOD STORE #131	28650 AVENUE 12	93637	UST
MADERA	U001589480	WILCATS	22123 AVENUE 18 3/4	93637	HIST UST
MADERA	U001589456	VINA DEL OSO	25655 AVENUE 8 1/2	93637	HIST UST
MADERA	U001589442	TONY DONATELLI	20732 AVENUE 19 1/2	93637	HIST UST

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MADERA	U001589438	TOM G. PISTACCHIO	22615 AVENUE 18 1/2	93637	HIST UST
MADERA	U001589424	SUNSWET DRYERS - MADERA	28390 AVENUE 12	93637	HIST UST, EMI
MADERA	U001589409	SCHMALL VINEYARDS, INC.	27778 AVENUE 8 1/2	93637	HIST UST
MADERA	U001589393	ROY W SMITH	19294 AVENUE 13 1/2	93637	HIST UST
MADERA	U001589391	ROTHGARN RANCH	26859 AVENUE 5 1/2	93637	HIST UST
MADERA	U001589364	RAYMOND PITRUCCI	24387 AVENUE 13 3/4	93637	HIST UST
MADERA	U001589300	MAGDJIC RANCH	22482 AVENUE 13 1/2	93637	HIST UST
MADERA	U001589284	MADERA COUNTY ROAD YARD #1	AVENUE 11 1/2	93637	HIST UST
MADERA	S105723740	PILOT TRAVEL CENTERS LLC # 365	22717 AVENUE 18 1/2 HWY 99	93637	HIST UST
MADERA	S105035354	MADERA TRACTOR & IMPLEMENT CO INC	24476 AVENUE 14	93637	HAZNET
MADERA	S104565707	PILOT	22717 AVENUE 18 1/2	93637	HAZNET
MADERA	S103981730	PG&E NEWHALL	AVENUE 12 3 MILES EAST OF RD 9	93637	HAZNET, EMI
MADERA	S103645616	BALL-FOSTER GLASS CO.,LLC	24441 AVENUE 12	93637	HAZNET
MADERA	S100867264	MADERA GLASS COMPANY	24441 AVENUE 12 / 24 1/2	93637	REF
MADERA	1005439477	WESTERN FARM SERVICE-CENTRAL VALLE	24778 AVENUE 13	93637	SSTS
MADERA	U003971459	BILL S KWIK STOP	28742 AVENUE 13 1/2	93638	UST
MADERA	U003941433	S & K MINI MART #3	37275 AVENUE 12	93638	UST
MADERA	U003787003	PILOT TRUCK CENTER	22717 AVENUE 18 1/2	93638	UST
MADERA	U001589560	MABEL I KINNEY	28140 AVENUE 14 1/2	93638	HIST UST
MADERA	U001589556	LUCKY B STABLES	28305 AVENUE 14 1/2	93638	HIST UST
MADERA	U001589551	USTIN D DENMAN	34547 AVENUE 12 1/4	93638	HIST UST
MADERA	U001589540	AMES E. LOWRANCE	35675 AVENUE 13 1/2	93638	HIST UST
MADERA	U001589525	GASTON OWNBEY	32573 AVENUE 11	93638	HIST UST
MADERA	U001589513	DENNIS MEISNER	28318 AVENUE 14 1/2	93638	HIST UST
MADERA	U001589507	CALVARY CEMETERY	28447 AVENUE 14	93638	HIST UST
MADERA	S103983664	RANCHOS DENTAL CARE	37144 AVENUE 12 #104	93638	HIST UST
MADERA	S103975563	LUCKY 7	37019 AVENUE 12	93638	HAZNET
MADERA	S103972175	IMMY'S MARKET	AVENUE 8 / ROAD 29.5	93638	HAZNET
MADERA	S103655895	RANCHOS CHIROPATIC	37184 AVENUE 12	93638	HAZNET
MADERA	S101481097	STEEL STRUCTURES, INC	28777 AVENUE 15 1/2	93638	HAZNET
MADERA	S101481089	NORBY LUMBER COMPANY INC	31470 AVENUE 12	93638	REF
MADERA	98433231	NORTH BOUND ROUTE 99 / 2 MILE SOU	NORTH BOUND ROUTE 99 / 2 MILE	93638	REF
MADERA	S103973330	KENT HORN	40473 BREAKYARD	93638	ERNS
MADERA	S102815753	ELECTRONIC SORTING SERVICE	17287 LA CANAPA	93638	HAZNET
MADERA	U003937288	7-ELEVEN FOOD STORE #17117	904 CLEVELAND AVE	93638	HAZNET
MADERA	8715764	CONSTRUCTN SITE:RD28,N OF AVE. 14	CONSTRUCTN SITE:RD28,N OF AVE.	93638	UST
MADERA	U001589347	POPE RANCH	SW COR. AVE 7 / RD. 17	93637	ERNS
MADERA	U001589088	BROCKMAN FARMS	N.W. CORNER AVE. 12 / ROAD 3	93637	HIST UST
MADERA	S108090398	SWIFT TRANSPORTATION INC	NE CORNER OF SR-145 / AVE 12	93637	HAZNET
MADERA	S103960883	DMP DEV CORP	NORTHEAST CORNER OF 7TH / SO	93637	HAZNET
MADERA	U001589595	TOVIA RANCH	CORNER NORTH EAST OF AVE 8 /	93638	HIST UST
MADERA	S105087296	COUNTY OF MADERA	CORNER OF ROAD 600 / ROAD 40	93638	HAZNET
MADERA	S103975953	MADERA SUB STATION	CORNER OF HWY 145 / AVE 12	93638	HAZNET
MADERA	S103975210	LONGS DRUG STORE #159	1109 COUNTY	93638	HAZNET
MADERA	1003878886	PG&E GAS PLANT MADERA	S E ST BET CLINTON & E 9TH ST	93637	CERC-NFRAP
MADERA	S102792104	1X UNITED STATES CODE STORAGE	218 N EAST ST	93638	HAZNET
MADERA	S104565803	GRAPHIC SCIENCES INC	18 1/2 EXIT ON HWY 99	93638	HAZNET

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MADERA	S103866455	MADERA BIOMASS POWER PLANT	FIREBAUGH RD AT RIPPERDAN AVE		CA WDS
MADERA	U003976988	STUART S MADERA MOBIL MART	1030 GATEWAY DR	93637	UST
MADERA	U003971461	HARMIN S LIQUOR & GAS	500 GATEWAY DR	93637	UST
MADERA	U003971460	BJ S MART & DELI	225 GATEWAY DR	93637	UST
MADERA	U003938407	BEACON STATION #611	1040 GATEWAY DR	93637	UST
MADERA	U003786962	GAS-N-SAVE	514 GATEWAY DR	93637	UST
MADERA	U001589374	RIPPERDAN MKT	86820 HIWAY 145	93637	HIST UST
MADERA	U003837287	7-ELEVEN FOOD STORE #16895	1933 HOWARD RD	93637	UST
MADERA	S102803557	BETTY CASTRO	20199 N HWY 41		HAZNET
MADERA	U001589258	LEE DA SILVA & ANNA	30100 ISLAND DR.	93637	HIST UST
MADERA	U001589592	STOETZL RANCH	31562 ISLAND DRIVE	93638	HIST UST
MADERA	U003786951	MADERA SELF SERVICE	1030 LAKE ST	93637	UST
MADERA	S103975939	MADERA COUNTY OFFICE OF EDUCATION	755 MADERA AVE	93637	HAZNET
MADERA	U003940205	JOHNNY QUIK FOOD STORE #101	120 LEWIS ST	93637	UST
MADERA	U003940003	H & S ULTRAMART #2	1488 MADERA AVE	93637	UST
MADERA	1003878439	MIREX-CONTAMINATED AIRCRAFT	MADERA CO ARPT	93637	CERC-NFRAP
MADERA	98456725	.25 MILE NORTH OF AVENUE 8 AND .25	25 MILE NORTH OF AVENUE 8 AND		ERNS
MADERA	1000250949	PACIFIC BELL	2 1/2 MILES S/O MADERA	93637	RCRA-SQG, FINDS
MADERA	S103950522	ARCANE AUTOMOTIVE	10816 B N HWY 41	93638	HAZNET
MADERA	S105083260	DAVID NORBY	35 MI NE OF FRESNO ON RD 274	93637	HAZNET
MADERA	S106567535	STEWART & NUSS	1000 NEES AVE	93638	LUST
MADERA	S106486269	PG&E - MADERA MGP	NINTH / E STREETS	93638	CA SLIC
MADERA	S104569989	PACIFIC GAS AND ELECTRIC/SITE 7.5	1 1/4MI NW OF INTERSECT OF AVE	93637	HAZNET
MADERA	S103981728	PG&E GREG SUBSTATION GARAGE	3MI EAST OF HWY99 /34657 AVE 7	93637	HAZNET
MADERA	S101481107	LEON'S PLACE AND FIX IT	EAST OF NORTH GATEWAY DR/HIGHW		
MADERA	S100185578	LOT SOUTH OF VALLEY WHOLESALE BLDG	SOUTH OF EAST CENTRAL BETWEEN	93637	REF
MADERA	1000234542	GREGG SUBSTATION GARAGE	3MI EAST OF HWY99	93637	REF
MADERA	U003940207	JOHNNY QUIK FOOD STORE #119	1211 OLIVE AVE	93637	UST
MADERA	S102820269	MADERA COUNTY ENGINEERING	PARKS / GROUNDS DIV	93637	HAZNET
MADERA	S106249415	VERN JONES OIL & GAS CORP.	SE QTR, SEC18-T18S-R16E		EMI
MADERA	S100181547	LANDFILL #1	RAYMOND ROAD OFF OF CLEVELAND	93637	REF
MADERA	S103958383	CONSOLIDATED LAND CO	14598 N RD 19 1/2	93637	HAZNET
MADERA	1000196495	PG&E SAN JOAQUIN 3 HYDRO PLANT	ON RD222 N END MANZANITA LAKE	93637	RCRA-SQG, FINDS
MADERA	U001589232	OAN KORTOFF R.	5470 RDD. 22	93637	HIST UST
MADERA	U001589534	HOME RANCH	26583 RIVER RD. 400	93638	HIST UST
MADERA	U001589495	ADOLU RANCH	35707 RIVER ROAD 400	93638	HIST UST
MADERA	S105024794	HOME RANCH	26583 RIVER RD 400	93638	HIST UST
MADERA	1005838955	SITE ID 060390003	ROAD 28 & AVE 15, MADERA, CA.	93638	LUST, Cortese
MADERA	93343296	ROAD 33 NORTH OF AVE 12	ROAD 33 NORTH OF AVE 12		FINDS
MADERA	S106528962	RAYMOND ROAD TIRE SITE	16380 ROAD 28 1/2	93637	ERNS
MADERA	S106486194	BALTIMORE AIRCOIL COMPANY	ROAD 28-1/2	93638	SWFLF
MADERA	S106198552	MADERA CITY DUMP	ROAD 26, AND AVENUE 23 1/2, AN		CA SLIC
MADERA	U001593633	PAUL CAPPELLUTI	5552 ROAD 29 1/2		SWFLF
MADERA	S105085111	CHESTER SANTOS	529 SOUTHGATEWAY	93637	HIST UST
MADERA	S106088684	UNION PACIFIC RAILROAD	CP SP 180 NO TARB	93637	HAZNET
MADERA	U003786957	PACIFIC BELL (UG-027)	221 E ST	93637	UST
MADERA	U003940423	M & M MARKET	500 B ST	93638	UST

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MADERA	S105726146	SCHOETTTLER TIRE	401 E ST	93638	HAZNET
MADERA	98428261	STATE ROUTE 99 NORTHBOUND NORTH OF	STATE ROUTE 99 NORTHBOUND NORT		ERNS
MADERA	S102818399	RAY'S SMALL ENGINE AND GARDEN EQUI	400 NORTH STREET	93637	HAZNET



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Elapsed ASTM days:** Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

### FEDERAL ASTM STANDARD RECORDS

#### **NPL: National Priority List**

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05

Elapsed ASTM days: 2

Date of Last EDR Contact: 02/01/05

#### **NPL Site Boundaries**

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1

Telephone 617-918-1143

EPA Region 3

Telephone 215-814-5418

EPA Region 4

Telephone 404-562-8033

EPA Region 6

Telephone: 214-655-6659

EPA Region 8

Telephone: 303-312-6774

#### **Proposed NPL: Proposed National Priority List Sites**

Source: EPA

Telephone: N/A

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05

Elapsed ASTM days: 2

Date of Last EDR Contact: 02/01/05

#### **CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System**

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/08/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/21/04

Elapsed ASTM days: 49

Date of Last EDR Contact: 12/21/04

#### **CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned**

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/14/04  
Date Made Active at EDR: 02/08/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/21/04  
Elapsed ASTM days: 49  
Date of Last EDR Contact: 12/21/04

### **CORRACTS:** Corrective Action Report

Source: EPA

Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/23/04  
Date Made Active at EDR: 11/18/04  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 10/07/04  
Elapsed ASTM days: 42  
Date of Last EDR Contact: 12/07/04

### **RCRA:** Resource Conservation and Recovery Act Information

Source: EPA

Telephone: 800-424-9346

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 11/23/04  
Date Made Active at EDR: 01/18/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 11/24/04  
Elapsed ASTM days: 55  
Date of Last EDR Contact: 11/24/04

### **ERNS:** Emergency Response Notification System

Source: National Response Center, United States Coast Guard

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/03  
Date Made Active at EDR: 03/12/04  
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/26/04  
Elapsed ASTM days: 46  
Date of Last EDR Contact: 10/25/04

## **FEDERAL ASTM SUPPLEMENTAL RECORDS**

### **BRS:** Biennial Reporting System

Source: EPA/NTIS

Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01  
Database Release Frequency: Biennially

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

### **CONSENT:** Superfund (CERCLA) Consent Decrees

Source: Department of Justice, Consent Decree Library

Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/05/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 10/25/04  
Date of Next Scheduled EDR Contact: 01/24/05

### **ROD: Records Of Decision**

Source: EPA  
Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/09/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/05/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **DELISTED NPL: National Priority List Deletions**

Source: EPA  
Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/01/05  
Date of Next Scheduled EDR Contact: 05/02/05

### **FINDS: Facility Index System/Facility Identification Initiative Program Summary Report**

Source: EPA  
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **HMIRS: Hazardous Materials Information Reporting System**

Source: U.S. Department of Transportation  
Telephone: 202-366-4555

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/08/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 10/28/04  
Date of Next Scheduled EDR Contact: 01/17/05

### **MLTS: Material Licensing Tracking System**

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 11/30/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **MINES: Mines Master Index File**

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959

Date of Government Version: 09/13/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/28/04  
Date of Next Scheduled EDR Contact: 03/28/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **NPL LIENS:** Federal Superfund Liens

Source: EPA

Telephone: 202-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 11/22/04

Date of Next Scheduled EDR Contact: 02/21/05

### **PADS:** PCB Activity Database System

Source: EPA

Telephone: 202-564-3887

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/04

Database Release Frequency: Annually

Date of Last EDR Contact: 11/12/04

Date of Next Scheduled EDR Contact: 02/07/05

### **DOD:** Department of Defense Sites

Source: USGS

Telephone: 703-692-8801

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/12/04

Date of Next Scheduled EDR Contact: 02/07/05

### **UMTRA:** Uranium Mill Tailings Sites

Source: Department of Energy

Telephone: 505-845-0011

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 04/22/04

Database Release Frequency: Varies

Date of Last EDR Contact: 12/21/04

Date of Next Scheduled EDR Contact: 03/21/05

### **ODI:** Open Dump Inventory

Source: Environmental Protection Agency

Telephone: 800-424-9346

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95

Date of Next Scheduled EDR Contact: N/A

### **FUDS:** Formerly Used Defense Sites

Source: U.S. Army Corps of Engineers

Telephone: 202-528-4285

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/03

Database Release Frequency: Varies

Date of Last EDR Contact: 01/03/05

Date of Next Scheduled EDR Contact: 04/04/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **INDIAN RESERV:** Indian Reservations

Source: USGS

Telephone: 202-208-3710

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/12/04

Date of Next Scheduled EDR Contact: 02/07/05

### **RAATS:** RCRA Administrative Action Tracking System

Source: EPA

Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

### **TRIS:** Toxic Chemical Release Inventory System

Source: EPA

Telephone: 202-566-0250

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/02

Database Release Frequency: Annually

Date of Last EDR Contact: 12/20/04

Date of Next Scheduled EDR Contact: 03/21/05

### **TSCA:** Toxic Substances Control Act

Source: EPA

Telephone: 202-260-5521

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02

Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

### **FTTS INSP:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA

Telephone: 202-564-2501

Date of Government Version: 04/13/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/04

Date of Next Scheduled EDR Contact: 03/21/05

### **SSTS:** Section 7 Tracking Systems

Source: EPA

Telephone: 202-564-5008

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03

Database Release Frequency: Annually

Date of Last EDR Contact: 11/29/04

Date of Next Scheduled EDR Contact: 04/18/05

### **FTTS:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Telephone: 202-564-2501

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/13/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/04  
Date of Next Scheduled EDR Contact: 03/21/05

## STATE OF CALIFORNIA ASTM STANDARD RECORDS

### **AWP:** Annual Workplan Sites

Source: California Environmental Protection Agency  
Telephone: 916-323-3400

Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/09/04  
Date Made Active at EDR: 01/04/05  
Database Release Frequency: Annually

Date of Data Arrival at EDR: 12/02/04  
Elapsed ASTM days: 33  
Date of Last EDR Contact: 12/02/04

### **CAL-SITES:** Calsites Database

Source: Department of Toxic Substance Control  
Telephone: 916-323-3400

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 11/09/04  
Date Made Active at EDR: 01/04/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/02/04  
Elapsed ASTM days: 33  
Date of Last EDR Contact: 12/02/04

### **CHMIRS:** California Hazardous Material Incident Report System

Source: Office of Emergency Services  
Telephone: 916-845-8400

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/03  
Date Made Active at EDR: 06/25/04  
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/18/04  
Elapsed ASTM days: 38  
Date of Last EDR Contact: 11/22/04

### **CORTESE:** "Cortese" Hazardous Waste & Substances Sites List

Source: CAL EPA/Office of Emergency Information  
Telephone: 916-323-9100

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/01  
Date Made Active at EDR: 07/26/01  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01  
Elapsed ASTM days: 58  
Date of Last EDR Contact: 10/28/04

### **NOTIFY 65:** Proposition 65 Records

Source: State Water Resources Control Board  
Telephone: 916-445-3846

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93  
Date Made Active at EDR: 11/19/93  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93  
Elapsed ASTM days: 18  
Date of Last EDR Contact: 10/18/04

### **TOXIC PITS:** Toxic Pits Cleanup Act Sites

Source: State Water Resources Control Board  
Telephone: 916-227-4364

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/95  
Date Made Active at EDR: 09/26/95  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95  
Elapsed ASTM days: 27  
Date of Last EDR Contact: 11/01/04

### **SWF/LF (SWIS): Solid Waste Information System**

Source: Integrated Waste Management Board  
Telephone: 916-341-6320

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/13/04  
Date Made Active at EDR: 01/24/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/14/04  
Elapsed ASTM days: 41  
Date of Last EDR Contact: 12/14/04

### **WMUDS/SWAT: Waste Management Unit Database**

Source: State Water Resources Control Board  
Telephone: 916-227-4448

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00  
Date Made Active at EDR: 05/10/00  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00  
Elapsed ASTM days: 30  
Date of Last EDR Contact: 12/06/04

### **LUST: Leaking Underground Storage Tank Information System**

Source: State Water Resources Control Board  
Telephone: 916-341-5752

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 10/13/04  
Date Made Active at EDR: 11/03/04  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 10/13/04  
Elapsed ASTM days: 21  
Date of Last EDR Contact: 01/10/05

### **CA BOND EXP. PLAN: Bond Expenditure Plan**

Source: Department of Health Services  
Telephone: 916-255-2118

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89  
Date Made Active at EDR: 08/02/94  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94  
Elapsed ASTM days: 6  
Date of Last EDR Contact: 05/31/94

### **CA UST:**

#### **UST: Active UST Facilities**

Source: SWRCB  
Telephone: 916-341-5752

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 10/13/04  
Date Made Active at EDR: 11/03/04  
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 10/13/04  
Elapsed ASTM days: 21  
Date of Last EDR Contact: 01/10/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **VCP:** Voluntary Cleanup Program Properties

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/09/04

Date Made Active at EDR: 01/24/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/02/04

Elapsed ASTM days: 53

Date of Last EDR Contact: 12/02/04

### **INDIAN LUST:** Leaking Underground Storage Tanks on Indian Land

Source: Environmental Protection Agency

Telephone: 415-972-3372

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/03/04

Date Made Active at EDR: 11/03/04

Database Release Frequency: Varies

Date of Data Arrival at EDR: 10/06/04

Elapsed ASTM days: 28

Date of Last EDR Contact: 11/22/04

### **INDIAN LUST:** Leaking Underground Storage Tanks on Indian Land

Source: EPA Region 10

Telephone: 206-553-2857

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 12/21/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Varies

Date of Data Arrival at EDR: 12/21/04

Elapsed ASTM days: 44

Date of Last EDR Contact: 11/22/04

### **INDIAN UST:** Underground Storage Tanks on Indian Land

Source: EPA Region 9

Telephone: 415-972-3368

Date of Government Version: 11/02/04

Date Made Active at EDR: 12/13/04

Database Release Frequency: Varies

Date of Data Arrival at EDR: 11/03/04

Elapsed ASTM days: 40

Date of Last EDR Contact: 10/25/04

### **CA FID UST:** Facility Inventory Database

Source: California Environmental Protection Agency

Telephone: 916-445-6532

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94

Date Made Active at EDR: 09/29/95

Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 09/05/95

Elapsed ASTM days: 24

Date of Last EDR Contact: 12/28/98

### **HIST UST:** Hazardous Substance Storage Container Database

Source: State Water Resources Control Board

Telephone: 916-341-5700

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90

Date Made Active at EDR: 02/12/91

Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 01/25/91

Elapsed ASTM days: 18

Date of Last EDR Contact: 07/26/01

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

### **AST:** Aboveground Petroleum Storage Tank Facilities

Source: State Water Resources Control Board

Telephone: 916-341-5712

Registered Aboveground Storage Tanks.

Date of Government Version: 12/01/03

Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/01/04

Date of Next Scheduled EDR Contact: 01/31/05

### **CLEANERS:** Cleaner Facilities

Source: Department of Toxic Substance Control

Telephone: 916-225-0873

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes:

power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial laundries; laundry and garment services.

Date of Government Version: 11/29/04

Database Release Frequency: Annually

Date of Last EDR Contact: 01/04/05

Date of Next Scheduled EDR Contact: 04/04/05

### **CA WDS:** Waste Discharge System

Source: State Water Resources Control Board

Telephone: 916-341-5227

Sites which have been issued waste discharge requirements.

Date of Government Version: 12/20/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/21/04

Date of Next Scheduled EDR Contact: 03/21/05

### **DEED:** Deed Restriction Listing

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 10/04/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/04/05

Date of Next Scheduled EDR Contact: 04/04/05

### **NFA:** No Further Action Determination

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 11/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/02/04

Date of Next Scheduled EDR Contact: 02/28/05

### **EMI:** Emissions Inventory Data

Source: California Air Resources Board

Telephone: 916-322-2990

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/02  
Database Release Frequency: Varies

Date of Last EDR Contact: 10/22/04  
Date of Next Scheduled EDR Contact: 01/17/05

**REF: Unconfirmed Properties Referred to Another Agency**

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400

This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 11/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/02/04  
Date of Next Scheduled EDR Contact: 02/28/05

**SCH: School Property Evaluation Program**

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/02/04  
Date of Next Scheduled EDR Contact: 02/28/05

**NFE: Properties Needing Further Evaluation**

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400

This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 11/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/02/04  
Date of Next Scheduled EDR Contact: 02/28/05

**SLIC: Statewide SLIC Cases**

Source: State Water Resources Control Board  
Telephone: 916-341-5752

The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 10/13/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 01/10/05  
Date of Next Scheduled EDR Contact: 04/11/05

**HAZNET: Facility and Manifest Data**

Source: California Environmental Protection Agency  
Telephone: 916-255-1136

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02  
Database Release Frequency: Annually

Date of Last EDR Contact: 11/08/04  
Date of Next Scheduled EDR Contact: 02/07/05



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## LOCAL RECORDS

### **ALAMEDA COUNTY:**

#### **Local Oversight Program Listing of UGT Cleanup Sites**

Source: Alameda County Environmental Health Services

Telephone: 510-567-6700

Date of Government Version: 11/24/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/25/04

Date of Next Scheduled EDR Contact: 01/24/05

#### **Underground Tanks**

Source: Alameda County Environmental Health Services

Telephone: 510-567-6700

Date of Government Version: 11/24/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/25/04

Date of Next Scheduled EDR Contact: 01/24/05

### **CONTRA COSTA COUNTY:**

#### **Site List**

Source: Contra Costa Health Services Department

Telephone: 925-646-2286

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/13/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/29/04

Date of Next Scheduled EDR Contact: 02/28/05

### **FRESNO COUNTY:**

#### **CUPA Resources List**

Source: Dept. of Community Health

Telephone: 559-445-3271

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/21/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/08/04

Date of Next Scheduled EDR Contact: 02/07/05

### **KERN COUNTY:**

#### **Underground Storage Tank Sites & Tank Listing**

Source: Kern County Environment Health Services Department

Telephone: 661-862-8700

Kern County Sites and Tanks Listing.

Date of Government Version: 12/13/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

### **LOS ANGELES COUNTY:**

#### **List of Solid Waste Facilities**

Source: La County Department of Public Works

Telephone: 818-458-5185

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/03/03  
Database Release Frequency: Varies

Date of Last EDR Contact: 11/18/04  
Date of Next Scheduled EDR Contact: 02/14/05

### **City of El Segundo Underground Storage Tank**

Source: City of El Segundo Fire Department  
Telephone: 310-524-2236

Date of Government Version: 11/29/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/15/04  
Date of Next Scheduled EDR Contact: 02/14/05

### **City of Long Beach Underground Storage Tank**

Source: City of Long Beach Fire Department  
Telephone: 562-570-2543

Date of Government Version: 03/28/03  
Database Release Frequency: Annually

Date of Last EDR Contact: 11/29/04  
Date of Next Scheduled EDR Contact: 02/21/05

### **City of Torrance Underground Storage Tank**

Source: City of Torrance Fire Department  
Telephone: 310-618-2973

Date of Government Version: 12/03/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/15/04  
Date of Next Scheduled EDR Contact: 02/14/05

### **City of Los Angeles Landfills**

Source: Engineering & Construction Division  
Telephone: 213-473-7869

Date of Government Version: 03/01/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

### **HMS: Street Number List**

Source: Department of Public Works  
Telephone: 626-458-3517  
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 10/12/04  
Date of Next Scheduled EDR Contact: 02/14/05

### **Site Mitigation List**

Source: Community Health Services  
Telephone: 323-890-7806  
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/26/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 11/15/04  
Date of Next Scheduled EDR Contact: 02/14/05

### **San Gabriel Valley Areas of Concern**

Source: EPA Region 9  
Telephone: 415-972-3178  
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/06/99  
Date of Next Scheduled EDR Contact: N/A

### **MARIN COUNTY:**

#### **Underground Storage Tank Sites**

Source: Public Works Department Waste Management  
Telephone: 415-499-6647  
Currently permitted USTs in Marin County.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/16/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/01/04  
Date of Next Scheduled EDR Contact: 01/31/05

### NAPA COUNTY:

#### Sites With Reported Contamination

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269

Date of Government Version: 12/27/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/28/04  
Date of Next Scheduled EDR Contact: 03/28/05

#### Closed and Operating Underground Storage Tank Sites

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269

Date of Government Version: 12/27/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/27/04  
Date of Next Scheduled EDR Contact: 03/28/05

### ORANGE COUNTY:

#### List of Underground Storage Tank Cleanups

Source: Health Care Agency  
Telephone: 714-834-3446  
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/10/04  
Date of Next Scheduled EDR Contact: 03/07/05

#### List of Underground Storage Tank Facilities

Source: Health Care Agency  
Telephone: 714-834-3446  
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/10/04  
Date of Next Scheduled EDR Contact: 03/07/05

#### List of Industrial Site Cleanups

Source: Health Care Agency  
Telephone: 714-834-3446  
Petroleum and non-petroleum spills.

Date of Government Version: 12/01/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/10/04  
Date of Next Scheduled EDR Contact: 03/07/05

### PLACER COUNTY:

#### Master List of Facilities

Source: Placer County Health and Human Services  
Telephone: 530-889-7312  
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 10/04/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/20/04  
Date of Next Scheduled EDR Contact: 03/21/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RIVERSIDE COUNTY:

#### Listing of Underground Tank Cleanup Sites

Source: Department of Public Health

Telephone: 909-358-5055

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 12/06/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/17/05

Date of Next Scheduled EDR Contact: 04/18/05

#### Underground Storage Tank Tank List

Source: Health Services Agency

Telephone: 909-358-5055

Date of Government Version: 12/06/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/17/04

Date of Next Scheduled EDR Contact: 04/18/05

### SACRAMENTO COUNTY:

#### CS - Contaminated Sites

Source: Sacramento County Environmental Management

Telephone: 916-875-8406

Date of Government Version: 08/28/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/13/04

Date of Next Scheduled EDR Contact: 01/31/05

#### ML - Regulatory Compliance Master List

Source: Sacramento County Environmental Management

Telephone: 916-875-8406

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 10/15/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/02/04

Date of Next Scheduled EDR Contact: 01/31/05

### SAN BERNARDINO COUNTY:

#### Hazardous Material Permits

Source: San Bernardino County Fire Department Hazardous Materials Division

Telephone: 909-387-3041

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/17/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

### SAN DIEGO COUNTY:

#### Solid Waste Facilities

Source: Department of Health Services

Telephone: 619-338-2209

San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00

Database Release Frequency: Varies

Date of Last EDR Contact: 11/22/04

Date of Next Scheduled EDR Contact: 02/21/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Hazardous Materials Management Division Database

Source: Hazardous Materials Management Division

Telephone: 619-338-2268

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/29/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/10/05  
Date of Next Scheduled EDR Contact: 04/04/05

### SAN FRANCISCO COUNTY:

#### Local Oversight Facilities

Source: Department Of Public Health San Francisco County

Telephone: 415-252-3920

Date of Government Version: 12/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

#### Underground Storage Tank Information

Source: Department of Public Health

Telephone: 415-252-3920

Date of Government Version: 12/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

### SAN MATEO COUNTY:

#### Fuel Leak List

Source: San Mateo County Environmental Health Services Division

Telephone: 650-363-1921

Date of Government Version: 10/27/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/10/05  
Date of Next Scheduled EDR Contact: 04/11/05

#### Business Inventory

Source: San Mateo County Environmental Health Services Division

Telephone: 650-363-1921

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 08/19/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/10/05  
Date of Next Scheduled EDR Contact: 04/11/05

### SANTA CLARA COUNTY:

#### Fuel Leak Site Activity Report

Source: Santa Clara Valley Water District

Telephone: 408-265-2600

Date of Government Version: 06/30/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/28/04  
Date of Next Scheduled EDR Contact: 03/28/05



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **Hazardous Material Facilities**

Source: City of San Jose Fire Department  
Telephone: 408-277-4659

Date of Government Version: 10/01/03  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

### **SOLANO COUNTY:**

#### **Leaking Underground Storage Tanks**

Source: Solano County Department of Environmental Management  
Telephone: 707-421-6770

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

#### **Underground Storage Tanks**

Source: Solano County Department of Environmental Management  
Telephone: 707-421-6770

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/29/04  
Date of Next Scheduled EDR Contact: 02/14/05

### **SONOMA COUNTY:**

#### **Leaking Underground Storage Tank Sites**

Source: Department of Health Services  
Telephone: 707-565-6565

Date of Government Version: 10/25/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/25/04  
Date of Next Scheduled EDR Contact: 01/24/05

### **SUTTER COUNTY:**

#### **Underground Storage Tanks**

Source: Sutter County Department of Agriculture  
Telephone: 530-822-7500

Date of Government Version: 01/29/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **VENTURA COUNTY:**

#### **Inventory of Illegal Abandoned and Inactive Sites**

Source: Environmental Health Division  
Telephone: 805-654-2813  
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 11/22/04  
Date of Next Scheduled EDR Contact: 02/21/05

#### **Listing of Underground Tank Cleanup Sites**

Source: Environmental Health Division  
Telephone: 805-654-2813  
Ventura County Underground Storage Tank Cleanup Sites (LUST).

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/30/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/17/04  
Date of Next Scheduled EDR Contact: 03/14/05

### Underground Tank Closed Sites List

Source: Environmental Health Division  
Telephone: 805-654-2813

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 09/29/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/14/05  
Date of Next Scheduled EDR Contact: 04/11/05

### Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

Source: Ventura County Environmental Health Division  
Telephone: 805-654-2813

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/17/04  
Date of Next Scheduled EDR Contact: 03/14/05

### YOLO COUNTY:

#### Underground Storage Tank Comprehensive Facility Report

Source: Yolo County Department of Health  
Telephone: 530-666-8646

Date of Government Version: 11/23/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/17/05  
Date of Next Scheduled EDR Contact: 04/18/05

### California Regional Water Quality Control Board (RWQCB) LUST Records

#### LUST REG 1: Active Toxic Site Investigation

Source: California Regional Water Quality Control Board North Coast (1)  
Telephone: 707-576-2220

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 11/22/04  
Date of Next Scheduled EDR Contact: 02/21/05

#### LUST REG 2: Fuel Leak List

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)  
Telephone: 510-286-0457

Date of Government Version: 09/30/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/10/05  
Date of Next Scheduled EDR Contact: 04/11/05

#### LUST REG 3: Leaking Underground Storage Tank Database

Source: California Regional Water Quality Control Board Central Coast Region (3)  
Telephone: 805-549-3147

Date of Government Version: 05/19/03  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 11/17/04  
Date of Next Scheduled EDR Contact: 02/14/05

#### LUST REG 4: Underground Storage Tank Leak List

Source: California Regional Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6600

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/07/04  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/27/04  
Date of Next Scheduled EDR Contact: 03/28/05

**LUST REG 5:** Leaking Underground Storage Tank Database  
Source: California Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-3291

Date of Government Version: 10/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/22/04  
Date of Next Scheduled EDR Contact: 01/30/05

**LUST REG 6L:** Leaking Underground Storage Tank Case Listing  
Source: California Regional Water Quality Control Board Lahontan Region (6)  
Telephone: 916-542-5424  
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

**LUST REG 6V:** Leaking Underground Storage Tank Case Listing  
Source: California Regional Water Quality Control Board Victorville Branch Office (6)  
Telephone: 760-346-7491

Date of Government Version: 08/09/04  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

**LUST REG 7:** Leaking Underground Storage Tank Case Listing  
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)  
Telephone: 760-346-7491

Date of Government Version: 02/26/04  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/27/04  
Date of Next Scheduled EDR Contact: 03/28/05

**LUST REG 8:** Leaking Underground Storage Tanks  
Source: California Regional Water Quality Control Board Santa Ana Region (8)  
Telephone: 951-782-4130  
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 11/01/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 11/10/04  
Date of Next Scheduled EDR Contact: 02/07/05

**LUST REG 9:** Leaking Underground Storage Tank Report  
Source: California Regional Water Quality Control Board San Diego Region (9)  
Telephone: 858-467-2980  
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 10/18/04  
Date of Next Scheduled EDR Contact: 01/17/05

### California Regional Water Quality Control Board (RWQCB) SLIC Records

**SLIC REG 1:** Active Toxic Site Investigations  
Source: California Regional Water Quality Control Board, North Coast Region (1)  
Telephone: 707-576-2220

Date of Government Version: 04/03/03  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 02/21/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**SLIC REG 2:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Regional Water Quality Control Board San Francisco Bay Region (2)

Telephone: 510-286-0457

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/30/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/10/05

Date of Next Scheduled EDR Contact: 04/11/05

**SLIC REG 3:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: California Regional Water Quality Control Board Central Coast Region (3)

Telephone: 805-549-3147

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/18/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 11/15/04

Date of Next Scheduled EDR Contact: 02/14/05

**SLIC REG 4:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Region Water Quality Control Board Los Angeles Region (4)

Telephone: 213-576-6600

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/17/04

Database Release Frequency: Varies

Date of Last EDR Contact: 10/25/04

Date of Next Scheduled EDR Contact: 01/24/05

**SLIC REG 5:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Regional Water Quality Control Board Central Valley Region (5)

Telephone: 916-464-3291

Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 10/01/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/04/05

Date of Next Scheduled EDR Contact: 04/04/05

**SLIC REG 6L:** SLIC Sites

Source: California Regional Water Quality Control Board, Lahontan Region

Telephone: 530-542-5574

Date of Government Version: 09/07/04

Database Release Frequency: Varies

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

**SLIC REG 6V:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Regional Water Quality Control Board, Victorville Branch

Telephone: 619-241-6583

Date of Government Version: 04/01/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/17/04

Date of Next Scheduled EDR Contact: 04/04/05

**SLIC REG 7:** SLIC List

Source: California Regional Quality Control Board, Colorado River Basin Region

Telephone: 760-346-7491

Date of Government Version: 11/24/04

Database Release Frequency: Varies

Date of Last EDR Contact: 11/22/04

Date of Next Scheduled EDR Contact: 02/21/05

**SLIC REG 8:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: California Region Water Quality Control Board Santa Ana Region (8)

Telephone: 951-782-3298

Date of Government Version: 07/01/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/07/05

Date of Next Scheduled EDR Contact: 04/04/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing**

Source: California Regional Water Quality Control Board San Diego Region (9)

Telephone: 858-467-2980

Date of Government Version: 09/10/04

Database Release Frequency: Annually

Date of Last EDR Contact: 11/29/04

Date of Next Scheduled EDR Contact: 02/28/05

### **EDR PROPRIETARY HISTORICAL DATABASES**

**Former Manufactured Gas (Coal Gas) Sites:** The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

#### **Disclaimer Provided by Real Property Scan, Inc.**

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

### **BROWNFIELDS DATABASES**

#### **VCP: Voluntary Cleanup Program Properties**

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/02/04

Date of Next Scheduled EDR Contact: 02/28/05

#### **US BROWNFIELDS: A Listing of Brownfields Sites**

Source: Environmental Protection Agency

Telephone: 202-566-2777

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A

Date of Next Scheduled EDR Contact: N/A



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

#### **Electric Power Transmission Line Data**

Source: PennWell Corporation

Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

#### **AHA Hospitals:**

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

#### **Medical Centers: Provider of Services Listing**

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

#### **Nursing Homes**

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

#### **Public Schools**

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

#### **Private Schools**

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

#### **Daycare Centers: Licensed Facilities**

Source: Department of Social Services

Telephone: 916-657-4041

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### STREET AND ADDRESS INFORMATION

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

NORTH FORK SITE  
17488 GOLDEN STATE BLVD  
MADERA, CA 93637

### **TARGET PROPERTY COORDINATES**

Latitude (North):	37.004902 - 37° 0' 17.6"
Longitude (West):	120.121399 - 120° 7' 17.0"
Universal Transverse Mercator:	Zone 10
UTM X (Meters):	756146.2
UTM Y (Meters):	4099087.5
Elevation:	252 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.



## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

Target Property County  
MADERA, CA

FEMA Flood  
Electronic Data  
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0601700605B

Additional Panels in search area: 0601700600B  
0601720005B

### NATIONAL WETLAND INVENTORY

NWI Quad at Target Property  
KISMET

NWI Electronic  
Data Coverage  
YES - refer to the Overview Map and Detail Map

### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### *Site-Specific Hydrogeological Data\*:*

Search Radius: 1.25 miles  
Status: Not found

### AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

\* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.



## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q (decoded above as Era, System & Series)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### **DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: SAN JOAQUIN

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	16 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.50 Min: 5.60
2	16 inches	19 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10
3	19 inches	28 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.06 Min: 0.01	Max: 7.80 Min: 6.10
4	28 inches	60 inches	indurated	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00
5	60 inches	70 inches	stratified	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.20 Min: 0.06	Max: 7.80 Min: 6.10

### OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: loam  
fine sandy loam  
clay

Surficial Soil Types: loam  
fine sandy loam  
clay

Shallow Soil Types: clay loam  
fine sandy loam  
gravelly - loam  
clay  
indurated

Deeper Soil Types: gravelly - sandy loam  
weathered bedrock  
sandy loam

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS0142542	1/2 - 1 Mile SW
2	USGS0142632	1/2 - 1 Mile East
3	USGS0142607	1/2 - 1 Mile SSW
A4	USGS0142577	1/2 - 1 Mile NE
5	USGS0142608	1/2 - 1 Mile SW
7	USGS0142635	1/2 - 1 Mile West
8	USGS0142663	1/2 - 1 Mile WNW

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

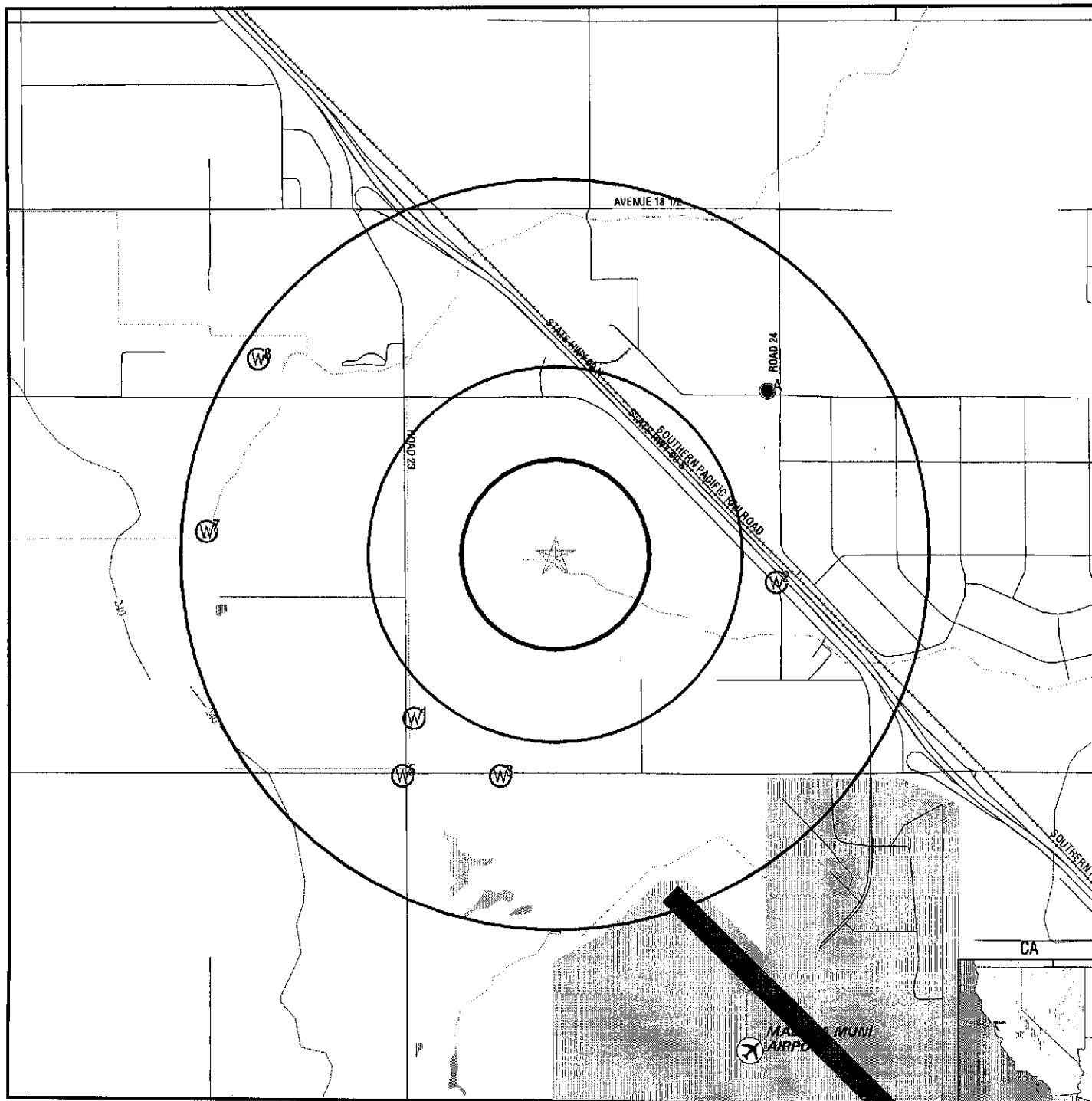
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A6	10253	1/2 - 1 Mile NE

# PHYSICAL SETTING SOURCE MAP - 01359424.1r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

**TARGET PROPERTY:** North Fork Site  
**ADDRESS:** 17488 Golden State Blvd  
**CITY/STATE/ZIP:** Madera CA 93637  
**LAT/LONG:** 37.0049 / 120.1214

**CUSTOMER:** AES  
**CONTACT:** Pete Connelly  
**INQUIRY #:** 01359424.1r  
**DATE:** February 11, 2005 4:15 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

1  
SW  
1/2 - 1 Mile  
Lower

FED USGS USGS0142542

Agency:	USGS	Site ID:	365955120073801
Site Name:	011S017E04N001M		
Dec. Latitude:	36.99856		
Dec. Longitude:	-120.12822		
Coord Sys:	NAD83		
State:	CA		
County:	Madera County		
Altitude:	241.00		
Hydrologic code:	18040001		
Topographic:	Not Reported		
Site Type:	Ground-water other than Spring		
Const Date:	Not Reported	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	90.0		
Hole depth:	Not Reported	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 0

2  
East  
1/2 - 1 Mile  
Higher

FED USGS USGS0142632

Agency:	USGS	Site ID:	370014120063501
Site Name:	011S017E04J001M		
Dec. Latitude:	37.00384		
Dec. Longitude:	-120.11072		
Coord Sys:	NAD83		
State:	CA		
County:	Madera County		
Altitude:	250.00		
Hydrologic code:	18040001		
Topographic:	Not Reported		
Site Type:	Ground-water other than Spring		
Const Date:	19650101	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	345		
Hole depth:	Not Reported	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-03-01	89.00	



# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

3

SSW  
1/2 - 1 Mile  
Lower

FED USGS USGS0142607

Agency:	USGS	Site ID:	365947120072301
Site Name:	011S017E09D001M		
Dec. Latitude:	36.99634		
Dec. Longitude:	-120.12405		
Coord Sys:	NAD83		
State:	CA		
County:	Madera County		
Altitude:	245.00		
Hydrologic code:	18040001		
Topographic:	Not Reported		
Site Type:	Ground-water other than Spring		
Const Date:	19560101	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	160		
Hole depth:	Not Reported	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 0

A4

NE  
1/2 - 1 Mile  
Higher

FED USGS USGS0142577

Agency:	USGS	Site ID:	370039120063701
Site Name:	011S017E04A001M		
Dec. Latitude:	37.01078		
Dec. Longitude:	-120.11128		
Coord Sys:	NAD83		
State:	CA		
County:	Madera County		
Altitude:	225.00		
Hydrologic code:	18040001		
Topographic:	Not Reported		
Site Type:	Ground-water other than Spring		
Const Date:	Not Reported	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	Not Reported		
Hole depth:	Not Reported	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1965-03-01	68.00	

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database EDR ID Number

5  
SW  
1/2 - 1 Mile  
Lower

FED USGS USGS0142608

Agency:	USGS	Site ID:	365947120074001
Site Name:	011S017E08A001M		
Dec. Latitude:	36.99634		
Dec. Longitude:	-120.12878		
Coord Sys:	NAD83		
State:	CA		
County:	Madera County		
Altitude:	240.00		
Hydrologic code:	18040001		
Topographic:	Not Reported		
Site Type:	Ground-water other than Spring		
Const Date:	Not Reported	Inven Date:	Not Reported
Well Type:	Single well, other than collector or Ranney type		
Primary Aquifer:	Not Reported		
Aquifer type:	Not Reported		
Well depth:	Not Reported		
Hole depth:	Not Reported	Source:	Not Reported
Project no:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-12-01	77.00	

A6  
NE  
1/2 - 1 Mile  
Higher

CA WELLS 10253

## Water System Information:

Prime Station Code:	10S/17E-33Q01 M	User ID:	20C
FRDS Number:	2000658001	County:	Madera
District Number:	50	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	370042.0 1200636.0	Precision:	100 Feet (one Second)
Source Name:	WELL 01		
System Number:	2000658		
System Name:	VALLEY GRAIN PRODUCTS WATER		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

7  
West  
1/2 - 1 Mile  
Lower

FED USGS USGS0142635

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency: USGS Site ID: 370021120081401  
 Site Name: 011S017E05F001M  
 Dec. Latitude: 37.00578  
 Dec. Longitude: -120.13822  
 Coord Sys: NAD83  
 State: CA  
 County: Madera County  
 Altitude: 241.00  
 Hydrologic code: 18040001  
 Topographic: Not Reported  
 Site Type: Ground-water other than Spring  
 Const Date: Not Reported Inven Date: Not Reported  
 Well Type: Single well, other than collector or Ranney type  
 Primary Aquifer: Not Reported  
 Aquifer type: Not Reported  
 Well depth: Not Reported  
 Hole depth: Not Reported Source: Not Reported  
 Project no: Not Reported

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-12-01	80.00	

8  
 WNW  
 1/2 - 1 Mile  
 Lower

FED USGS USGS0142663

Agency: USGS Site ID: 370045120080501  
 Site Name: 010S017E32Q001M  
 Dec. Latitude: 37.01245  
 Dec. Longitude: -120.13572  
 Coord Sys: NAD83  
 State: CA  
 County: Madera County  
 Altitude: 245.00  
 Hydrologic code: 18040001  
 Topographic: Not Reported  
 Site Type: Ground-water other than Spring  
 Const Date: 19460101 Inven Date: Not Reported  
 Well Type: Single well, other than collector or Ranney type  
 Primary Aquifer: Not Reported  
 Aquifer type: Not Reported  
 Well depth: 212  
 Hole depth: Not Reported Source: Not Reported  
 Project no: Not Reported

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-12-01	88.00	

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: CA Radon

### Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
93637	10	0	0.00

Federal EPA Radon Zone for MADERA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93637

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### **USGS 7.5' Digital Elevation Model (DEM)**

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

## HYDROGEOLOGIC INFORMATION

### **AQUIFLOW<sup>®</sup> Information System**

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### **Geologic Age and Rock Stratigraphic Unit**

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### **STATSGO: State Soil Geographic Database**

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

## ADDITIONAL ENVIRONMENTAL RECORD SOURCES

### **FEDERAL WATER WELLS**

#### **PWS: Public Water Systems**

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### **PWS ENF: Public Water Systems Violation and Enforcement Data**

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### **USGS Water Wells: USGS National Water Inventory System (NWIS)**

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.



## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### STATE RECORDS

#### California Drinking Water Quality Database

Source: Department of Health Services

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

#### California Oil and Gas Well Locations for District 2, 3, 5 and 6

Source: Department of Conservation

Telephone: 916-323-1779

### RADON

#### State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

**California Earthquake Fault Lines:** The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

# ***APPENDIX D***

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## ***PROPERTY OWNER QUESTIONNAIRE***

February 16, 2005

Russ Shaw (owners representative)

**RE: Phase I Environmental Site Assessment for North Fork Rancheria**

Dear Mr. Shaw:

You have been identified as the legal representative for the legal owner of the following APN numbers:

Assessors Parcel Number (APN)	Acres
033-030-010-000	36.01
033-030-011-000	40.66
033-030-012-000	38.26
033-030-013-000	42.23
033-030-014-000	38.92
033-030-015-000	56.44
033-030-017-000	52.97
<b>TOTAL</b>	<b>305.49</b>

Please complete the questionnaire below with regard to the indicated parcel number. You are being asked to provide this information and insight to assist in the preparation of an environmental site assessment for this property. Please provide as much information as you can to assist in this effort and feel free to attach extra sheets/reports if the space provided is insufficient.

Please return the completed form to:

Analytical Environmental Services  
Attn: Pete Connolly  
2021 "N" Street, Suite 200  
Sacramento, CA 95814

Telephone (916) 447-3479  
Fax (916) 447-1665

Thank you for your help and cooperation.

Question	Answer	Responses to "Yes" Questions
1. Is the property or any adjoining property currently used for industrial purposes?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	NO RECENT SITE VISITS
2. To the best of your knowledge, has the property or any adjoining property been used for industrial purposes in the past?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
3. Is the property or any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	NO RECENT SITE VISITS
4. To the best of your knowledge, has the property or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
5. Has fill dirt been brought onto the property that originated from a contaminated site or that is of an unknown origin?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	

<p>6. Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than five gallons (19 liters) in the aggregate, stored on or used at the property or at the facility?</p>	<p>New? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>7. Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gallon [208 liters]) or sacks of chemicals located on the property or at the facility?</p>	<p>New? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>8. Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?</p>	<p>New? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>9. Is there currently, or to the best of your knowledge has there been previously, any areas of stained soil on the property?</p>	<p>New? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>10. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property?</p>	<p>New? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES          Past? <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	<p>AN ABOVE GROUND FUEL TANK WAS SITUATED ON A PLATFORM NEAR THE BARN FOR FARM EQUIPMENT</p>



11. Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	New?: <del>NO</del> UNK YES Past?: <del>NO</del> UNK YES	
12. Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?	New?: <del>NO</del> UNK YES Past?: <del>NO</del> UNK YES	
13. If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environment/health agency?	<del>NO</del> UNK YES	
14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	<del>NO</del> UNK YES	

15. Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
16. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
18. Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	

19. To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried, and/or burned on the property?	NO <u>UNK</u> YES	
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	NO <u>UNK</u> YES	

21. How do you currently use the property and how have you used the property in the past (please be specific).

FARMLAND - LEASED TO DRY  
FARMER IN PAST...  
NOW UNWORKED

22. What is your understanding of how the property was used before your ownership/occupancy?

SAME - LOW VOLUME  
FARMLANDS

Completed by:

RUSSELL SHAW

Phone:

(520) 906-4984

Date completed:

3/7/05

Relation to property:

owner

operator

☒ manager

tenant

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*Phase I Environmental Site Assessment (North Fork Rancheria Site)*



PHASE I  
ENVIRONMENTAL SITE ASSESSMENT

**NORTH FORK RANCHERIA**

**SEPTEMBER 2005**

Prepared for:  
North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643

PHASE I  
ENVIRONMENTAL SITE ASSESSMENT

**NORTH FORK RANCHERIA**

**SEPTEMBER 2005**

Prepared For:

North Fork Rancheria of Mono Indians  
P.O. Box 929  
North Fork, CA 93643

Prepared By:

Analytical Environmental Services  
2021 "N" Street, Suite 200  
Sacramento, Ca 95814  
Phone (916) 447-3479  
Fax (916) 447-1665  
[www.analyticalcorp.com](http://www.analyticalcorp.com)



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# ***SECTION 1.0***

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## ***INTRODUCTION***

# **SECTION 1.0**

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## **INTRODUCTION**

### **1.1 PURPOSE**

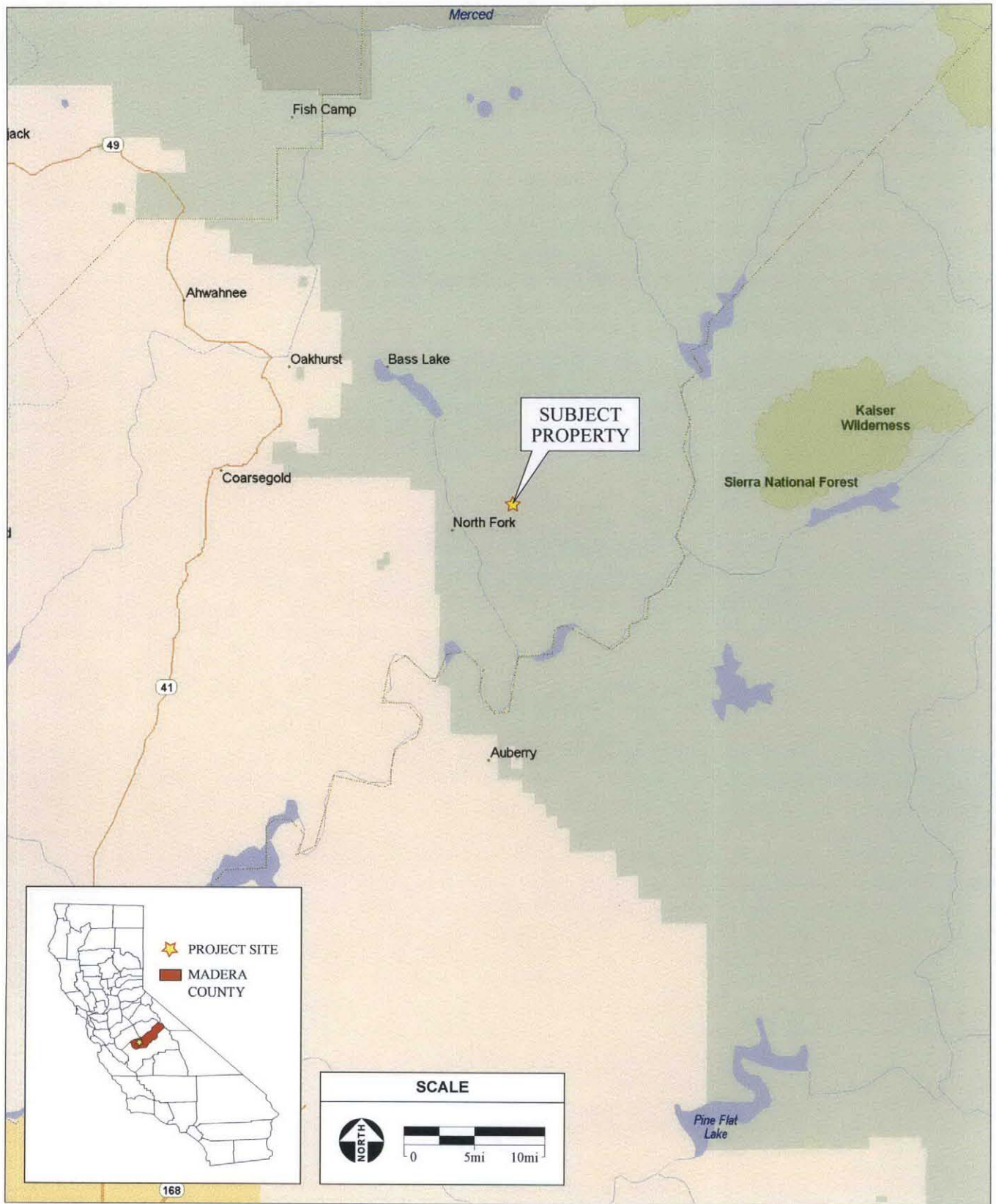
Analytical Environmental Services (AES) has been retained by the North Fork Rancheria of Mono Indians (hereafter, "Tribe") to prepare this Phase I Environmental Site Assessment (ESA) in accordance with the American Society for Testing and Materials (ASTM) Standard Practice E 1527-00 and Bureau of Indian Affairs (BIA) guidelines. The North Fork Rancheria (Subject Property) is approximately 80 acres and is located in unincorporated Madera County, approximately 3 miles west of the foothills community of North Fork, east of Mammoth Pool Road, approximately 15 miles west of State Route 41, and approximately 10 miles southeast of the City of Oakhurst, California (**Figure 1**).

The purpose of this assessment is to identify environmental conditions that may affect future uses of the Subject Property. AES has performed this assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-00, which specifies the appropriate inquiry requirements for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The assessment covers the Subject Property, adjacent areas, and surrounding known sources of contamination, up to 2.0 miles from a point roughly in the middle of the Subject Property. Site reconnaissance inspections of the Subject Property and adjacent properties were performed, local agencies were contacted and relevant database listings of hazardous waste sites, hazardous waste generators, and underground storage tanks were reviewed. AES also reviewed historical aerial photographs and topographic maps for the Subject Property. Years available for review were 1983 and 1993 (EDR, 2005).

### **1.2 RECOGNIZED ENVIRONMENTAL CONDITIONS**

The term "recognized environmental condition" (REC) refers to the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or





petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Additionally, the term "historical REC" refers to an environmental condition associated with the Subject Property, including the past release of any hazardous substance or petroleum product, which in the past would have been considered a REC, however such condition has been remediated. Historical REC's are included in this Phase I ESA (ASTM, 2000).

### **1.3 LIMITATIONS AND EXCEPTIONS**

No Environmental Site Assessment can completely eliminate uncertainty regarding the potential for REC's in connection with a property. Conformance of this assessment with ASTM Standard Practice E 1527-00 will reduce, but not eliminate, uncertainty regarding the potential for REC's in connection with the Subject Property. While AES has made every effort to discover and interpret available historical and current information on the property within the time available, the possibility for undiscovered contamination to be present remains. AES's report is a best-effort collection and interpretation of available information consistent with industry standards for the completion of Phase I ESAs.

This site assessment is based on a regulatory agency records review, a site reconnaissance of the Subject Property and adjacent properties, and telephone interviews with a representative from the North Fork Rancheria and residents living on the Subject Property. Physical testing of soil or groundwater was not within the scope of this assessment. Surveys for the presence of asbestos containing materials (ACM) were not conducted.

### **1.4 METHODOLOGY**

A variety of data sources and agencies were consulted in completing this Phase I ESA. The following sections describe the methods used and the data sources consulted to accomplish each task.

#### **1.4.1 Historical Review**

Previous land uses and history of the study area were researched in an effort to identify potential sources of hazardous substances at or near the Subject Property. Historical aerial photographs (**Appendix A**) and topographic maps (**Appendix B**) of the Subject Property and immediate vicinity were reviewed and interpreted. The aerial photos were examined in order to provide indications of the presence of aboveground storage tanks, industrial buildings, and gas station

canopies or pump islands, or other indications of bulk hazardous material storage within the study areas (EDR, 2005).

### **1.4.2 Database Searches**

Database search requests were made for records of known storage tank sites and known sites of hazardous materials generation, storage and/or contamination. Requests were made for Federal, State, and local agency lists of: (a) known or potential hazardous waste sites and landfills; (b) sites currently under investigation for environmental violations; (c) sites which manufacture, generate, use, store, and/or dispose of hazardous materials or hazardous wastes; (d) sites which have underground storage tanks (UST's); and (e) sites with recorded violations of regulations concerning UST's and hazardous materials/hazardous wastes. The database search is intended to identify facilities that may have the potential to impact surface and/or subsurface conditions on the Subject Property. A full listing of sites within the vicinity of the Subject Property is included in the database report (**Appendix C**).

### **1.4.3 Walk-Over Site Reconnaissance**

Pete Connelly from AES performed a reconnaissance inspection of the Subject Property and adjacent properties on February 15, 2005. **Section 3.0** describes observed conditions on the Subject Property during the site reconnaissance visit. Adjacent properties were visually inspected to the extent possible without trespassing on private property. There were no visible conditions present on adjacent properties that would affect surface and/or subsurface conditions on the Subject Property.

## **1.5 CONCLUSIONS AND RECOMMENDATIONS**

Based on information gathered while conducting this Phase I ESA, AES observed the following environmental conditions:

- The Subject Property currently has mixed uses as a residential and undeveloped parcel.
- Several empty 55-gallon drums were observed in an area adjacent to one of the residences on the Subject Property. The drums previously contained hydraulic fluid for small-scale clearing and logging activities on the Subject Property (McDonald, 2005).
- An empty 500-gallon aboveground storage tank (AST) was present on the Subject Property. According to the resident nearest the AST, the tank has not contained fuel while on the Subject Property (McDonald, 2005).

- There are two separate domestic wells that serve the two individual residences on the Subject Property. According to the resident (Williams, 2005), the domestic water has an unpleasant taste and odor. A member of the Tribe (Roberts, 2005) described the drinking water as having an oily sheen on the surface. Title 22 water quality testing was performed in 1998 and 2004. The water was tested for general minerals, inorganic chemicals, and fecal coliform (**Appendix E**). The water was not tested for total petroleum hydrocarbons (TPH) or volatile organic constituents (VOC's).
- There is a pole-mounted transformer adjacent to one of the residences on the Subject Property. The transformer appears to be of an age where polychlorinated bi-phenols (PCB's) could be present, however, there were no signs of leaks on the transformer.

Based on the findings and conclusions of this Phase I Environmental Site Assessment, AES has the following recommendations:

- If the site is to be developed, groundwater and soil samples should be collected in the area of the domestic well. Soil samples, groundwater samples, and water from the well should be tested for TPH and VOC's.
- If contaminated soil and/or groundwater is encountered or if suspected contamination is encountered during site development, work should be halted in the area, and the type and extent of the contamination shall be determined. A qualified professional, in consultation with appropriate regulatory agencies, should then develop an appropriate method to remediate the contamination. If necessary, the Tribe should implement a remediation plan in conjunction with continued construction.

## ***SECTION 2.0***

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### ***SITE DESCRIPTION***

## **SECTION 2.0**

---

### **SITE DESCRIPTION**

#### **2.1 LOCATION AND LEGAL DESCRIPTION**

The 80-acre Subject Property is located on Mission Drive within an unincorporated area of Madera County, approximately 3 miles west of the community of North Fork, east of Mammoth Pool Road, approximately 15 miles west of State Route 41, and approximately 10 miles south east of the City of Oakhurst, California (**Figure 2**).

#### **2.2 SITE AND VICINITY CHARACTERISTICS**

The Subject Property is the North Fork Indian Rancheria and is held in trust by the U.S. Government. The Sierra National Forest surrounds the Subject Property. Access to the Subject Property is via a gravel/dirt road that enters the Subject Property on the northwest border off Mission Drive.

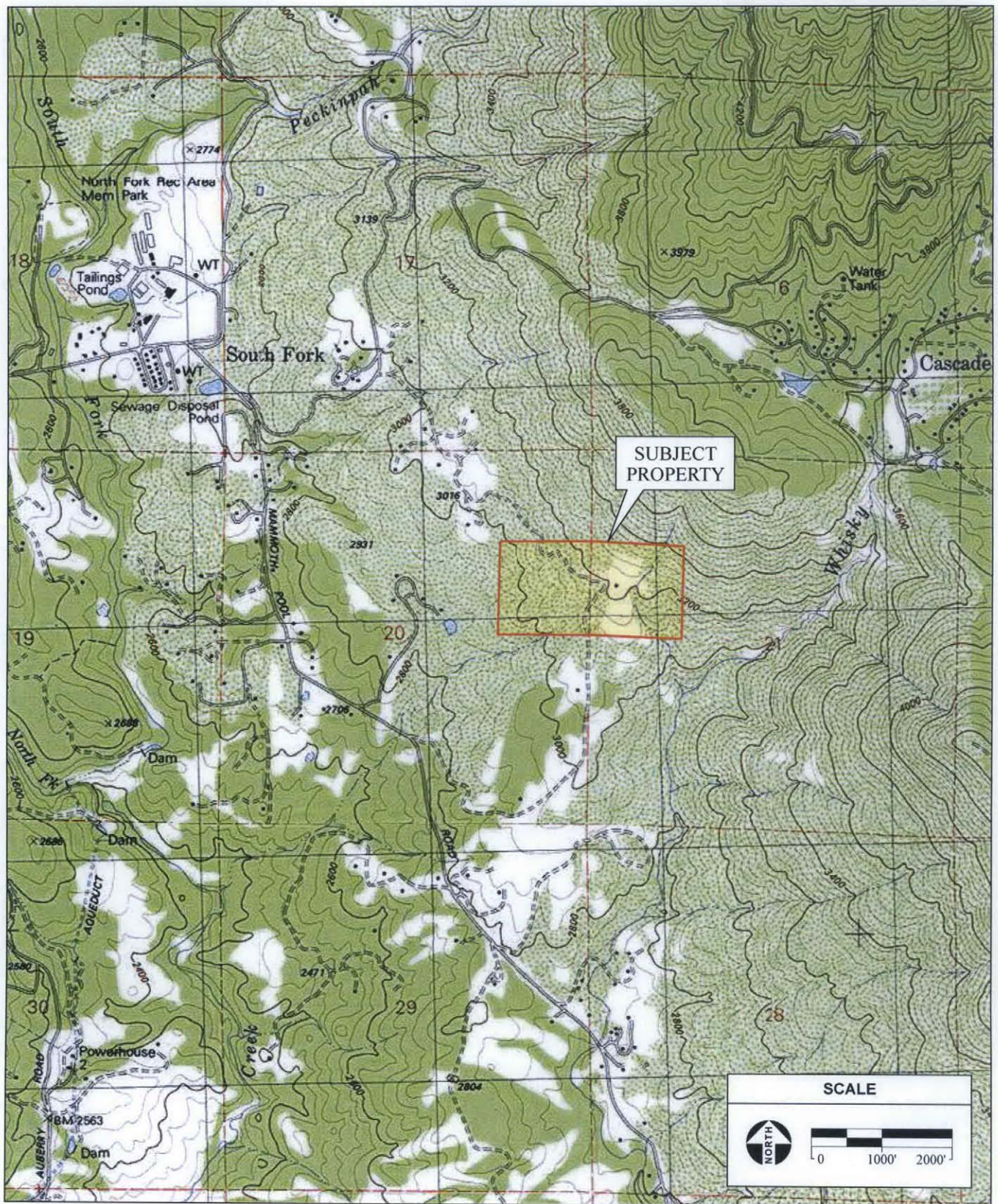
The Subject Property is located on a southwest-facing slope with elevations that range from approximately 3000 feet above mean sea level (msl) on the southwest border to approximately 3400 feet above msl on the northwest border.

#### **2.3 HYDROLOGY**

There are two separate domestic wells that serve the two individual residences on the Subject Property. According to the resident (Williams, 2005), the domestic water has an unpleasant taste and odor. Title 22 water quality testing was performed in 1998 and 2004. The water was tested for general minerals, inorganic chemicals, and fecal coliform (**Appendix E**).

There were no pits, ponds, or lagoons observed on the Subject Property. Storm water runoff follows the natural contours of the Subject Property, generally flowing towards the southwest. Runoff eventually flows into Willow Creek, which is located approximately 1 mile southwest of the Subject Property. Willow Creek eventually flows into the San Joaquin River.





SOURCE: "Cascadel, CA" USGS 7.5 Minute Topographic Quadrangle, Sections 20 & 21, T8S, R23E Mt. Diablo Baseline and Meridian ; AES, 2005

North Fork Rancheria Phase I ESA / 204502 ■

**Figure 2**  
Site and Vicinity



## 2.4 GEOLOGY AND SOIL

The stratigraphic unit is Mesozoic, which is in the Cretaceous system in the lower Cretaceous granitic rock series. The soils in the project area are primarily comprised of Holland sandy loam. Holland sandy loam is characterized as a sandy loam with moderate infiltration rates. Holland sandy loam is described as a moderately well drained soil with an intermediate water holding capacity (EDR, 2005).

## 2.5 DESCRIPTION OF IMPROVEMENTS ON THE SUBJECT PROPERTY

Pete Connelly from AES performed a site reconnaissance of the Subject Property on February 15, 2005. **Section 3.0** describes site conditions at the time of the site reconnaissance.

There are currently two residences located on the Subject Property. Both appeared to be prefabricated homes. **Figures 3 through 5** are photographs showing site conditions at the time of the site visit.

## 2.6 HISTORICAL USES

Pete Connelly from AES interviewed one of the current residents of the Subject Property. There is no history of ownership and/or occupation of the Subject Property by commercial businesses that use and/or generate hazardous materials. Historic uses of the Subject Property appear to have been very much as they are today, residential and undeveloped.

## 2.7 AERIAL PHOTOGRAPHS

Historical aerial photographs were reviewed for the Subject Property. Years available for review were 1983 (1"=690') and 1993 (1"=666'). Historical aerial photographs were of varying scale and clarity. Historical aerial images offer detailed review of previous land uses on the Subject Property and adjacent properties. Additionally, historical topographic maps can confirm the presence of structures, such as buildings, wells, pipelines, etc. The review of the aerial photographs and topographic maps is summarized by year below.

### 1983

The 1983 aerial photo shows the Subject Property as an undeveloped parcel. The residences that are present on the Subject Property are not visible in the photo. The Subject Property is wooded with the exception of a cleared area in the center of the Subject Property. The unimproved road that crosses the Subject Property is visible in the aerial photo. Adjacent properties and outlying areas are heavily wooded and undeveloped. There are no visible conditions in the aerial photo that would result in gross contamination.

**1993**

One of the residences that are currently on the Subject Property is slightly visible in the 1993 aerial photo. As in the previous photo, the Subject Property appears heavily wooded with the exception of a cleared area in the center of the Subject Property. The road that crosses the Subject Property is also visible in the 1993 aerial photo. There are no signs of gross contamination on the Subject Property.

**2.8 SANBORN FIRE INSURANCE MAPS**

Sanborn Fire Insurance Maps do not provide coverage of the Subject Property.

## ***SECTION 3.0***

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### ***SITE RECONNAISSANCE AND INTERVIEWS***

## SECTION 3.0

### SITE RECONNAISSANCE AND INTERVIEWS

---

#### 3.1 OBJECTIVE

The objective of the site reconnaissance was to identify current or historic hazardous materials involvement on the Subject Property or in the vicinity of the Subject Property. Hazardous materials involvement, or signature environmental conditions include the presence or likely presence of any hazardous materials or petroleum products that indicate an existing release, past release, or a threat of release into any structure on the Subject Property, soil, or groundwater. Signs of possible hazardous materials involvement would include any indications of underground storage tanks existing on the Subject Property, stained soils and/or unusual odors originating from the Subject Property, indications of an excavation or removal of soils, including patched asphalt and large debris piles, and other obvious signs of hazardous materials involvement.

Interviews included contacting individuals familiar with the Subject Property and knowledgeable of its historic and existing conditions relative to hazardous materials.

#### 3.2 SITE RECONNAISSANCE FINDINGS

Pete Connelly from AES conducted a site reconnaissance of the Subject Property on February 15, 2005. Adjacent properties were observed to the extent possible without trespassing on private property. **Figures 3 through 5** show site conditions at the time of the site visit. Notable features and environmental conditions are summarized below:

- Access to the Subject Property is through a dirt/gravel road maintained by the Bureau of Indian Affairs (BIA) (**Photos 1 and 2**).
- The Subject Property is heavily wooded and is surrounded by the Sierra National Forest (**Photos 3 through 6**).
- There were two occupied residences and an empty mobile home located on the Subject Property (**Photos 7 through 9**).

- There were several empty 55-gallon drums and non-hazardous debris located adjacent to the residence shown in **Photo 8**. The drums previously contained hydraulic fluids that were used for tree cutting and clearing by the current resident (McDonald, 2005). There were no soil stains around the drums (**Photos 10 through 13**).
- There were several debris piles located adjacent to the residence shown in **Photo 8**. The debris was composed of non-hazardous metal and wood (**Photos 11 through 13**).
- There were several vehicles in various forms of disrepair being stored adjacent to the house shown in **Photo 8** (**Photo 14**).
- A utility pole with transformer was located adjacent to the residence shown in **Photo 7**. The transformer did not appear to have any leaks (**Photo 15**).
- An empty 500-gallon aboveground storage tank (AST) was located adjacent to the residence shown in **Photo 8**. The tank belongs to the current resident that resides on the Subject Property. According to the current resident, the tank has always been empty (**Photo 16**) (McDonald, 2005). There were no signs of leaks or stains in the area adjacent to the AST.

During the site reconnaissance, AES did not observe any obvious signs of gross contamination on the Subject Property.

### **ADJACENT PROPERTIES**

Adjacent properties were observed to the extent feasible without trespassing on private property. The purpose was to determine if current/historical adjacent land uses could affect future uses of the Subject Property. The following list identifies adjacent land uses.

**North:** Undeveloped parcels and Sierra National Forrest.

**South:** Private residences, undeveloped parcels, and Sierra National Forrest.

**East:** Undeveloped parcels and Sierra National Forrest.

**West:** Private residences, undeveloped parcels, and Sierra National Forrest.

During the site reconnaissance, there did not appear to be any observable adjacent land uses that would affect the planned use of the Subject Property.

### 3.3 INTERVIEWS AND QUESTIONNAIRES

A total of five Standard Phase I property owner questionnaires were sent to the Tribal members that currently reside on the Subject Property or are aware of the history of the (**Appendix D**). The questionnaires were sent via U.S. Mail with stamped return envelopes on April 29, 2005. The Tribal members as of June 28, 2005 returned two of the questionnaires to AES. Additionally, the Tribal Administrator completed one of the questionnaires. AES also interviewed the Tribal member that occupies the residence shown in **Photo 16** (McDonald). Previous uses of the Subject Property according to Mr. McDonald were similar to the present uses, residential and undeveloped. He also stated that his family did some small-scale tree cutting and clearing in approximately 1995 to secure firebreaks on the property. Mr. McDonald also stated that he occasionally cuts firewood for his personal use. The 55-gallon drums on the Subject Property previously contained hydraulic fluids for the chainsaws.

A second Tribal member that does not currently reside on the Subject Property added in her response that one of the drinking water wells produces water that tastes unpleasant and has an oily sheen (Roberts, 2005). Pete Connelly from AES spoke with the resident of the Subject Property regarding the water quality from her well (Williams, 2005). Mrs Williams stated that the water has an unpleasant taste, however, she could not verify the presence of an oily sheen. The Fresno County Public Health Laboratory tested the water on behalf of Indian Health Services of Fresno. Refer to **Section 2.3** for more information on water quality testing.





PHOTO 1: Photo showing the entrance to the Subject Property.



PHOTO 3: Photo showing the northern border of the Subject Property. Photo was taken facing east with the Sierra National Forest on the left.



PHOTO 5: Photo showing the southern border of the Subject Property. Photo was taken facing west with the Subject Property on the right.



PHOTO 2: Photo showing signage posted at the entrance to the Subject Property.



PHOTO 4: Photo showing the northern border of the Subject Property. Photo was taken facing west with the Sierra National Forest on the right.





PHOTO 6: Photo showing the southeastern portion of the Subject Property with the Sierra National Forest in the background.



PHOTO 8: Photo showing the second residence located on the Subject Property.



PHOTO 10: Photo showing several empty 55-gallon drums located on the Subject Property.



PHOTO 7: Photo showing one of the residences located on the Subject Property.



PHOTO 9: Photo showing the mobile home located adjacent to the residence shown in the previous photo.





PHOTO 11: Metal piping and empty 55-gallon drums.



PHOTO 12: Non-hazardous metal debris on the Subject Property.



PHOTO 13: Photo showing an empty 55-gallon drum and wood and metal fencing materials located on the Subject Property.



PHOTO 14: Photo showing several cars located adjacent to the residence shown in Photo 8



PHOTO 15: Photo showing the utility pole located adjacent to the residence shown in Photo 7.



PHOTO 16: Photo showing empty 500-gallon AST located adjacent to the residence shown in Photo 8.

## ***SECTION 4.0***

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### ***RECORDS REVIEW***

## **SECTION 4.0**

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### **RECORDS REVIEW**

#### **4.1 DATABASE SEARCH**

Database searches were conducted for records of known storage tank sites and known sites of hazardous materials generation, storage, or contamination. Databases were searched for sites and listings up to two miles from a point roughly equivalent to the center of the Subject Property. The environmental database review was accomplished by using the services of a computerized search firm *Environmental Data Resources, Inc.* (EDR). The complete list of reviewed databases is provided in the EDR report, included in **Appendix C**, and is summarized in **Table 1**.

Included in the EDR database report was a list of "unmapped sites". AES reviewed the list of unmapped sites for properties that may be located within the search radius specified for each governmental database. These sites do not appear to be located within the applicable search radius of the Subject Property. It should be noted that the database search is only as accurate as the data entered into the government agency maintained databases and for the date on which those databases were last updated. Installation of underground storage tanks or hazardous material releases, if not reported to the appropriate agency, would not be listed on any of the databases searched. The following section reviews the previously mentioned database search and all follow-up communications with local agencies and individuals. The following table summarizes the public databases that were searched as part of this Phase I ESA.

#### **4.2 HAZARDOUS MATERIALS INVOLVEMENT**

##### **4.2.1 SUBJECT PROPERTY**

The Subject Property did not appear on any database searched by EDR as having hazardous materials involvement (EDR, 2005).

##### **4.2.2 ADJACENT PROPERTIES**

The database search located one site within a one-mile search radius with a known history of storage, use, and/or release of hazardous materials. The former North Fork Mill site is located approximately 0.85 miles southwest of the Subject Property at 57839 Road 225. The site was

**TABLE 1**  
**ENVIRONMENTAL DATA RESOURCES (EDR) SUMMARY OF AGENCY DATABASES**

Agency Database	Survey Distance	Number of Sites Identified
United States Environmental Protection Agency (USEPA) National Priority List (NPL) for Superfund Sites	1.5 Mile	0
U.S. EPA Resource Conservation and Recovery Act (RCRA) Corrective Action (CORRACTS) List	1.5 Mile	0
U.S. EPA Comprehensive Environmental Response, Compensation and Liability Index System (CERCLIS) List	1.0 Mile	0
U.S. EPA RCRA Permitted Treatment, Storage, and Disposal (TSD) Facilities	1.0 Mile	0
U.S. EPA Emergency Response Notification System (ERNS) List	0.5 Mile	0
U.S. EPA RCRA Registered Large and Small Quantity Generators of Hazardous Waste	0.75 Mile	0
Annual Workplan Sites (AWP)	1.5 Mile	0
State Hazardous Wastes Sites (Cal-Sites)	1.5 Mile	0
State Hazardous Wastes and Substances Sites (Cortese)	1.0 Mile	2
State Hazardous Material Incidents, Including Accidental Releases and Spills (CHMIRS)	0.50 Mile	0
State Permitted Solid Waste Landfill, Incinerators or Transfer Stations (SWF/LF) List	1.0 Mile	0
Leaking Underground Storage Tank (LUST) Sites	1.0 Mile	2
State Facility Inventory Database Underground Storage Tank (CA FID UST)	0.75 Mile	0
State Bond Expedite Plan	1.5 Mile	0
Hazardous Waste Information System (HAZNET)	0.50 Mile	1
Voluntary Cleanup Program	1.0 Mile	1
U.S. Brownfields Sites	1.0 Mile	1
State Spills, Leaks, Investigations and Cleanup (SLIC)	1.0 Mile	1

Source: Environmental Data Resources. 2005.

operated as a lumber mill from 1942 to 1994. South Fork Timber Industries was the last operator of the lumber mill, and in 1994 donated the property to the redevelopment agency of Madera County. During operations, logs were delivered to the site, where they were stored on two log decks pending milling. Logs were milled on the site in a saw building; the cut lumber then passed through a dip tank. The wood was dipped to retard fungal growth, which could discolor



the lumber. Pentachlorophenol was used in the dip solution, until its use was discontinued in the 1980's. The lumber was dried in kilns, cooled, planed and stored on site pending sale. A wood waste-fired cogeneration plant was operated on site from 1987 to 1994. The facility was fired by wood waste generated in the production of lumber at the sawmill, as well as by wood from outside sources. Ash generated by the co-generation plant was stored on site pending removal and off-site disposal. Subsequent to the cessation of operations, equipment and buildings at the cogeneration plant were entirely removed. In the late 1990's and over a period of about two years, USEPA representatives completed soil assessment related activities at the site. As a result of the work, and other recent assessment work, pentachlorophenol has been identified in site soils, and diesel and other fuels have been identified in groundwater. In 2003, Madera County was the recipient of a Brownfields Assessment Grant from the USEPA. This grant is intended to provide the funds necessary for completing needed assessment work at the North Fork Mill site. The Regional Water Quality Control Board (RWQCB) is overseeing assessment work associated with the diesel and other fuels in groundwater at the site. A pending Voluntary Cleanup Agreement (VCA) with Madera County includes provisions for the Department of Toxic Substances Control (DTSC) to provide review and oversight of other assessment-related activities for the former mill site. These include a remedial investigation, risk assessment, and a feasibility study.

The database report contained two alternate names for the former North Fork Mill site. These include Bendix Forrest Products and American Forest Products (AFP). According to the database report the AFP site has been a lumber mill processing plant since 1942. From 1948 until 1968, pine boards were dipped into a preservative to retard staining. Copper 8-quinolinolate (PQ-8) and pentachlorophenol (PCP) were two of the preservatives used. Wastewater generated by the mill and wood waste fired cogeneration facility was disposed of to an existing pond system. In 1986 RWQCB and DTSC sampled water in an area near dip pond #2. PCP and 2, 3, 4, 5-tetrachlorophenol were detected at 6 µg/L. AFP is currently operating on a Waste Discharge Requirement Permit under RWQCB oversight. RWQCB currently monitors the pond and any discharge to the nearby creek. Madera County received a \$200,000 assessment grant from USEPA. Madera County plans to complete a Remedial Investigation, Health-Based Risk Assessment, and Feasibility Study. A provision for the Department of Toxic Substances Control (DTSC) to provide oversight is included in the VCA.

The former North Fork Mill site is listed on the United States Brownfields database as a targeted site that will undergo assessments. A Brownfield property is real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The site is also listed on the CERCLIS-NFRAP database as Dinuba Timber Inc. North Fork site. CERCLIS-NFRAP assessment history listed in the database report identifies the site as being archived in 1990. The former mill site is also listed as a small quantity generator with no violations. The former mill site is also listed on the LUST

database as a closed case. Soils were excavated and treated to remove diesel fuels from soil. The former mill site is also listed on the HAZNET database as having produced 1.68 tons of asbestos-containing waste that were removed off site to a landfill. The former mill site also produced 3.336 tons of waste oil and mixed oils that were removed off site and recycled. The mill is also listed on the State HIST UST as the site of 14 USTs. The USTs were used for unleaded gasoline, diesel fuel, and waste oils. The tanks ranged in size from 300 gallons to 14,000 gallons.

The former North Fork mill site is located greater than 0.5 miles from the North Fork Rancheria and down gradient with respect to the anticipated groundwater flow direction. It is therefore not likely that contaminants migrated such a distance and affected subsurface conditions on the Subject Property.

## ***SECTION 5.0***

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### ***FINDINGS AND CONCLUSIONS***

## **SECTION 5.0**

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### **FINDINGS AND CONCLUSIONS**

This Phase I Environmental Site Assessment was performed in conformance with the scope and limitations of ASTM Standard Practice E1527-00, which specifies the appropriate inquiry requirements for the innocent landowner defense under CERCLA. Based on information reviewed, AES's site reconnaissance of the Subject Property and adjacent properties, and the interviews and questionnaires described, the following general observations were made:

- The Subject Property currently has mixed uses as a residential and undeveloped parcel.
- Several empty 55-gallon drums were observed in an area adjacent to one of the residences on the Subject Property. The drums previously contained hydraulic fluid for small-scale clearing and logging activities conducted on the Subject Property (McDonald, 2005).
- An empty 500-gallon aboveground storage tank (AST) was present on the Subject Property. According to the resident nearest the AST, the tank has not contained fuel while on the Subject Property (McDonald, 2005).
- There are two separate domestic wells that serve the two individual residences on the Subject Property. According to the resident (Williams, 2005), the domestic water has an unpleasant taste and odor. A member of the Tribe (Roberts, 2005) described the drinking water as having an oily sheen on the surface. Title 22 water quality testing was performed in 1998 and 2004. The water was tested for general minerals, inorganic chemicals, and fecal coliform (**Appendix E**). The water was not tested for total petroleum hydrocarbons (TPH) or volatile organic constituents (VOC's).
- There is a pole-mounted transformer adjacent to one of the residences on the Subject Property. The transformer appears to be of an age where polychlorinated bi-phenols (PCB's) could be present, however, the transformer showed no signs of leaking.

Based on the findings and conclusions of this Phase I Environmental Site Assessment, AES has the following recommendations:

- If the site is to be developed, groundwater and soil samples should be collected in the area of the domestic well. Soil samples, groundwater samples, and water from the well should be tested for TPH and VOC's.
- If contaminated soil and/or groundwater are encountered or if suspected contamination is encountered during site development, work should be halted in the area, and the type and extent of the contamination shall be determined. A qualified professional, in consultation with appropriate regulatory agencies, should then develop an appropriate method to remediate the contamination. If necessary, the Tribe should implement a remediation plan in conjunction with continued construction.

## **SECTION 6.0**

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*REPORT AUTHORS/ REFERENCES*



## SECTION 6.0

### REPORT AUTHORS AND REFERENCES

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#### REPORT PREPARATION

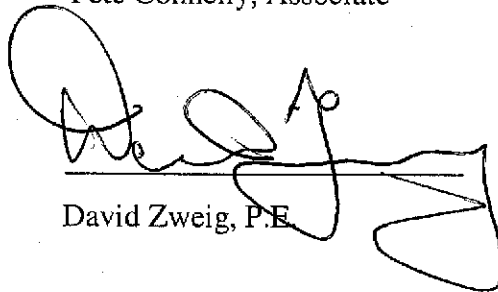
Analytical Environmental Services  
2021 "N" Street, Suite 200  
Sacramento, CA 95814

Author:



Pete Connelly, Associate

Review:



David Zweig, P.E.



#### REFERENCES

- American Society for Testing and Materials (ASTM). 2001. Practice E1527-00: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process."
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Roberts, Delores. 2005. Tribal Member North Fork Rancheria. Telephone interview, August 25, 2005.

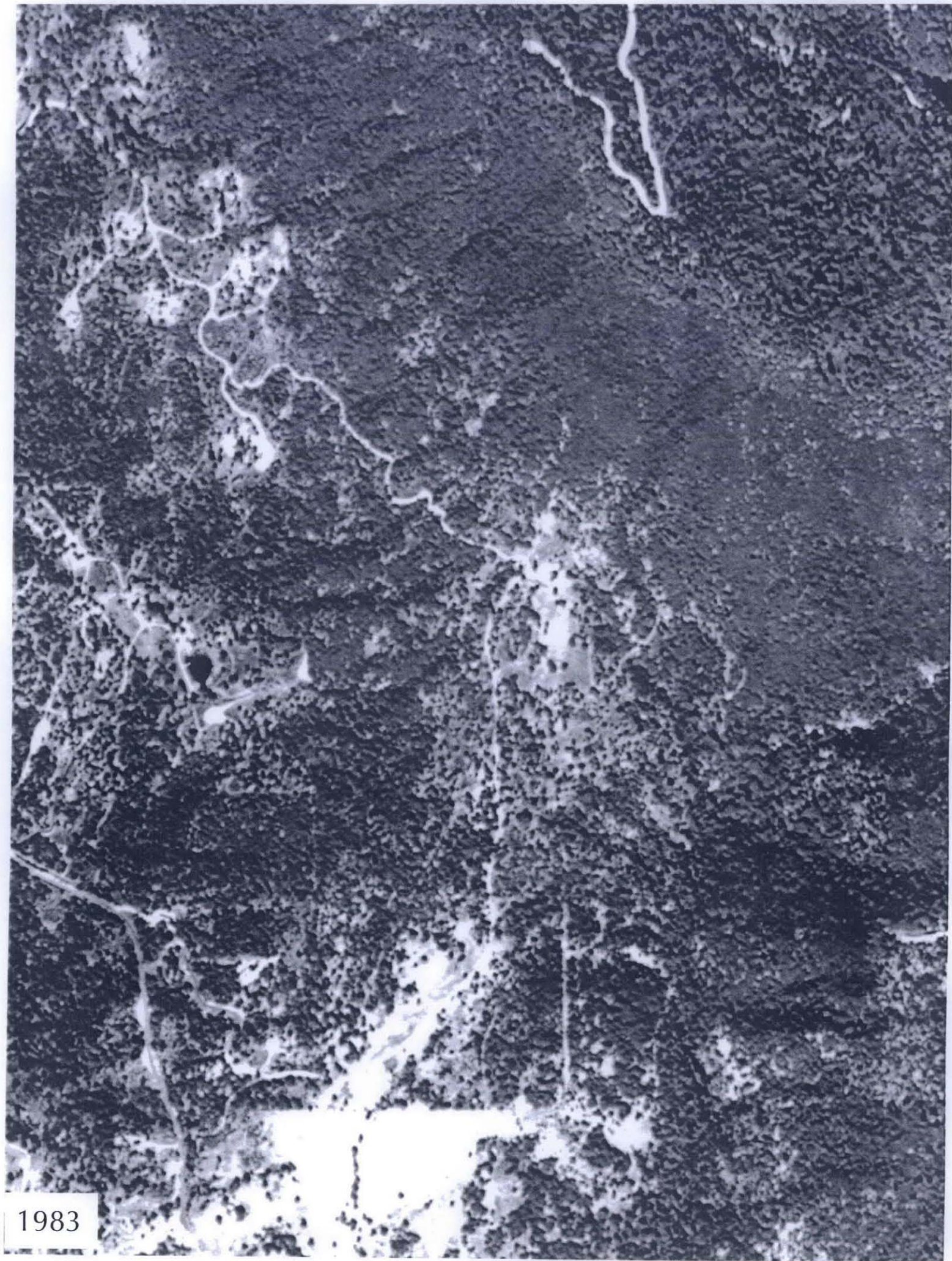
Williams, Juanita. 2005. Resident North Fork Rancheria. Telephone Interview, August 26, 2005.

United States Environmental Protection Agency "U.S. EPA" (2005).  
<http://www.epa.gov/brownfields/glossary.htm>. Site accessed on 5/16/2005

# ***APPENDIX A***

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## ***HISTORICAL AERIAL PHOTOGRAPHS***



1983



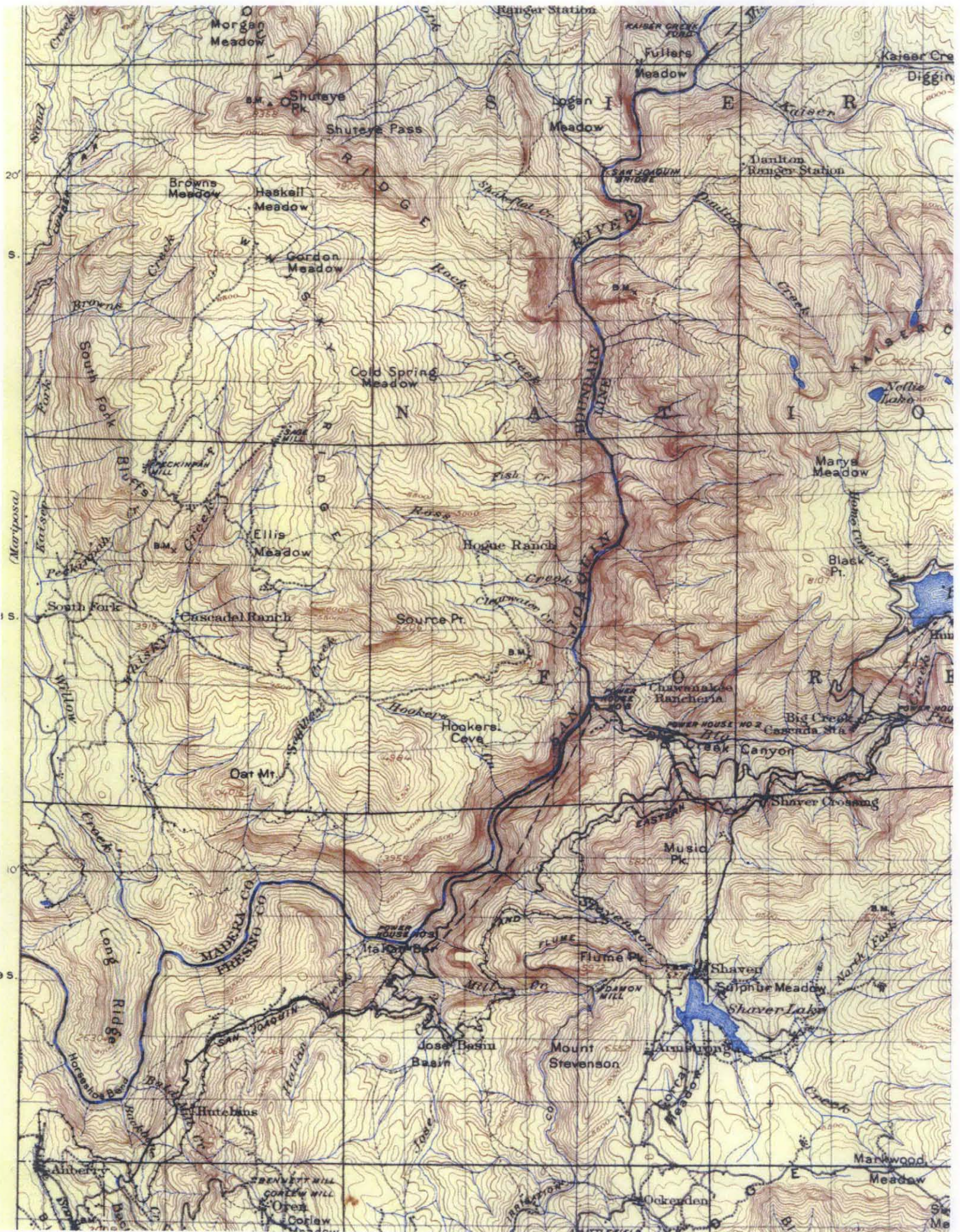


## ***APPENDIX B***

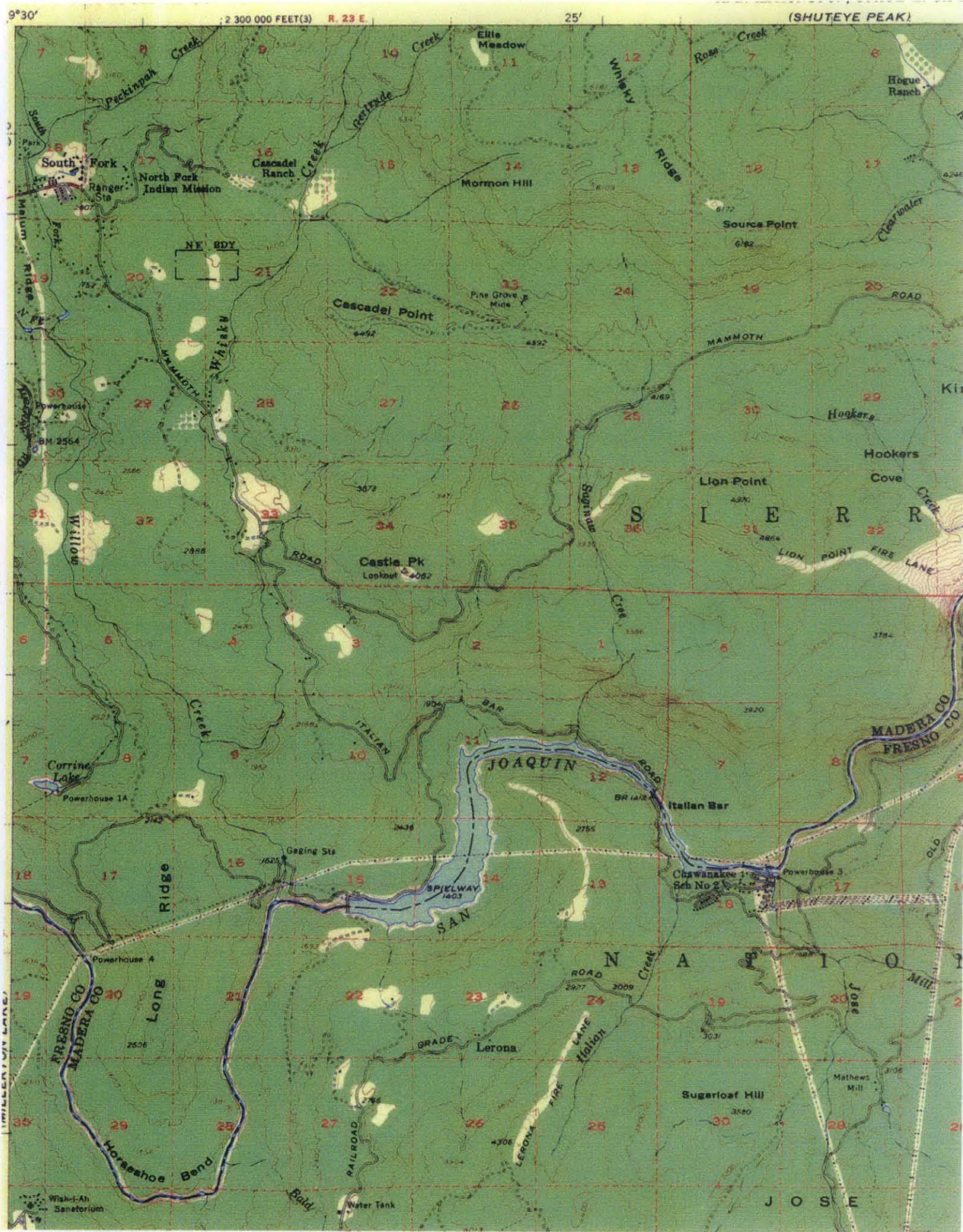
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### *HISTORICAL TOPOGRAPHIC MAPS*















# ***APPENDIX C***

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## ***DATABASE REPORT***



**EDR™** Environmental  
Data Resources Inc

## **The EDR Radius Map with GeoCheck®**

**North Fork Rancheria  
Rainbow Drive  
North Fork, CA 93643**

**Inquiry Number: 1374135.2s**

**March 07, 2005**

## **The Standard in Environmental Risk Management Information**

440 Wheelers Farms Road  
Milford, Connecticut 06460

### **Nationwide Customer Service**

Telephone: 1-800-352-0050  
Fax: 1-800-231-6802  
Internet: [www.edrnet.com](http://www.edrnet.com)

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***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Elapsed ASTM days:** Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

### FEDERAL ASTM STANDARD RECORDS

#### **NPL: National Priority List**

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05

Elapsed ASTM days: 2

Date of Last EDR Contact: 02/01/05

#### **NPL Site Boundaries**

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1

Telephone 617-918-1143

EPA Region 3

Telephone 215-814-5418

EPA Region 4

Telephone 404-562-8033

EPA Region 6

Telephone: 214-655-6659

EPA Region 8

Telephone: 303-312-6774

#### **Proposed NPL: Proposed National Priority List Sites**

Source: EPA

Telephone: N/A

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05

Elapsed ASTM days: 2

Date of Last EDR Contact: 02/01/05

#### **CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System**

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/08/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/21/04

Elapsed ASTM days: 49

Date of Last EDR Contact: 12/21/04

#### **CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned**

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/14/04  
Date Made Active at EDR: 02/08/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/21/04  
Elapsed ASTM days: 49  
Date of Last EDR Contact: 12/21/04

### **CORRACTS:** Corrective Action Report

Source: EPA

Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/15/04  
Date Made Active at EDR: 02/25/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/07/05  
Elapsed ASTM days: 49  
Date of Last EDR Contact: 12/07/04

### **RCRA:** Resource Conservation and Recovery Act Information

Source: EPA

Telephone: 800-424-9346

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 11/23/04  
Date Made Active at EDR: 01/18/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 11/24/04  
Elapsed ASTM days: 55  
Date of Last EDR Contact: 11/24/04

### **ERNS:** Emergency Response Notification System

Source: National Response Center, United States Coast Guard

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/03  
Date Made Active at EDR: 03/12/04  
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/26/04  
Elapsed ASTM days: 46  
Date of Last EDR Contact: 01/27/05

## **FEDERAL ASTM SUPPLEMENTAL RECORDS**

### **BRS:** Biennial Reporting System

Source: EPA/NTIS

Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01  
Database Release Frequency: Biennially

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

### **CONSENT:** Superfund (CERCLA) Consent Decrees

Source: Department of Justice, Consent Decree Library

Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/05/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 10/25/04  
Date of Next Scheduled EDR Contact: 01/24/05

### **ROD: Records Of Decision**

Source: EPA  
Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/09/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/05/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **DELISTED NPL: National Priority List Deletions**

Source: EPA  
Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/01/05  
Date of Next Scheduled EDR Contact: 05/02/05

### **FINDS: Facility Index System/Facility Identification Initiative Program Summary Report**

Source: EPA  
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **HMIRS: Hazardous Materials Information Reporting System**

Source: U.S. Department of Transportation  
Telephone: 202-366-4555

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/08/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/19/05  
Date of Next Scheduled EDR Contact: 04/18/05

### **MLTS: Material Licensing Tracking System**

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 11/30/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **MINES: Mines Master Index File**

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/13/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/28/04  
Date of Next Scheduled EDR Contact: 03/28/05

### **NPL LIENS:** Federal Superfund Liens

Source: EPA  
Telephone: 202-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/22/05  
Date of Next Scheduled EDR Contact: 05/23/05

### **PADS:** PCB Activity Database System

Source: EPA  
Telephone: 202-564-3887

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05  
Date of Next Scheduled EDR Contact: 05/09/05

### **DOD:** Department of Defense Sites

Source: USGS  
Telephone: 703-692-8801

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/08/05  
Date of Next Scheduled EDR Contact: 05/09/05

### **UMTRA:** Uranium Mill Tailings Sites

Source: Department of Energy  
Telephone: 505-845-0011

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 04/22/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 12/21/04  
Date of Next Scheduled EDR Contact: 03/21/05

### **ODI:** Open Dump Inventory

Source: Environmental Protection Agency  
Telephone: 800-424-9346

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95  
Date of Next Scheduled EDR Contact: N/A

### **FUDS:** Formerly Used Defense Sites

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/03  
Database Release Frequency: Varies

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### **INDIAN RESERV:** Indian Reservations

Source: USGS

Telephone: 202-208-3710

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/08/05  
Date of Next Scheduled EDR Contact: 05/09/05

### **RAATS:** RCRA Administrative Action Tracking System

Source: EPA

Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

### **TRIS:** Toxic Chemical Release Inventory System

Source: EPA

Telephone: 202-566-0250

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/02  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/20/04  
Date of Next Scheduled EDR Contact: 03/21/05

### **TSCA:** Toxic Substances Control Act

Source: EPA

Telephone: 202-260-5521

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02  
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

### **FTTS INSP:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA

Telephone: 202-564-2501

Date of Government Version: 04/13/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/04  
Date of Next Scheduled EDR Contact: 03/21/05

### **SSTS:** Section 7 Tracking Systems

Source: EPA

Telephone: 202-564-5008

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03  
Database Release Frequency: Annually

Date of Last EDR Contact: 11/29/04  
Date of Next Scheduled EDR Contact: 04/18/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **FTTS:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Telephone: 202-564-2501

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 09/13/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/01/04

Date of Next Scheduled EDR Contact: 03/21/05

### **STATE OF CALIFORNIA ASTM STANDARD RECORDS**

#### **AWP:** Annual Workplan Sites

Source: California Environmental Protection Agency

Telephone: 916-323-3400

Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/09/04

Date Made Active at EDR: 01/04/05

Database Release Frequency: Annually

Date of Data Arrival at EDR: 12/02/04

Elapsed ASTM days: 33

Date of Last EDR Contact: 03/01/05

#### **CAL-SITES:** Calsites Database

Source: Department of Toxic Substance Control

Telephone: 916-323-3400

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 11/09/04

Date Made Active at EDR: 01/04/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/02/04

Elapsed ASTM days: 33

Date of Last EDR Contact: 03/01/05

#### **CHMIRS:** California Hazardous Material Incident Report System

Source: Office of Emergency Services

Telephone: 916-845-8400

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/03

Date Made Active at EDR: 06/25/04

Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/18/04

Elapsed ASTM days: 38

Date of Last EDR Contact: 02/23/05

#### **CORTESE:** "Cortese" Hazardous Waste & Substances Sites List

Source: CAL EPA/Office of Emergency Information

Telephone: 916-323-9100

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/01

Date Made Active at EDR: 07/26/01

Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01

Elapsed ASTM days: 58

Date of Last EDR Contact: 01/25/05

#### **NOTIFY 65:** Proposition 65 Records

Source: State Water Resources Control Board

Telephone: 916-445-3846

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/21/93  
Date Made Active at EDR: 11/19/93  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93  
Elapsed ASTM days: 18  
Date of Last EDR Contact: 01/17/05

### **TOXIC PITS:** Toxic Pits Cleanup Act Sites

Source: State Water Resources Control Board  
Telephone: 916-227-4364

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95  
Date Made Active at EDR: 09/26/95  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95  
Elapsed ASTM days: 27  
Date of Last EDR Contact: 02/01/05

### **SWF/LF (SWIS):** Solid Waste Information System

Source: Integrated Waste Management Board  
Telephone: 916-341-6320

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/13/04  
Date Made Active at EDR: 01/24/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/14/04  
Elapsed ASTM days: 41  
Date of Last EDR Contact: 12/14/04

### **WMUDS/SWAT:** Waste Management Unit Database

Source: State Water Resources Control Board  
Telephone: 916-227-4448

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00  
Date Made Active at EDR: 05/10/00  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00  
Elapsed ASTM days: 30  
Date of Last EDR Contact: 12/06/04

### **LUST:** Leaking Underground Storage Tank Information System

Source: State Water Resources Control Board  
Telephone: 916-341-5752

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/10/05  
Date Made Active at EDR: 02/21/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/10/05  
Elapsed ASTM days: 42  
Date of Last EDR Contact: 01/10/05

### **CA BOND EXP. PLAN:** Bond Expenditure Plan

Source: Department of Health Services  
Telephone: 916-255-2118

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89  
Date Made Active at EDR: 08/02/94  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/27/94  
Elapsed ASTM days: 6  
Date of Last EDR Contact: 05/31/94

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CA UST:

#### UST: Active UST Facilities

Source: SWRCB

Telephone: 916-341-5752

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/10/05

Date Made Active at EDR: 02/21/05

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 01/10/05

Elapsed ASTM days: 42

Date of Last EDR Contact: 01/10/05

#### VCP: Voluntary Cleanup Program Properties

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/09/04

Date Made Active at EDR: 01/24/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/02/04

Elapsed ASTM days: 53

Date of Last EDR Contact: 03/01/05

#### INDIAN LUST: Leaking Underground Storage Tanks on Indian Land

Source: Environmental Protection Agency

Telephone: 415-972-3372

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/14/05

Date Made Active at EDR: 03/03/05

Database Release Frequency: Varies

Date of Data Arrival at EDR: 01/14/05

Elapsed ASTM days: 48

Date of Last EDR Contact: 02/22/05

#### INDIAN LUST: Leaking Underground Storage Tanks on Indian Land

Source: EPA Region 10

Telephone: 206-553-2857

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 12/21/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Varies

Date of Data Arrival at EDR: 12/21/04

Elapsed ASTM days: 44

Date of Last EDR Contact: 01/31/05

#### INDIAN UST: Underground Storage Tanks on Indian Land

Source: EPA Region 9

Telephone: 415-972-3368

Date of Government Version: 11/02/04

Date Made Active at EDR: 12/13/04

Database Release Frequency: Varies

Date of Data Arrival at EDR: 11/03/04

Elapsed ASTM days: 40

Date of Last EDR Contact: 02/22/05

#### CA FID UST: Facility Inventory Database

Source: California Environmental Protection Agency

Telephone: 916-445-6532

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94

Date Made Active at EDR: 09/29/95

Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 09/05/95

Elapsed ASTM days: 24

Date of Last EDR Contact: 12/28/98

#### HIST UST: Hazardous Substance Storage Container Database

Source: State Water Resources Control Board

Telephone: 916-341-5700

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/90  
Date Made Active at EDR: 02/12/91  
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 01/25/91  
Elapsed ASTM days: 18  
Date of Last EDR Contact: 07/26/01

### STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

#### **AST:** Aboveground Petroleum Storage Tank Facilities

Source: State Water Resources Control Board  
Telephone: 916-341-5712  
Registered Aboveground Storage Tanks.

Date of Government Version: 12/01/03  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/24/05  
Date of Next Scheduled EDR Contact: 05/02/05

#### **CLEANERS:** Cleaner Facilities

Source: Department of Toxic Substance Control  
Telephone: 916-225-0873

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 11/29/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/04/05  
Date of Next Scheduled EDR Contact: 04/04/05

#### **CA WDS:** Waste Discharge System

Source: State Water Resources Control Board  
Telephone: 916-341-5227

Sites which have been issued waste discharge requirements.

Date of Government Version: 12/20/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/21/04  
Date of Next Scheduled EDR Contact: 03/21/05

#### **DEED:** Deed Restriction Listing

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 10/04/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/04/05  
Date of Next Scheduled EDR Contact: 04/04/05

#### **NFA:** No Further Action Determination

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400

This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 11/09/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05  
Date of Next Scheduled EDR Contact: 05/30/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **EMI:** Emissions Inventory Data

Source: California Air Resources Board

Telephone: 916-322-2990

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/02

Database Release Frequency: Varies

Date of Last EDR Contact: 01/21/05

Date of Next Scheduled EDR Contact: 04/18/05

### **REF:** Unconfirmed Properties Referred to Another Agency

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 11/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05

Date of Next Scheduled EDR Contact: 05/30/05

### **SCH:** School Property Evaluation Program

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05

Date of Next Scheduled EDR Contact: 05/30/05

### **NFE:** Properties Needing Further Evaluation

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 11/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05

Date of Next Scheduled EDR Contact: 05/30/05

### **SLIC:** Statewide SLIC Cases

Source: State Water Resources Control Board

Telephone: 916-341-5752

The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 01/10/05

Database Release Frequency: Varies

Date of Last EDR Contact: 01/10/05

Date of Next Scheduled EDR Contact: 04/11/05

### **HAZNET:** Facility and Manifest Data

Source: California Environmental Protection Agency

Telephone: 916-255-1136

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02

Database Release Frequency: Annually

Date of Last EDR Contact: 02/17/05

Date of Next Scheduled EDR Contact: 05/09/05

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## LOCAL RECORDS

### **ALAMEDA COUNTY:**

#### **Local Oversight Program Listing of UGT Cleanup Sites**

Source: Alameda County Environmental Health Services

Telephone: 510-567-6700

Date of Government Version: 11/24/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/24/05

Date of Next Scheduled EDR Contact: 04/25/05

#### **Underground Tanks**

Source: Alameda County Environmental Health Services

Telephone: 510-567-6700

Date of Government Version: 11/24/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/24/05

Date of Next Scheduled EDR Contact: 04/25/05

### **CONTRA COSTA COUNTY:**

#### **Site List**

Source: Contra Costa Health Services Department

Telephone: 925-646-2286

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/13/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/28/05

Date of Next Scheduled EDR Contact: 05/30/05

### **FRESNO COUNTY:**

#### **CUPA Resources List**

Source: Dept. of Community Health

Telephone: 559-445-3271

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/19/05

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/19/05

Date of Next Scheduled EDR Contact: 05/09/05

### **KERN COUNTY:**

#### **Underground Storage Tank Sites & Tank Listing**

Source: Kern County Environment Health Services Department

Telephone: 661-862-8700

Kern County Sites and Tanks Listing.

Date of Government Version: 12/13/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

### **LOS ANGELES COUNTY:**

#### **List of Solid Waste Facilities**

Source: La County Department of Public Works

Telephone: 818-458-5185



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/03/03  
Database Release Frequency: Varies

Date of Last EDR Contact: 02/18/05  
Date of Next Scheduled EDR Contact: 05/16/05

### City of El Segundo Underground Storage Tank

Source: City of El Segundo Fire Department  
Telephone: 310-524-2236

Date of Government Version: 11/29/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05  
Date of Next Scheduled EDR Contact: 05/16/05

### City of Long Beach Underground Storage Tank

Source: City of Long Beach Fire Department  
Telephone: 562-570-2543

Date of Government Version: 03/28/03  
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05  
Date of Next Scheduled EDR Contact: 05/23/05

### City of Torrance Underground Storage Tank

Source: City of Torrance Fire Department  
Telephone: 310-618-2973

Date of Government Version: 12/03/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/28/05  
Date of Next Scheduled EDR Contact: 05/16/05

### City of Los Angeles Landfills

Source: Engineering & Construction Division  
Telephone: 213-473-7869

Date of Government Version: 03/01/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

### HMS: Street Number List

Source: Department of Public Works  
Telephone: 626-458-3517  
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05  
Date of Next Scheduled EDR Contact: 05/16/05

### Site Mitigation List

Source: Community Health Services  
Telephone: 323-890-7806  
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/26/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 02/14/05  
Date of Next Scheduled EDR Contact: 05/16/05

### San Gabriel Valley Areas of Concern

Source: EPA Region 9  
Telephone: 415-972-3178  
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 07/06/99  
Date of Next Scheduled EDR Contact: N/A

### MARIN COUNTY:

#### Underground Storage Tank Sites

Source: Public Works Department Waste Management  
Telephone: 415-499-6647  
Currently permitted USTs in Marin County.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/16/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/31/05  
Date of Next Scheduled EDR Contact: 05/02/05

### NAPA COUNTY:

#### Sites With Reported Contamination

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269

Date of Government Version: 12/27/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/28/04  
Date of Next Scheduled EDR Contact: 03/28/05

#### Closed and Operating Underground Storage Tank Sites

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269

Date of Government Version: 12/27/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/27/04  
Date of Next Scheduled EDR Contact: 03/28/05

### ORANGE COUNTY:

#### List of Underground Storage Tank Cleanups

Source: Health Care Agency  
Telephone: 714-834-3446  
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/10/04  
Date of Next Scheduled EDR Contact: 03/07/05

#### List of Underground Storage Tank Facilities

Source: Health Care Agency  
Telephone: 714-834-3446  
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/10/04  
Date of Next Scheduled EDR Contact: 03/07/05

#### List of Industrial Site Cleanups

Source: Health Care Agency  
Telephone: 714-834-3446  
Petroleum and non-petroleum spills.

Date of Government Version: 12/01/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/10/04  
Date of Next Scheduled EDR Contact: 03/07/05

### PLACER COUNTY:

#### Master List of Facilities

Source: Placer County Health and Human Services  
Telephone: 530-889-7312  
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 01/13/05  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/20/04  
Date of Next Scheduled EDR Contact: 03/21/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RIVERSIDE COUNTY:

#### Listing of Underground Tank Cleanup Sites

Source: Department of Public Health  
Telephone: 909-358-5055  
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 12/06/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/17/05  
Date of Next Scheduled EDR Contact: 04/18/05

#### Underground Storage Tank Tank List

Source: Health Services Agency  
Telephone: 909-358-5055

Date of Government Version: 12/06/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/17/04  
Date of Next Scheduled EDR Contact: 04/18/05

### SACRAMENTO COUNTY:

#### CS - Contaminated Sites

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406

Date of Government Version: 08/28/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/04/05  
Date of Next Scheduled EDR Contact: 05/02/05

#### ML - Regulatory Compliance Master List

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 10/15/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/04/05  
Date of Next Scheduled EDR Contact: 05/02/05

### SAN BERNARDINO COUNTY:

#### Hazardous Material Permits

Source: San Bernardino County Fire Department Hazardous Materials Division  
Telephone: 909-387-3041

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 01/07/05  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

### SAN DIEGO COUNTY:

#### Solid Waste Facilities

Source: Department of Health Services  
Telephone: 619-338-2209  
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00  
Database Release Frequency: Varies

Date of Last EDR Contact: 02/22/05  
Date of Next Scheduled EDR Contact: 05/23/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Hazardous Materials Management Division Database

Source: Hazardous Materials Management Division

Telephone: 619-338-2268

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/29/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/10/05

Date of Next Scheduled EDR Contact: 04/04/05

### SAN FRANCISCO COUNTY:

#### Local Oversight Facilities

Source: Department Of Public Health San Francisco County

Telephone: 415-252-3920

Date of Government Version: 12/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

#### Underground Storage Tank Information

Source: Department of Public Health

Telephone: 415-252-3920

Date of Government Version: 12/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

### SAN MATEO COUNTY:

#### Fuel Leak List

Source: San Mateo County Environmental Health Services Division

Telephone: 650-363-1921

Date of Government Version: 10/27/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/10/05

Date of Next Scheduled EDR Contact: 04/11/05

#### Business Inventory

Source: San Mateo County Environmental Health Services Division

Telephone: 650-363-1921

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 08/19/04

Database Release Frequency: Annually

Date of Last EDR Contact: 01/10/05

Date of Next Scheduled EDR Contact: 04/11/05

### SANTA CLARA COUNTY:

#### Fuel Leak Site Activity Report

Source: Santa Clara Valley Water District

Telephone: 408-265-2600

Date of Government Version: 06/30/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/28/04

Date of Next Scheduled EDR Contact: 03/28/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### Hazardous Material Facilities

Source: City of San Jose Fire Department  
Telephone: 408-277-4659

Date of Government Version: 10/01/03  
Database Release Frequency: Annually

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

### SOLANO COUNTY:

#### Leaking Underground Storage Tanks

Source: Solano County Department of Environmental Management  
Telephone: 707-421-6770

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

#### Underground Storage Tanks

Source: Solano County Department of Environmental Management  
Telephone: 707-421-6770

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/13/04  
Date of Next Scheduled EDR Contact: 03/14/05

### SONOMA COUNTY:

#### Leaking Underground Storage Tank Sites

Source: Department of Health Services  
Telephone: 707-565-6565

Date of Government Version: 01/27/05  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/24/05  
Date of Next Scheduled EDR Contact: 04/25/05

### SUTTER COUNTY:

#### Underground Storage Tanks

Source: Sutter County Department of Agriculture  
Telephone: 530-822-7500

Date of Government Version: 01/29/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

### VENTURA COUNTY:

#### Inventory of Illegal Abandoned and Inactive Sites

Source: Environmental Health Division  
Telephone: 805-654-2813  
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05  
Date of Next Scheduled EDR Contact: 05/23/05

#### Listing of Underground Tank Cleanup Sites

Source: Environmental Health Division  
Telephone: 805-654-2813  
Ventura County Underground Storage Tank Cleanup Sites (LUST).



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/30/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/17/04  
Date of Next Scheduled EDR Contact: 03/14/05

### Underground Tank Closed Sites List

Source: Environmental Health Division  
Telephone: 805-654-2813

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/14/05  
Date of Next Scheduled EDR Contact: 04/11/05

### Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

Source: Ventura County Environmental Health Division  
Telephone: 805-654-2813

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/01/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/17/04  
Date of Next Scheduled EDR Contact: 03/14/05

### YOLO COUNTY:

#### Underground Storage Tank Comprehensive Facility Report

Source: Yolo County Department of Health  
Telephone: 530-666-8646

Date of Government Version: 11/23/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 01/17/05  
Date of Next Scheduled EDR Contact: 04/18/05

### California Regional Water Quality Control Board (RWQCB) LUST Records

#### LUST REG 1: Active Toxic Site Investigation

Source: California Regional Water Quality Control Board North Coast (1)  
Telephone: 707-576-2220

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/23/05  
Date of Next Scheduled EDR Contact: 05/23/05

#### LUST REG 2: Fuel Leak List

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)  
Telephone: 510-286-0457

Date of Government Version: 09/30/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/10/05  
Date of Next Scheduled EDR Contact: 04/11/05

#### LUST REG 3: Leaking Underground Storage Tank Database

Source: California Regional Water Quality Control Board Central Coast Region (3)  
Telephone: 805-549-3147

Date of Government Version: 05/19/03  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/14/05  
Date of Next Scheduled EDR Contact: 05/16/05

#### LUST REG 4: Underground Storage Tank Leak List

Source: California Regional Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6600

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/07/04  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/27/04  
Date of Next Scheduled EDR Contact: 03/28/05

**LUST REG 5:** Leaking Underground Storage Tank Database

Source: California Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-3291

Date of Government Version: 01/01/05  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/07/05  
Date of Next Scheduled EDR Contact: 04/04/05

**LUST REG 6L:** Leaking Underground Storage Tank Case Listing

Source: California Regional Water Quality Control Board Lahontan Region (6)  
Telephone: 916-542-5424

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/06/04  
Date of Next Scheduled EDR Contact: 03/07/05

**LUST REG 6V:** Leaking Underground Storage Tank Case Listing

Source: California Regional Water Quality Control Board Victorville Branch Office (6)  
Telephone: 760-346-7491

Date of Government Version: 08/09/04  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 01/03/05  
Date of Next Scheduled EDR Contact: 04/04/05

**LUST REG 7:** Leaking Underground Storage Tank Case Listing

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)  
Telephone: 760-346-7491

Date of Government Version: 02/26/04  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 12/27/04  
Date of Next Scheduled EDR Contact: 03/28/05

**LUST REG 8:** Leaking Underground Storage Tanks

Source: California Regional Water Quality Control Board Santa Ana Region (8)  
Telephone: 951-782-4130

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 11/01/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 02/08/05  
Date of Next Scheduled EDR Contact: 05/09/05

**LUST REG 9:** Leaking Underground Storage Tank Report

Source: California Regional Water Quality Control Board San Diego Region (9)  
Telephone: 858-467-2980

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 01/17/05  
Date of Next Scheduled EDR Contact: 04/18/05

### California Regional Water Quality Control Board (RWQCB) SLIC Records

**SLIC REG 1:** Active Toxic Site Investigations

Source: California Regional Water Quality Control Board, North Coast Region (1)  
Telephone: 707-576-2220

Date of Government Version: 04/03/03  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/23/05  
Date of Next Scheduled EDR Contact: 05/23/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**SLIC REG 2:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Regional Water Quality Control Board San Francisco Bay Region (2)

Telephone: 510-286-0457

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/30/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/10/05

Date of Next Scheduled EDR Contact: 04/11/05

**SLIC REG 3:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: California Regional Water Quality Control Board Central Coast Region (3)

Telephone: 805-549-3147

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/18/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/14/05

Date of Next Scheduled EDR Contact: 05/23/05

**SLIC REG 4:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Region Water Quality Control Board Los Angeles Region (4)

Telephone: 213-576-6600

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/17/04

Database Release Frequency: Varies

Date of Last EDR Contact: 01/24/05

Date of Next Scheduled EDR Contact: 04/25/05

**SLIC REG 5:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Regional Water Quality Control Board Central Valley Region (5)

Telephone: 916-464-3291

Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 10/01/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/04/05

Date of Next Scheduled EDR Contact: 04/04/05

**SLIC REG 6L:** SLIC Sites

Source: California Regional Water Quality Control Board, Lahontan Region

Telephone: 530-542-5574

Date of Government Version: 09/07/04

Database Release Frequency: Varies

Date of Last EDR Contact: 12/06/04

Date of Next Scheduled EDR Contact: 03/07/05

**SLIC REG 6V:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: Regional Water Quality Control Board, Victorville Branch

Telephone: 619-241-6583

Date of Government Version: 04/01/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/17/04

Date of Next Scheduled EDR Contact: 04/04/05

**SLIC REG 7:** SLIC List

Source: California Regional Quality Control Board, Colorado River Basin Region

Telephone: 760-346-7491

Date of Government Version: 11/24/04

Database Release Frequency: Varies

Date of Last EDR Contact: 02/22/05

Date of Next Scheduled EDR Contact: 05/23/05

**SLIC REG 8:** Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Source: California Region Water Quality Control Board Santa Ana Region (8)

Telephone: 951-782-3298

Date of Government Version: 07/01/04

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/07/05

Date of Next Scheduled EDR Contact: 04/04/05

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### **SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing**

Source: California Regional Water Quality Control Board San Diego Region (9)

Telephone: 858-467-2980

Date of Government Version: 09/10/04

Database Release Frequency: Annually

Date of Last EDR Contact: 03/01/05

Date of Next Scheduled EDR Contact: 05/30/05

### **EDR PROPRIETARY HISTORICAL DATABASES**

**Former Manufactured Gas (Coal Gas) Sites:** The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

#### **Disclaimer Provided by Real Property Scan, Inc.**

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

### **BROWNFIELDS DATABASES**

#### **VCP: Voluntary Cleanup Program Properties**

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/09/04

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/01/05

Date of Next Scheduled EDR Contact: 05/30/05

#### **US BROWNFIELDS: A Listing of Brownfields Sites**

Source: Environmental Protection Agency

Telephone: 202-566-2777

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: N/A

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: N/A

Date of Next Scheduled EDR Contact: N/A

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

#### **Electric Power Transmission Line Data**

Source: PennWell Corporation

Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

#### **AHA Hospitals:**

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

#### **Medical Centers: Provider of Services Listing**

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

#### **Nursing Homes**

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

#### **Public Schools**

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

#### **Private Schools**

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

#### **Daycare Centers: Licensed Facilities**

Source: Department of Social Services

Telephone: 916-657-4041

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### STREET AND ADDRESS INFORMATION

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

NORTH FORK RANCHERIA  
RAINBOW DRIVE  
NORTH FORK, CA 93643

### **TARGET PROPERTY COORDINATES**

Latitude (North):	37.221699 - 37° 13' 18.1"
Longitude (West):	119.471703 - 119° 28' 18.1"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	280694.2
UTM Y (Meters):	4122125.5
Elevation:	3204 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

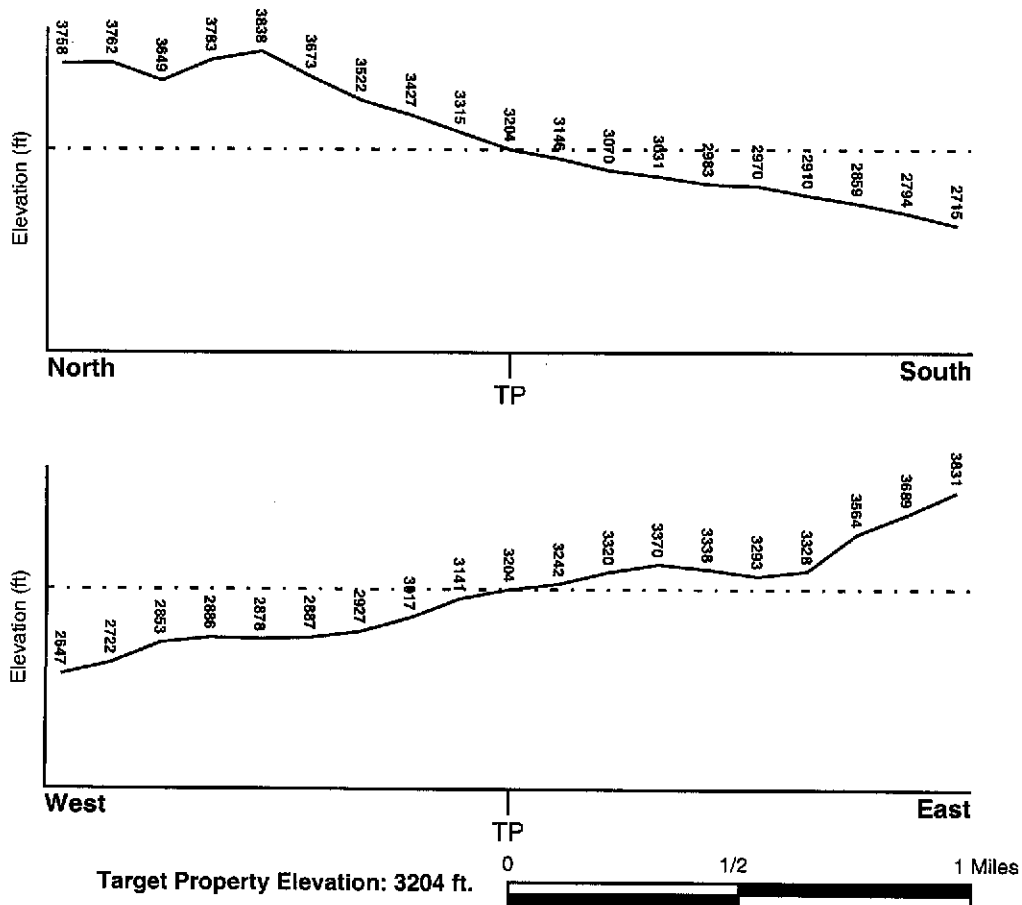
### TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map: 37119-B4 CASCADEL POINT, CA  
General Topographic Gradient: General SW  
Source: USGS 7.5 min quad index

#### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

Target Property County  
MADERA, CA

FEMA Flood Electronic Data  
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0601700375B

Additional Panels in search area: Not Reported

### NATIONAL WETLAND INVENTORY

NWI Quad at Target Property  
CASCADEL POINT

NWI Electronic Data Coverage  
YES - refer to the Overview Map and Detail Map

### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### *Site-Specific Hydrogeological Data\*:*

Search Radius: 1.25 miles  
Status: Not found

### AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

\* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

Era: Mesozoic  
System: Cretaceous  
Series: Lower Cretaceous granitic rocks  
Code: Kg1 (decoded above as Era, System & Series)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawlec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### **DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: HOLLAND

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 5.10
2	9 inches	17 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 5.10
3	17 inches	88 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 5.10
4	88 inches	99 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 5.10

### OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: coarse sandy loam  
unweathered bedrock  
gravelly - sandy loam

Surficial Soil Types: coarse sandy loam  
unweathered bedrock  
gravelly - sandy loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: weathered bedrock  
unweathered bedrock



## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **ADDITIONAL ENVIRONMENTAL RECORD SOURCES**

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### **WELL SEARCH DISTANCE INFORMATION**

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### **FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

### **FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

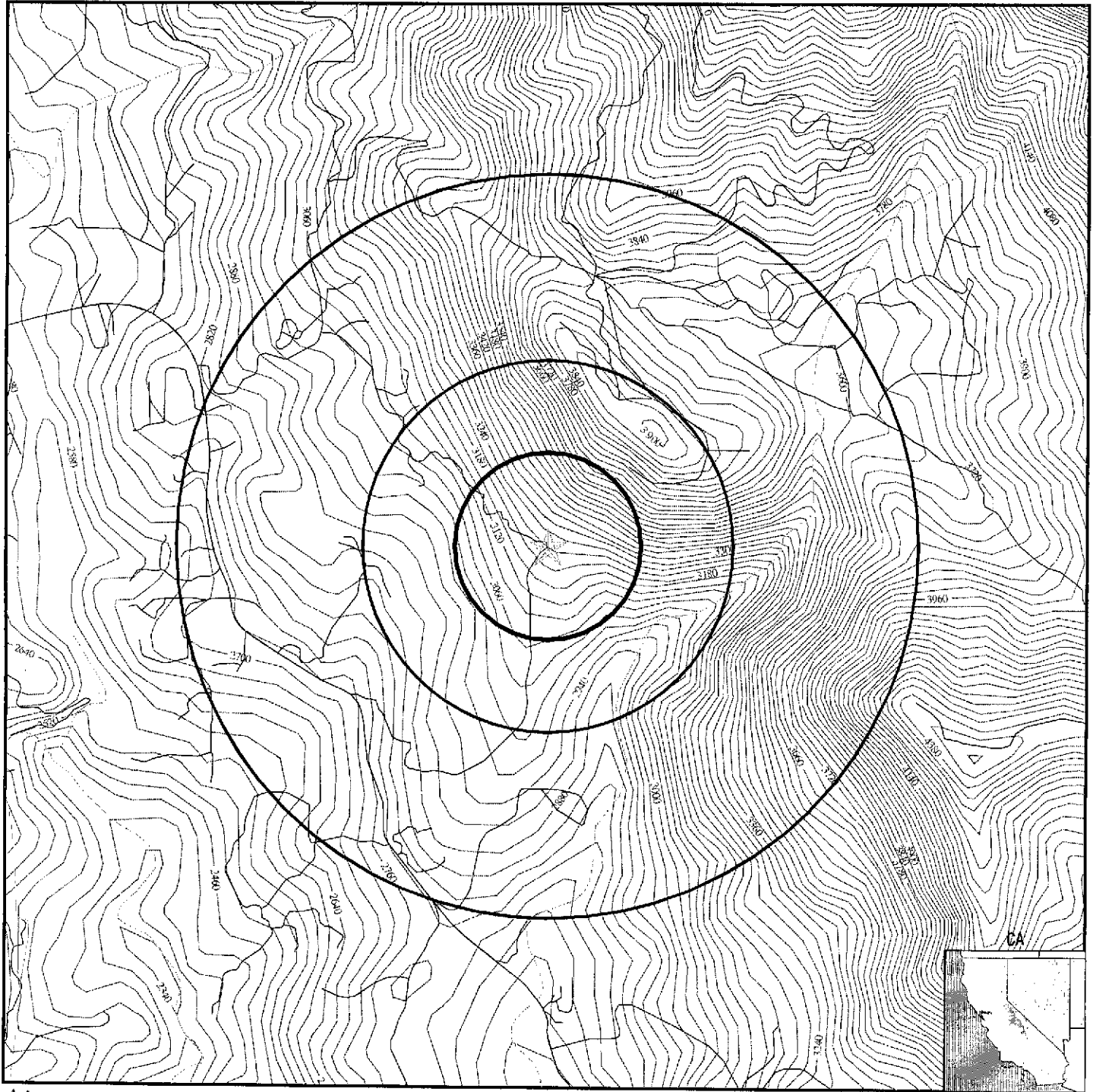
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### **STATE DATABASE WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

# PHYSICAL SETTING SOURCE MAP - 1374135.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- (GI) Indeterminate Groundwater Flow at Location
- (GV) Groundwater Flow Varies at Location
- (HD) Closest Hydrogeological Data
- Oil, gas or related wells

**TARGET PROPERTY:** North Fork Rancheria  
**ADDRESS:** Rainbow Drive  
**CITY/STATE/ZIP:** North Fork CA 93643  
**LAT/LONG:** 37.2217 / 119.4717

**CUSTOMER:** AES  
**CONTACT:** Pete Connelly  
**INQUIRY #:** 1374135.2s  
**DATE:** March 07, 2005 8:05 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: CA Radon

### Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
93643	4	0	0.00

Federal EPA Radon Zone for MADERA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

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Federal Area Radon Information for Zip Code: 93643

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.800 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### TOPOGRAPHIC INFORMATION

#### **USGS 7.5' Digital Elevation Model (DEM)**

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

### HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

### HYDROGEOLOGIC INFORMATION

#### **AQUIFLOW<sup>®</sup> Information System**

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

### GEOLOGIC INFORMATION

#### **Geologic Age and Rock Stratigraphic Unit**

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

#### **STATSGO: State Soil Geographic Database**

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### ADDITIONAL ENVIRONMENTAL RECORD SOURCES

#### **FEDERAL WATER WELLS**

##### **PWS: Public Water Systems**

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

##### **PWS ENF: Public Water Systems Violation and Enforcement Data**

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

##### **USGS Water Wells: USGS National Water Inventory System (NWIS)**

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### STATE RECORDS

#### California Drinking Water Quality Database

Source: Department of Health Services

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

#### California Oil and Gas Well Locations for District 2, 3, 5 and 6

Source: Department of Conservation

Telephone: 916-323-1779

### RADON

#### State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

**California Earthquake Fault Lines:** The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

### TARGET PROPERTY INFORMATION

#### ADDRESS

RAINBOW DRIVE  
NORTH FORK, CA 93643

#### COORDINATES

Latitude (North): 37.221700 - 37° 13' 18.1"  
Longitude (West): 119.471700 - 119° 28' 18.1"  
Universal Transverse Mercator: Zone 11  
UTM X (Meters): 280694.2  
UTM Y (Meters): 4122125.5  
Elevation: 3204 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 37119-B4 CASCADEL POINT, CA  
Source: USGS 7.5 min quad index

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ( "reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

#### FEDERAL ASTM STANDARD

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned  
CORRACTS..... Corrective Action Report  
RCRA-TSDF..... Resource Conservation and Recovery Act Information  
RCRA-LQG..... Resource Conservation and Recovery Act Information  
RCRA-SQG..... Resource Conservation and Recovery Act Information  
ERNS..... Emergency Response Notification System

#### STATE ASTM STANDARD

AWP..... Annual Workplan Sites



## EXECUTIVE SUMMARY

Cal-Sites.....	Calsites Database
CHMIRS.....	California Hazardous Material Incident Report System
Notify 65.....	Proposition 65 Records
Toxic Pits.....	Toxic Pits Cleanup Act Sites
SWF/LF.....	Solid Waste Information System
WMUDS/SWAT.....	Waste Management Unit Database
CA BOND EXP. PLAN.....	Bond Expenditure Plan
UST.....	List of Underground Storage Tank Facilities
INDIAN LUST.....	Leaking Underground Storage Tanks on Indian Land
INDIAN UST.....	Underground Storage Tanks on Indian Land
CA FID UST.....	Facility Inventory Database
HIST UST.....	Hazardous Substance Storage Container Database

### FEDERAL ASTM SUPPLEMENTAL

CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
Delisted NPL.....	National Priority List Deletions
FINDS.....	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS.....	Hazardous Materials Information Reporting System
MLTS.....	Material Licensing Tracking System
MINES.....	Mines Master Index File
NPL Liens.....	Federal Superfund Liens
PADS.....	PCB Activity Database System
ODI.....	Open Dump Inventory
DOD.....	Department of Defense Sites
INDIAN RESERV.....	Indian Reservations
UMTRA.....	Uranium Mill Tailings Sites
FUDS.....	Formerly Used Defense Sites
RAATS.....	RCRA Administrative Action Tracking System
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
SSTS.....	Section 7 Tracking Systems
FTTS INSP.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

### STATE OR LOCAL ASTM SUPPLEMENTAL

AST.....	Aboveground Petroleum Storage Tank Facilities
CLEANERS.....	Cleaner Facilities
CA WDS.....	Waste Discharge System
DEED.....	Deed Restriction Listing
REF.....	Unconfirmed Properties Referred to Another Agency
EMI.....	Emissions Inventory Data
NFA.....	No Further Action Determination
NFE.....	Properties Needing Further Evaluation
SCH.....	School Property Evaluation Program
HAZNET.....	Facility and Manifest Data

### EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas.....	Former Manufactured Gas (Coal Gas) Sites
---------------	--

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

## EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### STATE ASTM STANDARD

**CORTESE:** This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 2 Cortese sites within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b><i>DINUBA TIMBER INC NORTH FORK</i></b>	<b><i>57839 RD 225</i></b>	<b><i>1/2 - 1 SSW</i></b>	<b><i>A3</i></b>	<b><i>9</i></b>
<b><i>SEQUOIA FOREST PRODUCTS</i></b>	<b><i>57839 RD 225</i></b>	<b><i>1/2 - 1 W</i></b>	<b><i>4</i></b>	<b><i>16</i></b>

**LUST:** The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/10/2005 has revealed that there are 2 LUST sites within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b><i>DINUBA TIMBER INC NORTH FORK</i></b>	<b><i>57839 RD 225</i></b>	<b><i>1/2 - 1 SSW</i></b>	<b><i>A3</i></b>	<b><i>9</i></b>
<b><i>SEQUOIA FOREST PRODUCTS</i></b>	<b><i>57839 RD 225</i></b>	<b><i>1/2 - 1 W</i></b>	<b><i>4</i></b>	<b><i>16</i></b>

**VCP:** Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 11/09/2004 has revealed that there is 1 VCP site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
FORMER NORTH FORK MILL SITE	57839 ROAD 225	1/2 - 1 SSW	A1	6

## EXECUTIVE SUMMARY

### STATE OR LOCAL ASTM SUPPLEMENTAL

**CA SLIC:** SLIC Region comes from the California Regional Water Quality Control Board.

A review of the CA SLIC list, as provided by EDR, has revealed that there is 1 CA SLIC site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>DINUBA TIMBER INC NORTH FORK</b>	<b>57839 RD 225</b>	<b>1/2 - 1 SSW</b>	<b>A3</b>	<b>9</b>

### BROWNFIELDS DATABASES

**US BROWNFIELDS:** The EPA's listing of Brownfields properties addressed by Cooperative Agreement Recipients and Brownfields properties addressed by Targeted Brownfields Assessments

A review of the US BROWNFIELDS list, as provided by EDR, has revealed that there is 1 US BROWNFIELDS site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>NORTH FORK MILL SITE</b>	<b>57839 ROAD 225</b>	<b>1/2 - 1 SSW</b>	<b>A2</b>	<b>8</b>

**VCP:** Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 11/09/2004 has revealed that there is 1 VCP site within approximately 1 mile of the target property.

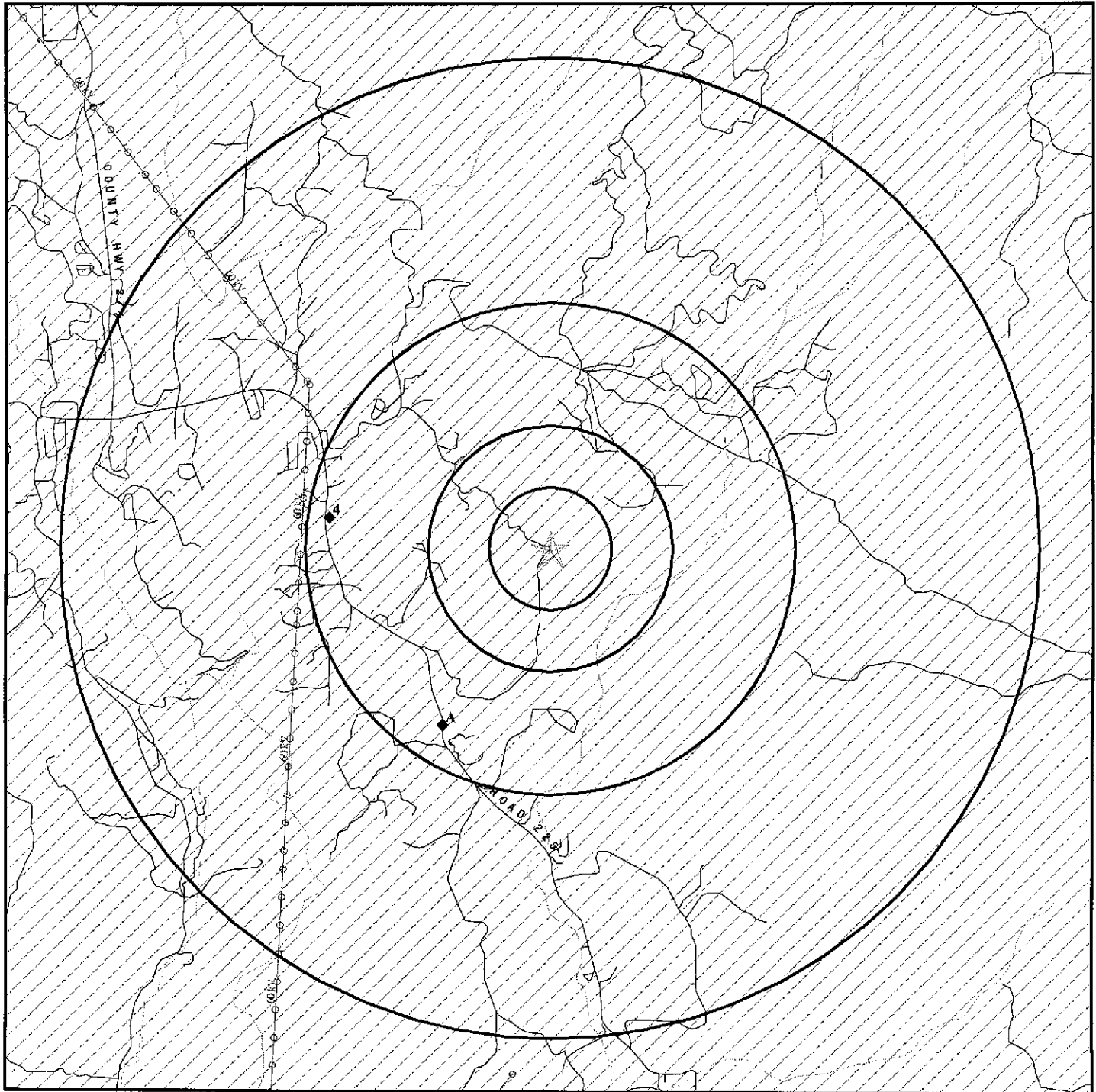
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<b>FORMER NORTH FORK MILL SITE</b>	<b>57839 ROAD 225</b>	<b>1/2 - 1 SSW</b>	<b>A1</b>	<b>6</b>

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
NORTH FORK RANGER STATION	Cortese
STRAWBERRY MINE INDUSTRIAL PROCESSING DS	SWF/LF
STRAWBERRY MINE MUNICIPAL WASTE DS	SWF/LF
NORTH FORK DUMP	SWF/LF
J W TIRE CUTTER	SWF/LF
NORTH FORK RANGER STATION	VCP
SAN JOAQUIN #2 POWER HOUSE	HIST UST
NORTH FORK RANGER STATION	HIST UST
NORTH FORK CEMETERY	HIST UST
MADERA COUNTY ROAD YARD #5	HIST UST
BATTERSON WORK CENTER	AST
CHAWANAKEE JOINT USD-NORTH FORK SCHOOL	HAZNET
PG&E SAN JOAQUIN 1A HYDRO PLANT	RCRA-SQG, FINDS, HAZNET
ACK'S PASADENA AUTO	HAZNET
T9S R23E NE OF THE NW QUARTER OF S8, ABOUT 6 MI FROM NORTH F	ERNS
NORTH FORK RANGER STATION	CA SLIC
NORTH FORK MILL HOUSING FACILI	CA WDS
NORTH FORK SWDS	CA WDS

# OVERVIEW MAP - 1374135.2s - AES



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Coal Gasification Sites

■ National Priority List Sites

■ Landfill Sites

■ Dept. Defense Sites

0 1/2 1 2 Miles

■ Indian Reservations BIA

~ Power transmission lines

~ Oil & Gas pipelines

■ 100-year flood zone

■ 500-year flood zone

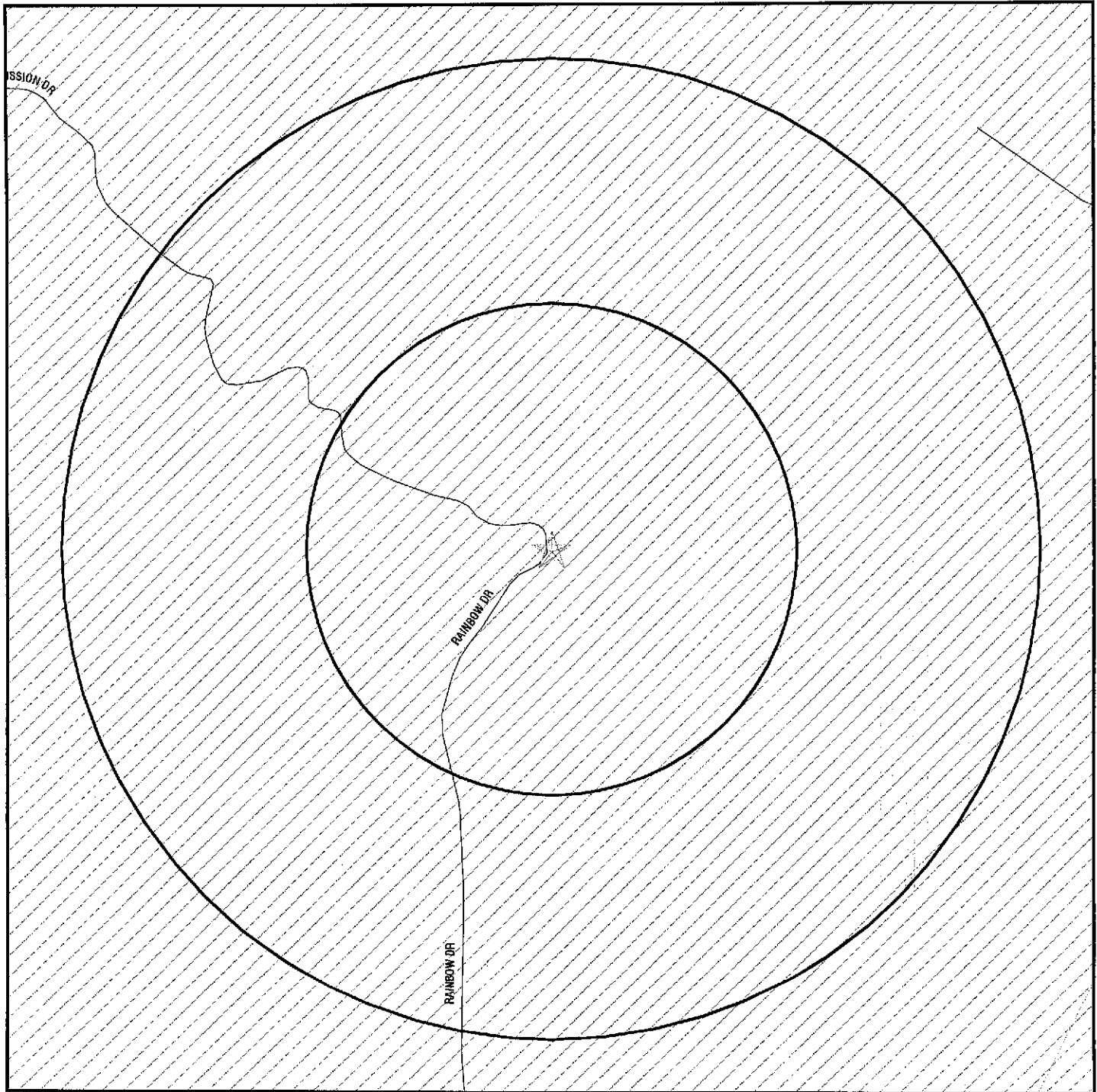
■ Areas of Concern



TARGET PROPERTY: North Fork Rancheria  
ADDRESS: Rainbow Drive  
CITY/STATE/ZIP: North Fork CA 93643  
LAT/LONG: 37.2217 / 119.4717

CUSTOMER: AES  
CONTACT: Pete Connelly  
INQUIRY #: 1374135.2s  
DATE: March 07, 2005 8:05 pm

# DETAIL MAP - 1374135.2s - AES



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Coal Gasification Sites

▲ Sensitive Receptors

■ National Priority List Sites

■ Landfill Sites

■ Dept. Defense Sites

0 1/16 1/8 1/4 Miles

■ Indian Reservations BIA

■ Areas of Concern

■ Oil & Gas pipelines

■ 100-year flood zone

■ 500-year flood zone



TARGET PROPERTY: North Fork Rancheria  
ADDRESS: Rainbow Drive  
CITY/STATE/ZIP: North Fork CA 93643  
LAT/LONG: 37.2217 / 119.4717

CUSTOMER: AES  
CONTACT: Pete Connelly  
INQUIRY #: 1374135.2s  
DATE: March 07, 2005 8:05 pm



## MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b><u>FEDERAL ASTM STANDARD</u></b>								
NPL		1.500	0	0	0	0	0	0
Proposed NPL		1.500	0	0	0	0	0	0
CERCLIS		1.000	0	0	0	0	NR	0
CERC-NFRAP		0.750	0	0	0	0	NR	0
CORRACTS		1.500	0	0	0	0	0	0
RCRA TSD		1.000	0	0	0	0	NR	0
RCRA Lg. Quan. Gen.		0.750	0	0	0	0	NR	0
RCRA Sm. Quan. Gen.		0.750	0	0	0	0	NR	0
ERNS		0.500	0	0	0	NR	NR	0
<b><u>STATE ASTM STANDARD</u></b>								
AWP		1.500	0	0	0	0	0	0
Cal-Sites		1.500	0	0	0	0	0	0
CHMIRS		0.500	0	0	0	NR	NR	0
Cortese		1.000	0	0	0	2	NR	2
Notify 65		1.500	0	0	0	0	0	0
Toxic Pits		1.500	0	0	0	0	0	0
State Landfill		1.000	0	0	0	0	NR	0
WMUDS/SWAT		1.000	0	0	0	0	NR	0
LUST		1.000	0	0	0	2	NR	2
CA Bond Exp. Plan		1.500	0	0	0	0	0	0
UST		0.750	0	0	0	0	NR	0
VCP		1.000	0	0	0	1	NR	1
INDIAN LUST		1.000	0	0	0	0	NR	0
INDIAN UST		0.750	0	0	0	0	NR	0
CA FID UST		0.750	0	0	0	0	NR	0
HIST UST		0.750	0	0	0	0	NR	0
<b><u>FEDERAL ASTM SUPPLEMENTAL</u></b>								
CONSENT		1.500	0	0	0	0	0	0
ROD		1.500	0	0	0	0	0	0
Delisted NPL		1.500	0	0	0	0	0	0
FINDS		0.500	0	0	0	NR	NR	0
HMIRS		0.500	0	0	0	NR	NR	0
MLTS		0.500	0	0	0	NR	NR	0
MINES		0.750	0	0	0	0	NR	0
NPL Liens		0.500	0	0	0	NR	NR	0
PADS		0.500	0	0	0	NR	NR	0
ODI		1.000	0	0	0	0	NR	0
DOD		1.500	0	0	0	0	0	0
INDIAN RESERV		1.500	0	0	0	0	0	0
UMTRA		1.000	0	0	0	0	NR	0
FUDS		1.500	0	0	0	0	0	0
RAATS		0.500	0	0	0	NR	NR	0
TRIS		0.500	0	0	0	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TSCA		0.500	0	0	0	NR	NR	0
SSTS		0.500	0	0	0	NR	NR	0
FTTS		0.500	0	0	0	NR	NR	0

### STATE OR LOCAL ASTM SUPPLEMENTAL

AST		0.500	0	0	0	NR	NR	0
CLEANERS		0.750	0	0	0	0	NR	0
CA WDS		0.500	0	0	0	NR	NR	0
DEED		0.500	0	0	0	NR	NR	0
REF		0.750	0	0	0	0	NR	0
EMI		0.500	0	0	0	NR	NR	0
NFA		0.750	0	0	0	0	NR	0
NFE		0.750	0	0	0	0	NR	0
SCH		0.750	0	0	0	0	NR	0
SLIC		1.000	0	0	0	1	NR	1
HAZNET		0.500	0	0	0	NR	NR	0

### EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas		1.500	0	0	0	0	0	0
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### BROWNFIELDS DATABASES

US BROWNFIELDS		1.000	0	0	0	1	NR	1
VCP		1.000	0	0	0	1	NR	1

#### NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1  
SSW  
1/2-1  
4437 ft.

**FORMER NORTH FORK MILL SITE**  
**57839 ROAD 225**  
**NORTH FORK, CA 93643**

VCP S106568251  
N/A

Relative:  
Lower

Site 1 of 3 in cluster A

Actual:  
2776 ft.

VCP:

Facility ID : 20080002  
Dtsc Region Code : 1  
Region Code Definition : SACRAMENTO  
County Code : 20  
Site Name Under : Not reported  
Current Status Date : 09202004  
Current Status Code : VCP  
Current Status : VOLUNTARY CLEANUP PROGRAM  
Lead Agency Code : DTSC  
Lead Agency : DEPT OF TOXIC SUBSTANCES CONTROL  
Site Type Code : VCP  
Site Type : VOLUNTARY CLEANUP PROGRAM  
National Priorities List : N  
Tier : Not reported  
Source Of Funding Code : Not reported  
Staff Member : MPFISTER  
Supervisor : Not reported  
Sic Code : 08  
Sic Code Definition : FORESTRY  
Site Mitigatn & Brnfls Reuse Prog (SMBR) Code : CC  
SMBR Branch : CENTRAL CALIFORNIA  
Regional Water Quality Control Board : CV  
RWQCB Definition : CENTRAL VALLEY  
Site Access Controlled : Not reported  
Listed In Haz Wst & Substncls Sites List (CORTESE) : Not reported  
Date Hazard Ranked : Not reported  
GW Contamination Suspected : Not reported  
# Of Sources Contributing To Contamination : 0.00000  
Lat/Long : 0.00000° 0.00000° 0.00000° / 0.00000° 0.00000° 0.00000°  
Direction Lat : Not reported  
Direction Long : Not reported  
Lat/long Method : Not reported  
Entity Lat/long Coordinates Refer To : Not reported  
State Assembly Distt Code : 25  
State Senate Distt Code : 14  
Identifying Code: CSTAR  
ID Value: 101699-11  
Other ID Desc: CALSTARS CODE  
Alternate Name(s): BENDIX FOREST PRODUCTS  
Alternate Name(s): AMERICAN FOREST PRODUCTS- NORTH FORK  
Alternate Name(s): FORMER NORTH FORK MILL SITE  
Address(es) : P.O. BOX 338  
NORTH FORK, CA 93643  
Address(es) : 57839 ROAD 225  
NORTH FORK, CA 93643  
Address(es) : MAMMOTH POOL ROAD  
NORTH FORK, CA 93643

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

FORMER NORTH FORK MILL SITE (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S106568251

Background Info :

THE SITE WAS OPERATED AS A LUMBER MILL FROM 1942 TO 1994. SOUTH FORK TIMBER INDUSTRIES WAS THE LAST OPERATOR OF THE LUMBER MILL, AND IN 1994 DONATED THE PROPERTY TO THE REDEVELOPMENT AGENCY OF MADERA COUNTY. DURING OPERATIONS, LOGS WERE DELIVERIES TO THE SITE, WHERE THEY WERE STORED ON TWO LOG DECKS PENDING MILLING. LOGS WERE MILLED IN THE AMIN SAW MILL BUILDING; THE CUT LUMBER THEN PASSED THROUGH A DIP TANK. THE WOOD WAS DIPPED TO RETARD FUNGAL GROWTH, WHICH COULD DISCOLOR THE LUMBER. PENTACHLOROPHENOL WAS USED IN THE DIP SOLUTION, UNTIL ITS USE WAS DISCONTINUED IN THE 1980s. THE LUMBER WAS DRIED IN KILNS, COOLED, PLANED AND STORED ON SITE PENDING SALE. A WOOD WASTE-FIRED COGENERATION PLAN WAS OPERATED ON SITE FROM 1987 TO 1994. THE FACILITY WAS FIRED BY WOOD WASTE GENERATED IN THE PRODUCTION OF LUMBER AT THE SAWMILL, AS WELL AS, WOOD FROM OUTSIDE SOURCES. ASH GENERATED BY THE CO-GENERATION PLANT WAS STORED ONSITE PENDING REMOVAL AND OFF SITE DISPOSAL. SUBSEQUENT TO THE CESSATION OF OPERATIONS, EQUIPMENT AND BUILDINGS IN THE COGENERATION PLANT WERE ENTIRLEY REMOVED. IN THE LATE 1990s AND OVER A PERIOD OF ABOUT TWO YEARS, U.S. EPA REPRESENTATIVES COMPLETED SOIL ASSESSMENT RELATED ACTIVITIES AT THE SITE. AS A RESULT OF THIS WORK, AND OTHER MORE RECENT ASSESSMENT WORK, PENTACHLOROPHENOL HAS BEEN IDENTIFIED IN SITE SOILS, AND DIESEL AND OTHER FUELS HAVE BEEN IDENTIFIED IN GROUNDWATER. IN 2003, MADERA COUNTY WAS THE RECIPIENT OF A BROWNFIELDS ASSESSMENT GRANT FROM THE U.S. EPA. THIS GRANT IS INTENDED TO PROVIDE THE FUNDS NECESSARY FOR COMPLETING NEEDED ASSESSMENT WORK AT THE NORTH FORK MILL SITE. THE REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) IS OVERSEEING ASSESSMENT WORK ASSOCIATED WITH THE DIESEL AND OTHER FUELS IN GROUNDWATER AT THE SITE. A PENDING VOLUNTARY CLEANUP AGREEMENT (VCA) WITH MADERA COUNTY INCLUDES PROVISIONS FOR THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC) TO PROVIDE REVIEW AND OVERSIGHT OF OTHER ASSESSMENT RELATED ACTIVITIES. THESE INCLUDE A REMEDIAL INVESTIGATION, RISK ASSESSMENT, AND A FEASIBILITY STUDY.

Facility Id : Not reported  
AWP Activities Code : Not reported  
DTSC Site Activity Code : Not reported  
Activity Code Def: Not reported  
AWP Activity Id : Not reported  
Dt Activity Due For Completion : Not reported  
Revised Due Date : Not reported  
Date Activity Completed : Not reported  
Est # Of Person-years To Complete : Not reported  
Est. Size Of An Activity Code : Not reported  
Site Status When Activity Commitment Made : Not reported  
Status Code Definition : Not reported  
Cubic Yards Of Solids Removed At Completion : Not reported  
Gallons Of Liquid Removed Upon Completion : Not reported  
Cubic Yards Of Solids Treated Upon Completion : Not reported  
Actvty Deleted Via Commitmnt/Completns Screen : Not reported  
Special Program Code: Not reported  
Special Program : Not reported  
Comments Date : 05221996

Comments : American Forest Products (AFP) site has been a lumber mill processing wood since 1942. From 1948 until 1968, pine boards were dipped into a preservative to retard staining.

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

FORMER NORTH FORK MILL SITE (Continued)

EDR ID Number  
EPA ID Number

Database(s)

S106568251

Copper 8-quinolinolate (PQ-8) and pentachlorophenol (PCP) were two of the preservatives used. Waste water generated by the mill and a wood waste fired cogeneration facility was disposed of to an existing pond system. In 1986 RWQCB and DTSC sampled water in an area near dip pond #2. PCP and 2,3,4,5-tetrachlorophenol were detected at 6 ug/L. AFP is currently operating on a Waste Discharge Requirement Permit under RWQCB oversight. RWQCB currently monitors the pond and any discharge to the nearby creek. Refer to RWQCB. ORDER/VCA -- A copy of the executed Voluntary Cleanup Agreement (VCA) with Madera County was transmitted. Madera County received a \$200,000 assessment grant from U.S. Environmental Protection Agency (U.S. EPA). Madera County plans to complete a Remedial Investigation, Health-Based Risk Assessment, and Feasibility Study. Provisions for the Department of Toxic Substances Control (DTSC) provide oversight are included in the VCA.

A2 NORTH FORK MILL SITE  
SSW 57839 ROAD 225  
1/2-1 NORTH FORK, CA 93643  
4451 ft.

US BROWNFIELDS 1006884606  
N/A

Relative:  
Lower

Site 2 of 3 in cluster A

Actual:  
2781 ft.

US BROWNFIELDS:

Pilot Name: Not reported  
EPA Region: 09  
EPA ID: CAB000905927  
Site ID: 0905927  
Ownership Type: Not reported  
Action: TARGETED BROWNFIELDS ASSESSMENTS  
Action Complete Date: 02/12/1998

Pilot Name: Not reported  
EPA Region: 09  
EPA ID: CAB000905927  
Site ID: 0905927  
Ownership Type: Not reported  
Action: TARGETED BROWNFIELDS ASSESSMENTS  
Action Complete Date: 07/27/1998

Pilot Name: Not reported  
EPA Region: 09  
EPA ID: CAB000905927  
Site ID: 0905927  
Ownership Type: Not reported  
Action: TARGETED BROWNFIELDS ASSESSMENTS  
Action Complete Date: 08/31/1999

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number

EPA ID Number

A3 DINUBA TIMBER INC NORTH FORK  
SSW 57839 RD 225  
1/2-1 NORTH FORK, CA 93643  
4451 ft.

Relative:  
Lower

Actual:  
2781 ft.

Site 3 of 3 in cluster A

RCRA-SQG 1000360793  
FINDS CAD030998363  
HAZNET  
LUST  
Cortese  
CA SLIC  
CERC-NFRAP  
HIST UST  
EMI

CERCLIS-NFRAP Classification Data:

Site Incident Category: Not reported

Non NPL Code: NFRAP

Ownership Status: Unknown

CERCLIS-NFRAP Assessment History:

Assessment: DISCOVERY

Assessment: PRELIMINARY ASSESSMENT

Assessment: SITE INSPECTION

Assessment: SITE INSPECTION

Assessment: ARCHIVE SITE

Federal Facility: Not a Federal Facility

NPL Status: Not on the NPL

Completed: 10/01/1979

Completed: 08/01/1981

Completed: 09/01/1982

Completed: 07/20/1990

Completed: 07/20/1990

CERCLIS-NFRAP Alias Name(s):

BENDIX FOREST PROD CORP N FORK

RCRA Info:

Owner: SOUTH FORK TIMBER IND INC  
(209) 591-2000

EPA ID: CAD030998363

Contact: J STEVEN WORTHLEY  
(209) 591-2000

Classification: Small Quantity Generator

TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:

Resource Conservation and Recovery Act Information system

State LUST:

Cross Street: RD 274

Qty Leaked: Not reported

Case Number: 5T20000022

Reg Board: Not reported

Chemical: Diesel

Lead Agency: Regional Board

Local Agency: 20000

Case Type: Soil only

Status: Case Closed

Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)

Review Date: Not reported

Confirm Leak: Not reported

Workplan: Not reported

Prelim Assess: Not reported

Pollution Char: Not reported

Remed Plan: Not reported

Remed Action: Not reported

Monitoring: Not reported

Close Date: 1987-10-27 00:00:00

Release Date: Not reported

Cleanup Fund Id: Not reported

Discover Date: Not reported



Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000360793

Enforcement Dt : 1965-01-01 00:00:00  
Enf Type: Not reported  
Enter Date : 1987-10-29 00:00:00  
Funding: Not reported  
Staff Initials: DEL  
How Discovered: Tank Closure  
How Stopped: Not reported  
Interim : Not reported  
Leak Cause: Spill  
Leak Source: UNK  
MTBE Date : Not reported  
Max MTBE GW : Not reported  
MTBE Tested: Not Required to be Tested.  
Priority: 4  
Local Case # : Not reported  
Beneficial: Not reported  
Staff : JWH  
GW Qualifier : Not reported  
Max MTBE Soil : Not reported  
Soil Qualifier : Not reported  
Hydr Basin #: UNNAMED BASIN  
Operator : RODGER,GARY  
Oversight Prgm: LUST  
Review Date : 1987-10-27 00:00:00  
Stop Date : Not reported  
Work Suspended :No  
Responsible Party:SEQUOIA FOREST INDUSTRIES  
RP Address: 57839 ROAD 225, NORTH FORK, CA 93643  
Global Id: T0603900022  
Org Name: Not reported  
Contact Person: Not reported  
MTBE Conc: 0  
Mtbe Fuel: 0  
Water System Name: Not reported  
Well Name: Not reported  
Distance To Lust: 0  
Waste Discharge Global ID: Not reported  
Waste Disch Assigned Name: Not reported  
Summary : ODOR OF DIESEL. SOIL REMOVED AND SPREAD TO ALLOW AERATION ON  
SITE. TANKS IN GOOD SHAPE.  
SOIL SAMPLE ANALYSES INDICATE DETECTABLE LEVELS OF TRPH AT  
45,000 PPM.  
  
Cross Street: RD 274  
Qty Leaked: Not reported  
Case Number 5T20000104  
Reg Board: Not reported  
Chemical: Waste Oil  
Lead Agency: Regional Board  
Local Agency : 20000  
Case Type: Drinking Water Aquifer affected  
Status: Pollution Characterization  
Review Date: Not reported  
Workplan: Not reported  
Pollution Char: Not reported  
Remed Action: Not reported  
Monitoring: Not reported  
  
Confirm Leak: Not reported  
Prelim Assess: Not reported  
Remed Plan: Not reported

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000360793

Close Date: Not reported  
Release Date: Not reported  
Cleanup Fund Id : Not reported  
Discover Date : Not reported  
Enforcement Dt : 1965-01-01 00:00:00  
Enf Type: Not reported  
Enter Date : 1991-07-05 00:00:00  
Funding: Responsible Party  
Staff Initials: JAN  
How Discovered: Tank Closure  
How Stopped: Not reported  
Interim : Not reported  
Leak Cause: UNK  
Leak Source: UNK  
MTBE Date : Not reported  
Max MTBE GW : Not reported  
MTBE Tested: Not Required to be Tested.  
Priority: Not reported  
Local Case # : Not reported  
Beneficial: Not reported  
Staff : JWH  
GW Qualifier : Not reported  
Max MTBE Soil : Not reported  
Soil Qualifier : Not reported  
Hydr Basin #: UNNAMED BASIN  
Operator : MR DICK WATKINS  
Oversight Prgm: LUST  
Review Date : 1991-07-05 00:00:00  
Stop Date : Not reported  
Work Suspended No  
Responsible PartySOUTHFORK TIMBER INDUSTRIES  
RP Address: PO BOX 305, DINUBA, 93618  
Global Id: T0603900104  
Org Name: Not reported  
Contact Person: Not reported  
MTBE Conc: 0  
Mtbe Fuel: 0  
Water System Name: Not reported  
Well Name: Not reported  
Distance To Lust: 0  
Waste Discharge Global ID: Not reported  
Waste Disch Assigned Name: Not reported  
Summary : ODOR OF DIESEL. SOIL REMOVED AND SPREAD TO ALLOW AERATION ON  
SITE. TANKS IN GOOD SHAPE.  
SOIL SAMPLE ANALYSES INDICATE DETECTABLE LEVELS OF TRPH AT  
45,000 PPM.  
LUST Region 5:  
Substance: DIESEL  
Case Type: Soil only  
Program: LUST  
Staff Initials: JWH  
Status: Case Closed  
MTBE Code: N/A  
Lead Agency: Regional  
Substance: WASTE OIL  
Case Type: Drinking Water Aquifer affected

Case Number: 5T20000022

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000360793

Program: LUST  
Staff Initials: JWH  
Status: Pollution Characterization  
MTBE Code: N/A  
Lead Agency: Regional  
Case Number: 5T20000104

HAZNET:

Gepaid: CAC002271169  
TSD EPA ID: CAL000190080  
Gen County: Madera  
Tsd County: San Joaquin  
Tons: 1.6856  
Waste Category: Asbestos-containing waste  
Disposal Method: Disposal, Land Fill  
Contact: THE NORTH FORK COMM CTR  
Telephone: (559) 877-2244  
Mailing Address: PO BOX 1484

NORTH FORK, CA 93643

County Madera

Gepaid: CAC000763016  
TSD EPA ID: CAT099452708  
Gen County: Madera  
Tsd County: 0  
Tons: 3.3360  
Waste Category: Waste oil and mixed oil  
Disposal Method: Recycler  
Contact: SEQUOIA FOREST INDUSTRIES  
Telephone: (209) 592-2000  
Mailing Address: 57839 RD 225

NORTH FORK, CA 93643

County Madera

Gepaid: CAC002518247  
TSD EPA ID: Not reported  
Gen County: Madera  
Tsd County: San Bernardino  
Tons: 0.25  
Waste Category: Other organic solids  
Disposal Method: Transfer Station  
Contact: MARK STAMAS  
Telephone: (559) 877-2244  
Mailing Address: PO BOX 1484

NORTH FORK, CA 93643

County Not reported

Gepaid: CAC002518247  
TSD EPA ID: Not reported  
Gen County: Madera  
Tsd County: 99  
Tons: 1.87  
Waste Category: Liquids with polychlorinated biphenyls > 50 mg/l  
Disposal Method: Treatment, Incineration  
Contact: MARK STAMAS  
Telephone: (559) 877-2244  
Mailing Address: PO BOX 1484

NORTH FORK, CA 93643

County Not reported

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000360793

CORTESE:

Region: CORTESE  
Fac Address 2: 57839 RD 225

Region: CORTESE  
Fac Address 2: 57839 RD 225

CA STATE SLIC :

Global Id : SL0603915265  
Region : STATE  
Assigned Name : SLIC SITE  
Lead Agency Contact : JEFFREY HANNEL  
Lead Agency : CENTRAL VALLEY RWQCB (REGION 5F)  
Lead Agency Case Number : Not reported  
Responsible Party : Not reported  
Recent Dtw : Not reported  
Substance Released : Not reported

UST HIST:

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: PRODUCT  
Tank Num: 1  
Tank Capacity: 00010000  
Type of Fuel: DIESEL  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #1  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: PRODUCT  
Tank Num: 2  
Tank Capacity: 00010000  
Type of Fuel: UNLEADED  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #2  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: WASTE  
Tank Num: 3  
Tank Capacity: 00000300  
Type of Fuel: WASTE OIL  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #3  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000360793

Tank Used for: NORTH FORK, CA 93643  
PRODUCT  
Tank Num: 4  
Tank Capacity: 00000550  
Type of Fuel: UNLEADED  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Container Num: #4  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 5  
Tank Capacity: 00012000  
Type of Fuel: DIESEL  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Container Num: #5  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 6  
Tank Capacity: 00012000  
Type of Fuel: DIESEL  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Container Num: #6  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 7  
Tank Capacity: 00010000  
Type of Fuel: DIESEL  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Container Num: #7  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Tank Used for: PRODUCT  
Tank Num: 8  
Tank Capacity: 00010000  
Type of Fuel: DIESEL  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Container Num: #8  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

EDR ID Number  
EPA ID Number

Database(s)

1000360793

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: WASTE  
Tank Num: 9  
Tank Capacity: 00003000  
Type of Fuel: Not reported  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #9  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: WASTE  
Tank Num: 10  
Tank Capacity: 00700000  
Type of Fuel: Not reported  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #1 POND  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: WASTE  
Tank Num: 11  
Tank Capacity: 00600000  
Type of Fuel: Not reported  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #2 POND  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: WASTE  
Tank Num: 12  
Tank Capacity: 00769000  
Type of Fuel: Not reported  
Leak Detection: Visual  
Contact Name: GLENDOL THOMASON  
Facility Type: Other

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #3 POND  
Year Installed: Not reported  
Tank Construction: Not Reported

Telephone: (209) 877-2211  
Other Type: LUMBER MANUFACTURING

Facility ID: 8191  
Total Tanks: 14  
Owner Address: 57839 ROAD 225  
NORTH FORK, CA 93643  
Tank Used for: WASTE  
Tank Num: 13  
Tank Capacity: 01017630  
Type of Fuel: Not reported

Owner Name: AMERICAN FOREST PRODUCTS COMPA  
Region: STATE

Container Num: #4 POND  
Year Installed: Not reported  
Tank Construction: Not Reported



Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

DINUBA TIMBER INC NORTH FORK (Continued)

1000360793

Leak Detection:	Visual	Telephone:	(209) 877-2211
Contact Name:	GLENDOL THOMASON	Other Type:	LUMBER MANUFACTURING
Facility Type:	Other		
Facility ID:	8191	Owner Name:	AMERICAN FOREST PRODUCTS COMPA
Total Tanks:	14	Region:	STATE
Owner Address:	57839 ROAD 225 NORTH FORK, CA 93643		
Tank Used for:	PRODUCT		
Tank Num:	14	Container Num:	#5 FIRE PO
Tank Capacity:	00600000	Year Installed:	1953
Type of Fuel:	Not reported	Tank Construction:	12 inches
Leak Detection:	Visual		
Contact Name:	GLENDOL THOMASON	Telephone:	(209) 877-2211
Facility Type:	Other	Other Type:	LUMBER MANUFACTURING

EMISSIONS :

Facility ID :	14
Air District Code :	SJU
SIC Code :	4931
Total Priority Score :	Not reported
Health Risk Assessment :	Not reported
Non-cancer Chronic Haz Index :	Not reported
Non-cancer Acute Haz Index :	Not reported
Air Basin :	SJV
Air District Name :	SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System :	Not reported
Consolidated Emission Reporting Rule :	Not reported
County Code :	20
County ID :	20

4  
West  
1/2-1  
4810 ft.

SEQUOIA FOREST PRODUCTS  
57839 RD 225  
NORTH FORK, CA 93643

LUST S101298611  
Cortese N/A

Relative:  
Lower

Actual:  
2746 ft.

State LUST:

Cross Street:	Not reported	Confirm Leak:	Not reported
Qty Leaked:	Not reported	Prelim Assess:	1996-10-03 00:00:00
Case Number	5T20000167	Remed Plan:	Not reported
Reg Board:	Not reported		
Chemical:	Gasoline		
Lead Agency:	Regional Board		
Local Agency :	20000		
Case Type:	Drinking Water Aquifer affected		
Status:	Preliminary site assessment underway		
Review Date:	Not reported		
Workplan:	1996-10-03 00:00:00		
Pollution Char:	Not reported		
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	Not reported		
Release Date:	Not reported		
Cleanup Fund Id :	Not reported		
Discover Date :	Not reported		
Enforcement Dt :	1965-01-01 00:00:00		
Enf Type:	SEL		
Enter Date :	1996-10-11 00:00:00		
Funding:	Responsible Party		

Map ID  
Direction  
Distance  
Distance (ft.)  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SEQUOIA FOREST PRODUCTS (Continued)**

**S101298611**

Staff Initials: SUS  
How Discovered: Tank Closure  
How Stopped: Not reported  
Interim : Not reported  
Leak Cause: UNK  
Leak Source: Piping  
MTBE Date : Not reported  
Max MTBE GW : Not reported  
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected  
Priority: Not reported  
Local Case # : Not reported  
Beneficial: Not reported  
Staff : JWH  
GW Qualifier : Not reported  
Max MTBE Soil : 46 Parts per Million  
Soil Qualifier : =  
Hydr Basin #: UNNAMED BASIN  
Operator : Not reported  
Oversight Prgm: LUST  
Review Date : 1996-10-11 00:00:00  
Stop Date : Not reported  
Work Suspended :No  
Responsible Party:DINUBA TIMBER INDUSTRIES  
RP Address: P.O. DRAWER P, TOWNSEND, MT 59644  
Global Id: T0603900164  
Org Name: Not reported  
Contact Person: Not reported  
MTBE Conc: 1  
Mtbe Fuel: 1  
Water System Name: Not reported  
Well Name: Not reported  
Distance To Lust: 0  
Waste Discharge Global ID: Not reported  
Waste Disch Assigned Name: Not reported  
Summary : THE DISPENSERS & PIPING APPEAR TO HAVE CAUSED CONTAMINATION.THERE WAS ODOR & DISCOLORATION UNDER THE DISPENSERS.

**LUST Region 5:**

Substance: GASOLINE  
Case Type: Drinking Water Aquifer affected  
Program: LUST  
Staff Initials: JWH  
Status: Preliminary site assessment underway  
MTBE Code: N/A  
Lead Agency: Regional

Case Number: 5T20000167

**CORTESE:**

Region: CORTESE  
Fac Address 2: 57839 RD 225

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NORTH FORK	S108486072	NORTH FORK RANGER STATION	53025 RD 225	93643	CA SLIC
NORTH FORK	S102814125	CHAWANAKEE OINT USD-NORTH FORK SCHOOL	33087 RD 228	93643	HAZNET
NORTH FORK	S102361092	STRAWBERRY MINE INDUSTRIAL PROCESSING DS	BEASORE RD; 1.5 MI NW CLOVER MEADOW RS	93643	SWF/LF
NORTH FORK	S102361096	STRAWBERRY MINE MUNICIPAL WASTE DS	BEASORE RD; 1.5 MI NW CLOVER MEADOW RS	93643	SWF/LF
NORTH FORK	S105025241	NORTH FORK RANGER STATION	P.O. BOX 10 51003 RD 225	93643	Cortese
NORTH FORK	S104310401	NORTH FORK MILL HOUSING FACILI	PO BOX 943	93643	CA WDS
NORTH FORK	1000198487	PG&E SAN JOAQUIN 1A HYDRO PLANT	CORRINE LAKE OFF ROAD 222	93643	RCRA-SQG, FINDS, HAZNET
NORTH FORK	S105255330	NORTH FORK SWDS	MALUM RIDGE ROAD	93643	CA WDS
NORTH FORK	U001589669	SAN JOAQUIN #2 POWER HOUSE	2 MI N OF NORTH FORK ON ROAD 2	93643	HIST UST
NORTH FORK	S101089799	NORTH FORK RANGER STATION	P O BOX 10 (51003 ROAD 225)	93643	VCP
NORTH FORK	94357984	T9S R23E NE OF THE NW QUARTER OF S8, ABOUT 6 MI FROM NORTH F	T9S R23E NE OF THE NW QUARTER OF S8, ABOUT 6 MI FROM NORTH F	93643	ERNS
NORTH FORK	U001589664	NORTH FORK RANGER STATION	ROAD 200	93643	HIST UST
NORTH FORK	U001589663	NORTH FORK CEMETERY	ROAD 228	93643	HIST UST
NORTH FORK	S102361107	NORTH FORK DUMP	3699 ROAD 274, NORTH FORK	93643	SWF/LF
NORTH FORK	S102813569	ACK'S PASADENA AUTO	33394 ROAD 233	93643	HAZNET
NORTH FORK	U001589660	MADERA COUNTY ROAD YARD #5	ROAD 200	93643	HIST UST
NORTH FORK	S105548820	J W TIRE CUTTER	ROAD 225 AT ROAD 230	93643	SWF/LF
OAKHURST	A100175961	BATTERSON WORK CENTER	43060 HWY. 41	93643	AST

# ***APPENDIX D***

---

## ***PROPERTY OWNER QUESTIONNAIRE***



## NORTH FORK RANCHERIA

Tribal Office  
P. O. Box 929  
North Fork, CA 93643

Telephone: (559) 877-2461  
Fax: (559) 877-2467  
mers@netptc.net

May 23, 2005

Mr. Pete Connelly  
AES Services  
2021 "N" Street, Suite 200  
Sacramento, CA 95814

Dear Pete:

I am enclosing the requested questionnaire, which was completed by a council member whose knowledge of the Rancheria and its history is far superior to mine. Have you had any responses from the others to whom you sent questionnaires? There has been little time in the last week, and no one from Tribal Council available to call the folks on the Rancheria, to prod their answers. This week promises to be much the same. All the same, let me know what's needed, and I'll do what I can to help.

Sincerely,

Michel DeMers  
Tribal Administrator

Question	Answer	Responses to "Yes" Questions
1. Is the property or any adjoining property currently used for industrial purposes?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
2. To the best of your knowledge, has the property or any adjoining property been used for industrial purposes in the past?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
3. Is the property or any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
4. To the best of your knowledge, has the property or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
5. Has fill dirt been brought onto the property that originated from a contaminated site or that is of an unknown origin?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	



<p>6. Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than five gallons (19 liters) in the aggregate, stored on or used at the property or at the facility?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>7. Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gallon [208 liters]) or sacks of chemicals located on the property or at the facility?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>8. Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>9. Is there currently, or to the best of your knowledge has there been previously, any areas of stained soil on the property?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	

<p>10. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>11. Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>12. Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?</p>	<p>New?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES  Past?: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	
<p>13. If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environment/health agency?</p>	<p><input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES</p>	

<p>14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?</p>	<p>NO <u>UNK</u> YES</p>	
<p>15. Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?</p>	<p>NO <u>UNK</u> YES</p>	
<p>16. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?</p>	<p>NO <u>UNK</u> YES</p>	

17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?	NO <input checked="" type="radio"/> UNK <input type="radio"/> YES	
18. Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?	NO <input checked="" type="radio"/> UNK <input type="radio"/> YES	
19. To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried, and/or burned on the property?	NO <input checked="" type="radio"/> UNK <input type="radio"/> YES	
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	NO <input checked="" type="radio"/> UNK <input type="radio"/> YES	

21. How do you currently use the property and how have you used the property in the past (please be specific).

N/A

22. What is your understanding of how the property was used before your ownership/occupancy?

N/A

Completed by: PATRICK A. BELHAN

Phone: 559-877-6243

Date completed: 5-16-05

Relation to property: ☐ owner ☐ operator ☐ manager ☐ tenant

N/A



*ANALYTICAL ENVIRONMENTAL SERVICES*

April 29, 2005

Ms. Juanita Williams  
PO Box 120  
North Fork, CA 93643

**RE: North Fork Rancheria  
Phase I Environmental Site Assessment**

Dear Ms. Williams:

We will appreciate your assistance in completing the enclosed questionnaire regarding the North Fork Trust Parcel. We need this information and your insight to assist in the preparation of an environmental site assessment for this property.

Please provide as much information as you can and feel free to attach extra sheets/reports if the space provided is insufficient. A self-addressed stamped envelope is included for you to return the completed form.

Thank you for your help and cooperation.

Sincerely,

Pete Connelly  
Associate



Question	Answer	Responses to "Yes" Questions
1. Is the property or any adjoining property currently used for industrial purposes?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
2. To the best of your knowledge, has the property or any adjoining property been used for industrial purposes in the past?	Property: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES Adjoining: <input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	
3. Is the property or any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: <input type="radio"/> NO <input type="radio"/> UNK <input checked="" type="radio"/> YES Adjoining: <input type="radio"/> NO <input checked="" type="radio"/> UNK <input type="radio"/> YES	<i>He believe a gas tank was present at Alvin's home. Plus Alvin used portions of the property as a dump. Its uncertain if he dumped chemicals.</i>
4. To the best of your knowledge, has the property or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Property: <input type="radio"/> NO <input type="radio"/> UNK <input checked="" type="radio"/> YES Adjoining: <input type="radio"/> NO <input checked="" type="radio"/> UNK <input type="radio"/> YES	<i>In the past, yes.</i>
5. Has fill dirt been brought onto the property that originated from a contaminated site or that is of an unknown origin?	<input checked="" type="radio"/> NO <input type="radio"/> UNK <input type="radio"/> YES	

<p>6. Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than five gallons (19 liters) in the aggregate, stored on or used at the property or at the facility?</p>	<p>New?: NO <u>UNK</u> YES  Past?: NO <u>UNK</u> YES</p>	<p><i>site still present.</i></p>
<p>7. Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gallon [208 liters]) or sacks of chemicals located on the property or at the facility?</p>	<p>New?: NO <u>UNK</u> YES  Past?: NO <u>UNK</u> YES</p>	
<p>8. Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?</p>	<p>New?: NO <u>UNK</u> YES  Past?: NO <u>UNK</u> YES</p>	
<p>9. Is there currently, or to the best of your knowledge has there been previously, any areas of stained soil on the property?</p>	<p>New?: NO <u>UNK</u> YES  Past?: NO <u>UNK</u> YES</p>	

<p>10. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property?</p>	<p>New?: NO UNK <u>YES</u>  Past?: NO UNK <u>YES</u></p>	<p><i>Alvinda home.</i></p>
<p>11. Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?</p>	<p>New?: NO UNK <u>YES</u>  Past?: NO UNK <u>YES</u></p>	
<p>12. Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?</p>	<p>New?: NO UNK <u>YES</u>  Past?: NO UNK <u>YES</u></p>	
<p>13. If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environment/health agency?</p>	<p>NO <u>UNK</u> YES</p>	<p><i>Juanita has poor water quality. It's oily and unpleasant. (Has not been designated as contaminated.)</i></p>

<p>14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?</p>	<p><del>NO</del> <u>UNK</u> YES</p>	
<p>15. Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?</p>	<p><del>NO</del> <u>UNK</u> YES</p>	
<p>16. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?</p>	<p><del>NO</del> <u>UNK</u> YES</p>	

<p>17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?</p>	<p>NO <u>UNK</u> YES</p>	
<p>18. Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?</p>	<p>NO <u>UNK</u> YES</p>	
<p>19. To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried, and/or burned on the property?</p>	<p>NO <u>UNK</u> YES</p>	
<p>20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?</p>	<p>NO <u>UNK</u> YES</p>	

21. How do you currently use the property and how have you used the property in the past (please be specific).

My property ~~was~~ brushed in the past and needs to be brushed again to reduce fire hazards in the area. Cultural use is on-going.

22. What is your understanding of how the property was used before your ownership/occupancy?

My grandparents continuously used the entire property - it was farmed & spiritually used and culturally used. Cattle was present for a short time.

Completed by: Delores Roberts

Phone: 559-877-6225

Date completed: 5-24-05

Relation to property: ☒ owner ☐ operator ☐ manager ☐ tenant



# ***APPENDIX E***

---

***LAB REPORT FOR WATER QUALITY***

Tribal Office  
P.O. Box 929  
North Fork, CA 93643

**North Fork Rancheria**  
**Environmental Protection Department**

# Fax

**To:** Peter Connelly

**From:** Mary Adelzadeh

**Fax:** 916-447-1665

**Pages:** 5 (including cover)

**Phone:** 916-447-3479

**Date:** 8/26/05

**Re:** Water Testing Results

**CC:**

☐ **Urgent**    ☒ **For Review**    ☐ **Please Comment**    ☐ **Please Reply**    ☐ **Please Recycle**

Attached are the water quality test results for samples taken at Juanita Williams house on 2/3/04 and 5/20/98. Please call me if you have any questions.

**FRESNO COUNTY PUBLIC HEALTH LABORATORY**1221 Fulton Mall, Fresno CA 93721 P.O. Box 11867 Fresno, CA 93775  
Phone: (559)445-3407 Alt. Phone: (559)445-3397 Fax: (559)445-3580  
ELAP Certification Number: 1888 James J. Spotsdoff, Laboratory Director0402-01218  
Lab NumberT1357  
Account #2/3/2004  
Date Received2/3/2004  
Date Collected11:00 AM  
Time CollectedB. Johnson  
Collector/InspectorIndian Health Service  
1551 E. Shaw Ave. Suite 17B  
Fresno, CA 93710  
Attn: Russ Sowers

SystemType: 02

Sample Type: Routine

Water Sys #:

Census Tract:

Well Number:

APN:

Sample Site: Kitchen Faucet

**GENERAL MINERAL, PHYSICAL & INORGANIC CHEMISTRY ANALYSES**

Analysis	Storet #	Result	Flag	MCL	DLR	Chemist	Date Analyzed
Calcium	00916	52 mg/L			2 mg/L	K. Lor, PHC	2/10/2004
Copper	01042	<50 µg/L		1300 µg/L	50 µg/L	E. Lennon, PHC	2/18/2004
Iron	01045	<100 µg/L		300 µg/L	100 µg/L	K. Lor, PHC	2/9/2004
Magnesium	00927	5 mg/L			2 mg/L	K. Lor, PHC	2/11/2004
Manganese	01055	32 µg/L		50 µg/L	20 µg/L	E. Lennon, PHC	2/18/2004
Potassium	00937	4 mg/L			1.0 mg/L	K. Lor, PHC	2/9/2004
Sodium	00929	15 mg/L			2 mg/L	K. Lor, PHC	2/11/2004
Zinc	01082	380 µg/L		5000 µg/L	50 µg/L	E. Lennon, PHC	2/18/2004

ORIGINAL FORM 89 (7-00)

**FAX TRANSMITTAL**

# of pages &gt; 1

To <b>Jimmy White</b>	From <b>PFO</b>
Repl./Agency <b>REE</b>	Phone #
Fax #	Fax #
<b>Whita Williams well, North Fork</b>	

NSW 9549-01-317-7386 0090-101 GENERAL SERVICES ADMINISTRATION

MCL = Maximum Contaminant Level  
DLR = Detection Level for Reporting  
QNS = Quantity Not Sufficient for Analysis  
NTP = No Test Performed on Sample  
Flag = "High" if Result Exceeds MCL

*L. Lennon*  
Director / Chemistry Supervisor / QA Officer

Date Reported: 2/27/2004

**FRESNO COUNTY PUBLIC HEALTH LABORATORY**

1221 Fulton Mall, Fresno CA 93721 P.O. Box 11867 Fresno, CA 93775

Phone: (559)445-3407 Alt. Phone: (559)445-3397 FAX: (559)445-3580

State of California Laboratory Accreditation Program Certification Number 1888

0402-01218  
Lab Number2/3/2004  
Date Received2/3/2004  
Date Collected11:00 AM  
Time CollectedB. Johnson  
Collector/InspectorIndian Health Service  
1551 E. Shaw Ave. Suite 17B  
Fresno, CA 93710

Attn: Russ Sowers

Account # T1357  
Test Code J1  
SysType/Reg 02  
Sample Type 01  
Water Sys #  
Census Tract  
Well Number  
APN

Sample Site: Kitchen Faucet

(Juanita Williams)

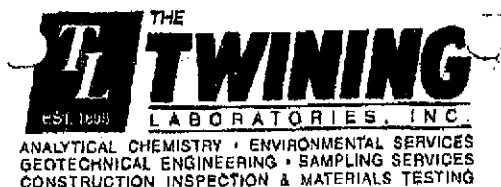
**WATER BACTERIOLOGICAL RESULTS**The water sample submitted for bacteriological testing was ABSENT for total coliforms.  
The MPN Index per 100 ml of sample was <1.1 for total coliforms.Analyst: C. Hays

Date Reported: 2/5/2004

AUG-25-2005 THU 03:53 PM IHS/CAO/OEHE

FAX NO. 916 930 3954

P. 04



REPORT DATE : May 29, 1998  
LABORATORY ID : 698-2844.2

PAGE 2 of 4

DATE SAMPLED : 05-20-98 at 1120 by Matthew Williams  
DATE RECEIVED : 05-20-98 at 1150 from Matthew Williams

CLIENT : Indian Health Service

ANALYZED BY : G. Barrett, P. Macias, B. Nicholson, Y. Lee, N. Tyler  
REVIEWED BY : A. Iknoian

DATE PREPARED : 05-20-98 through 05-28-98  
DATE ANALYZED : 05-20-98 through 05-28-98

SAMPLE TYPE: Drinking Water

CLIENT SAMPLE ID : Wil JUANITA WILLIAMS

GENERAL MINERAL	RESULTS	UNITS	DLR	METHOD
Hardness	110	mg/L	2	200.7
Calcium (Ca)	37	mg/L	0.5	200.7
Magnesium (Mg)	4.5	mg/L	0.1	200.7
Sodium (Na)	13	mg/L	1	200.7
Potassium (K)	3.5	mg/L	1	200.7
Copper (Cu)	ND	ug/L	50	200.7
Iron (Fe)	920	ug/L	100	200.7
Manganese (Mn)	250	ug/L	30	200.7
Zinc (Zn)	3000	ug/L	50	200.7
Langlier Index (SI) @ 20°C	-1.2	SI	---	SM2330B
Alkalinity	140	mg/L	1	SM2320B
Hydroxide (OH)	ND	mg/L	1	SM2320B
Carbonate (CO <sub>3</sub> )	ND	mg/L	1	SM2320B
Bicarb. (HCO <sub>3</sub> )	170	mg/L	1	SM2320B
MBAS	ND	mg/L	0.05	SM5540C
Chloride (Cl)	5.0	mg/L	2	300.0
Sulfate (SO <sub>4</sub> )	3.4	mg/L	2	300.0
pH	6.5	pH	N/A	150.1
EC	280	uS/cm	1	SM2510
TDS	200	mg/L	10	SM2540

mg/L : milligrams per Liter (parts per million)  
ug/L : micrograms per Liter (parts per billion)  
MBAS : Methylene Blue Active Substances

SI: Standard Methods, 18th Edition  
ND: None Detected uS/cm: micro Siemens per Centimeter @ 25°C  
N/A: Not Applicable

SI: Saturation Index  
DLR: Detection Limit for Reporting purposes  
Rev. 6 2/97 (DOCDRIGENMIN)

<b>CORPORATE OFFICE</b> 2527 Fresno Street Fresno, CA 93721 (209) 268-7021 • Fax 268-7126	<b>MODESTO</b> 4230 Kiernan Ave., #105 Modesto, CA 95256 (209) 545-1050 • Fax 545-1147	<b>VISALIA</b> 130 North Kelsey St., #H8 Visalia, CA 93291 (209) 651-8280 • Fax 651-8288	<b>BAKERSFIELD</b> 3701 Pegasus Drive, #124 Bakersfield, CA 93308 (805) 393-6066 • Fax 393-4643	<b>SALINAS</b> 520 #A Crazy Horse Canyon Rd. Salinas, CA 93907 (408) 449-5264 • Fax 449-5082
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ANALYTICAL CHEMISTRY • ENVIRONMENTAL SERVICES  
GEOTECHNICAL ENGINEERING • SAMPLING SERVICES  
CONSTRUCTION INSPECTION & MATERIALS TESTING



REPORT DATE : May 29, 1998  
LABORATORY ID : 698-2844.2

PAGE 4 of 4

DATE SAMPLED : 05-20-98 at 1120 by Matthew Williams  
DATE RECEIVED : 05-20-98 at 1150 from Matthew Williams

CLIENT : Indian Health Services

ANALYZED BY : G. Barrett, P. Macias, E. Abalos, N. Tyler, B. Nicholson  
REVIEWED BY : A. Iknolan

DATE PREPARED : 05-21-98 through 05-28-98  
DATE ANALYZED : 05-21-98 through 05-28-98

SAMPLE TYPE: Drinking Water

CLIENT SAMPLE ID : Wil JUANITA WILLIAMS

INORGANIC CHEMICAL	RESULT	UNITS	DLR	METHOD
Aluminum (Al)	150	ug/L	50	200.7
Arsenic (As)	ND	ug/L	2	SM3113
Barium (Ba)	ND	ug/L	100	200.7
Cadmium (Cd)	ND	ug/L	1	200.7
Chromium (Cr)	ND	ug/L	10	200.7
Lead (Pb)	57	ug/L	5	SM3113
Mercury (Hg)	ND	ug/L	1	245.1
Selenium (Se)	ND	ug/L	5	SM3113
Silver (Ag)	ND	ug/L	10	200.7
Nitrate (NO <sub>3</sub> )	ND	mg/L	2	300.0
Fluoride (F)	0.28	mg/L	0.2	300.0
Nitrate + Nitrite-N	ND	ug/L	400	300.0
Nitrite-Nitrogen	ND	ug/L	400	300.0
Beryllium (Be)	ND	ug/L	1	200.7
Thallium (Tl)	ND	ug/L	1	SM3113
Nickel (Ni)	ND	ug/L	10	200.7
Antimony (Sb)	ND	ug/L	6	SM3113
Cyanide (CN)	ND	ug/L	100	SM4500CN-E
GENERAL PHYSICAL	RESULT	UNITS	DLR	METHOD
Color	15	Unit	1	SM2120B
Odor	1.4	TON	NDO	SM2150B
Turbidity	4.4	NTU	0.01	180.1

mg/L: milligrams per liter (parts per million) NTU: Nephelometric Turbidity Unit  
ug/L: micrograms per liter (parts per billion) TON: Threshold Odor Number NDO: No Detectable Odor  
SM: Standard Methods, 18th Edition

Rev. 4 9/96 (INORGANIC)

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# **APPENDIX Q**

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## *NRCS Consultation*

## U.S. Department of Agriculture

## FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>		Date Of Land Evaluation Request 9/27/05			
Name Of Project North Fork Rancheria Casino and Hotel Project		Federal Agency Involved Bureau of Indian Affairs			
Proposed Land Use Casino and Hotel		County And State Madera County, California			
<b>PART II (To be completed by NRCS)</b>		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s) VINE/TREES/OPEN	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined In FPPA Acres: %		Date Land Evaluation Returned By NRCS 10/25/05	
Name Of Land Evaluation System Used PRIME & UNIQUE SOILS LIST	Name Of Local Site Assessment System NONE				
<b>PART III (To be completed by Federal Agency)</b>		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		55.8	5.3		
B. Total Acres To Be Converted Indirectly		249.2	25.3		
C. Total Acres In Site		305.0	30.7	0.0	0.0
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>					
A. Total Acres Prime And Unique Farmland		45.8	0		
B. Total Acres Statewide And Local Important Farmland		18.6	0		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value					
<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>					
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		0 69	0	0	0
<b>PART VI (To be completed by Federal Agency)</b>					
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use	15	14			
2. Perimeter In Nonurban Use	10	9			
3. Percent Of Site Being Farmed	20	20			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	0			
6. Distance To Urban Support Services	15	10			
7. Size Of Present Farm Unit Compared To Average	10	6			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	10			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	74	0	0	0
<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)		100	69	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	74	0	0
TOTAL POINTS (Total of above 2 lines)		260	143	0	0
Site Selected:		Date Of Selection		Was A Local Site Assessment Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Reason For Selection:					

# ***APPENDIX R***

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## *Socioeconomic Assessment*

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# **Socioeconomic Assessment:**

Madera, California

Prepared for:  
**North Fork Rancheria Casino Resort**

**September 2008**

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Prepared by:



**THE INNOVATION GROUP**  
400 N. Peters St., Suite 206  
New Orleans, LA 70130

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# Section 1: Introduction

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The North Fork Rancheria of Mono Indians is proposing to build a casino and hotel development in Madera County, California. The Tribe has hired Station Casinos as its management company. As part of the Final Environmental Impact Statement for the development, The Innovation Group has been asked to prepare an update to the socioeconomic assessment originally prepared in October 2005 for the Draft EIS. This report examines the socioeconomic impacts of the proposed location and development program as well as three other alternative development programs.

The four alternatives include the proposed alternative (Alternative A) which provides for a hotel, casino and retail development along I-99 just north of the City of Madera. Alternative B is a smaller casino development (no hotel) on the same site. Alternative C allows for a retail development on the proposed site, rather than the development of the casino. Alternative D calls for a considerably smaller casino development in a different location in Madera County.

This report projects the social and economic impacts to be experienced by Madera County should one of the alternatives be developed. These impacts are measured in terms of both increased costs and increased revenue for the County. To produce this document, interviews were conducted with the head of each of the affected County departments.

In addition to measuring the impacts to Madera County, this report also examines the impacts of the development on one of the incorporated areas within the County: the City of Madera. As the larger incorporated area in the County and closer to the location of Alternative A, B and C, it is projected that some portion of new residents moving into the County to seek employment with the Casino will move into the City of Madera. For these reasons, a section has been included to measure the impact to the City.

This report incorporates the following updated information into its analysis:

- Annual County and City budget information
- Cost of government services
- Labor costs
- Construction costs
- Housing market
- Sales and use tax rates
- The location of new residents within the County and City
- Problem gambling prevalence rates

Since the completion of the last socioeconomic assessment, several agreements have been made which are considered in this update. These include the Tribe's Compact with the State of California, an MOU with the City of Madera, an MOU with the Madera Irrigation District, and agreements with labor unions with respect to construction and hotel employees.

This report is divided into 10 main sections. The first is the introduction and the second provides the most recent economic and demographic data on Madera County. This information assisted in our understanding of the dynamics of Madera County. The third section provides an assessment of Alternative A. The fourth, fifth and sixth sections review the impacts of Alternatives B, C and D, respectively. In the seventh section, we review the areas of the County that are likely to experience new development. In the eighth, we estimate the impacts to the City and in the ninth, the impacts to the State. In the final, section we draw conclusions.

## Section 2: Economic and Demographic Data

The following section provides an overview of the economic and demographic characteristics of Madera County.

### 2.1 Population

According to Claritas estimates and projections released in August of 2007, the population growth rate in Madera County is greater than that of both California and the United States. The City of Madera is growing even faster than the County average. Historically, the County has experienced growth due to the number of Bay Area residents moving into the area seeking less expensive housing options.

Table 2.1  
Population Data

Location	2000 Population	2007 Population Estimate	2012 Population Projection	Average Annual Growth
City of Madera	43,207	54,195	61,732	3.0%
City of Chowchilla	11,127	13,254	14,680	2.3%
Madera County	123,109	147,778	165,061	2.5%
California	33,871,648	33,871,648	37,075,982	1.3%
United States	281,421,906	281,421,906	301,045,522	0.9%

Source: iXPRESS, Claritas, Inc.

The above population projections for 2012 do not take into account the recent economic downturn which has resulted in a slowing of population growth for both the City and the County. Population estimates from the California Department of Finance show lower annual growth for the City and County in the range of 2.0% to 2.2% from January 2007 to January 2008.

Table 2.2  
City/County Population Estimates

County/City	Total Population		Percent Change
	1/1/2007	1/1/2008	
City of Madera	55,475	56,710	2.2%
Madera County	147,944	150,887	2.0%

Source: California Department of Finance Demographic Research

City officials believe population growth will increase again in the next cycle of economic activity. The City has a long-range estimation of 100,000 city residents by 2025.

## 2.2 Income

The average annual household income in Madera County is lower than the averages of California and the United States, though its average annual growth rate of 2.8% is faster than that of the state and country. The City of Madera has average annual household incomes significantly lower than the County, which is growing at a slightly slower average rate of 2.6% annually. There are two main reasons for a lower average income level in Madera. Much of the labor force is unskilled. Secondly, much of the work in Madera County is agricultural and therefore is seasonal.

**Table 2.3**  
**Average Annual Household Income**

	2000 Census	2007 Estimate	2012 Projection	Average Annual Growth
City of Madera	\$41,425	\$49,409	\$56,100	2.6%
Madera County	\$48,050	\$58,576	\$66,723	2.8%
California	\$65,628	\$76,956	\$85,077	2.2%
United States	\$56,644	\$66,670	\$73,741	2.2%

Source: iXPRESS, Claritas, Inc.

Effective buying income denotes disposable income or income after taxes. The Madera County population's effective buying income is also lower than the state or national averages, but growing at a faster rate. City of Madera effective buying income, while lower than other areas, is expected to experience a higher growth rate than the state or country.

**Table 2.4**  
**Effective Buying Income**

	2007 Estimate	2012 Projection	Average Annual Growth
City of Madera	\$40,571	\$45,530	2.3%
Madera County	\$47,297	\$53,353	2.4%
California	\$61,318	\$67,484	1.9%
United States	\$53,727	\$59,186	2.0%

Source: iXPRESS, Claritas, Inc.

## 2.3 Employment Data

Madera County had approximately 64,400 people in its labor force in 2007, approximately 44% of the population. Of the 64,400-person labor force, 7.6% was unemployed in 2007. Since 2005 the unemployment rate has remained below 8%, but in previous years, unemployment was higher. Local officials attribute much of reduction in unemployment to the introduction of jobs at Chukchansi Casino which opened in June 2003. From 2002 to 2004, the number of employed persons in Madera County increased by 6,100. The casino had 1,400 positions when it opened and by 2005 had approximately 1,600 employees. After the casino opened, unemployment dropped by nearly 3 percentage points.

In comparison, the unemployment rate for the State of California in 2007 was 5.4%. The same figure for the US was 4.6% in 2007 according to Bureau of Labor Statistics.

**Table 2.5**  
**Madera County Labor Force Data**

	2002	2003	2004	2005	2006	2007	Average Annual Growth
<b>Labor Force</b>	55,800	59,500	61,700	62,600	63,800	64,400	2.9%
<b>Employment</b>	49,900	53,300	56,000	57,600	59,300	59,500	3.6%
<b>Unemployment</b>	5,900	6,200	5,700	5,000	4,500	4,900	-3.6%
<b>Unemployment Rate (%)</b>	10.6	10.3	9.2	7.9	7.0	7.6	-6.4%

Source: California Employment Development Department, [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov).

\*All Data has been adjusted to 2007 benchmarks..

The unemployment rate for the County is not steady throughout the year. In fact, because one of the main industries in the County is agriculture, the unemployment rate is extremely dynamic over the course of the year. For example, in September 2007, the unemployment rate was only 6.3%, but by December unemployment was as high as 8.8%.

**Table 2.6**  
**2007 Unemployment Data for Madera County**

Month	Labor Force	Employed	Unemployed	Unemployment Rate
January	64,700	59,500	5,200	8.1%
February	63,000	57,600	5,400	8.5%
March	61,500	56,300	5,200	8.5%
April	63,100	57,900	5,200	8.2%
May	64,500	59,900	4,600	7.1%
June	65,900	61,300	4,600	7.0%
July	65,000	60,100	4,900	7.5%
August	65,600	61,200	4,400	6.7%
September	66,600	62,400	4,200	6.3%
October	64,300	59,900	4,400	6.9%
November	64,000	58,900	5,100	7.9%
December	65,000	59,300	5,700	8.8%
Annual	64,400	59,500	4,900	7.6%

Source: California Employment Development Department, [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov).



The following chart details the growth in employment by sector of the economy. At present, the production growth area is in durable goods manufacturing. Service growth areas include transportation, warehousing and utilities, and educational services. Growth in the arts, entertainment and recreational services sector has been flat. The accommodation and food services sector is growing by 2.2% annually.

**Table 2.7**  
**Employment by Sector for Madera County**

Industry Title	2004	2005	2006	2007	Average Annual Growth
Total Nonfarm	33,300	33,500	34,900	35,000	1.3%
Total Private	23,700	23,600	24,700	24,400	0.7%
Goods Producing	5,800	5,900	6,200	5,700	-0.4%
Natural Resources, Mining & Construction	2,600	2,700	2,900	2,400	-2.0%
Manufacturing	3,300	3,200	3,300	3,300	0.0%
Durable Goods	1,900	2,000	2,100	2,100	2.5%
Nondurable Goods	1,400	1,200	1,200	1,200	-3.8%
Service Providing	27,500	27,600	28,700	29,300	1.6%
Trade, Transportation and Utilities	5,000	5,100	5,400	5,300	1.5%
Wholesale Trade	700	700	700	600	-3.8%
Retail Trade	3,500	3,500	3,800	3,800	2.1%
Food and Beverage Stores	1,000	1,000	1,000	1,000	0.0%
Miscellaneous Store Retailers	2,500	2,600	2,800	2,800	2.9%
Transportation, Warehousing and Utilities	800	800	900	1,000	5.7%
Information	600	600	500	500	-4.5%
Financial Activities	800	800	900	800	0.0%
Professional and Business Services	2,700	2,300	2,500	2,900	1.8%
Educational and Health Services	5,500	5,600	5,800	5,700	0.9%
Educational Services	100	100	100	200	18.9%
Health Care and Social Assistance	5,400	5,500	5,600	5,500	0.5%
Health Care	4,700	4,900	5,000	4,900	1.0%
Social Assistance	700	600	700	600	-3.8%
Leisure and Hospitality	2,500	2,500	2,600	2,700	1.9%
Arts, Entertainment, and Recreation	300	300	300	300	0.0%
Accommodation and Food Service	2,200	2,200	2,300	2,400	2.2%
Other Services	800	900	800	800	0.0%
Government	9,700	9,900	10,200	10,500	2.0%
Federal Government	300	400	500	500	13.6%
State and Local Government	9,300	9,500	9,800	10,100	2.1%
State Government	2,100	2,200	2,300	2,400	3.4%
Local Government	7,300	7,300	7,500	7,700	1.3%
Local Government Education	4,000	4,000	4,000	4,200	1.2%
County	1,300	1,400	1,500	1,400	1.9%
City	400	400	400	400	0.0%
Other Local Government	1,600	1,600	1,600	1,700	1.5%

Source: California Employment Development Department, [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov).

Note: Sum of detail may not equal totals due to rounding or the exclusion of certain industries from publication.

## 2.4 Retail Sales

Retail sales from 2005 show a 16.5% increase over 2004. Strong growth was also experienced in 2003 and 2004. There was a decline in retail sales in 2001 of 2%. Average annual growth in retail sales between 2000 and 2005 was 8.3%.

**Table 2.8**  
**Retail Sales in Madera County**

<b>Year</b>	<b>Retail Sales</b>	<b>Percent Change</b>
2000	\$880,970,000	6.3%
2001	\$863,708,000	-2.0%
2002	\$916,103,000	6.1%
2003	\$1,007,261,000	10.0%
2004	\$1,125,134,000	11.7%
2005	\$1,311,282,000	16.5%

Source: California Employment Development Department,  
[www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov).

## Section 3: Alternative A -- Proposed

---

This scenario addresses the economic costs and benefits associated with developing a casino resort in Madera County. We assume the facility to be appropriately sized to maximize the potential of its gaming, lodging and retail functions. The casino is proposed to be a 500,000 square foot development. The development would include a 200-room hotel with 6,000-square-foot spa, retail space and banquet/meeting facilities. Food and beverage services would be provided through a 500-seat buffet, two sit-down restaurants, a five-tenant food court, coffee shop and two bars. Finally, the facility would have 4,500 parking spaces of which 2,000 would be in a parking structure.

**Table 3.1**  
**Building Program**

Element	Square Footage
Casino	171,630
Retail	1,185
Food and Beverage	67,365
Entertainment	7,000
Hotel	207,680
Spa	16,850
Central Plant	21,300
Total	493,010

Source: Station Casinos.

The development would be located on a 305-acre site just north of the City of Madera in Madera County. It would be situated adjacent to State Route 99 and specifically bounded by Avenue 18, Golden State Boulevard and Road 23.

### 3.1 Development Impact on Population

The casino's effects on employment will come in both the construction and operational phases. The impacts of construction are only felt for the duration of construction spending so they are necessarily temporary. The operational effects are felt as long as the casino is in operation.

The effects are measured in three ways: direct employment, indirect employment and induced employment. Direct employment includes those employees who are directly employed at the facility either during construction or operation. Examples of direct employees would be construction foremen, blackjack dealers and casino managers.

Indirect employment includes those employees who provide services to the casino but are not directly employed by the casino. They are employed at least in part due to the casino but the casino does not cut their paychecks. These employees include the baker who provides bread to the casino restaurant or the wholesaler who provides doors for the facility. Generally, these jobs are categorized as those created from casino spending.

The third category is induced employment. This category includes all the other jobs that are created due to the ripple effect of all of this spending throughout the economy as a whole. Examples include the hair dresser who cuts the hair of an employee or the investment advisor who maintains a construction worker's individual portfolio. Generally, these jobs are categorized as those that are created through direct and indirect casino employment spending.

In order to measure these impacts, we used the Regional Input-Output Modeling System (RIMS II) produced by the Bureau of Economic Analysis, US Department of Commerce. When provided changes in output in a sector or sectors of the economy, the model estimates the direct, indirect and induced changes in the economy's output, employment and earnings. In other words, RIMS II takes changes in construction output (spending) and calculates the direct, indirect and induced impacts for the study area. In this study, Madera County is the study area.

For the operational employment impacts, we again used RIMS II. When provided changes in employment (e.g., increase or decrease in direct employment) in a sector or sectors of the economy, the model estimates the total employment (direct, indirect and induced) to be expected in all sectors.

### **3.1.1 Construction Employment**

As discussed above, construction employment and spending is only temporary, but it can have substantial impacts on the economy. For Alternative A, the estimated construction spending will be almost \$422 million. The following table details the projected spending.

**Table 3.2**

#### **Construction Costs**

Design	\$13,266,000
General Construction	\$285,264,328
Soft Costs	\$94,495,500
Contingency	\$28,929,765
<b>Total Project Cost*</b>	<b>\$421,955,593</b>

Source: Stations Casino, Inc.; The Innovation Group

Note: Soft costs include furniture, fixtures and equipment, financing fees, etc.

\*Costs have been inflated from the 2005 figure to reflect increases in construction costs, labor costs, etc.

Based on the almost \$422 million in spending for construction, RIMS II projects that the project will create 2,441 jobs. Although most of these jobs fall within the construction sector, these jobs are spread out over 21 different segments of the economy.

**Table 3.3**  
**Construction Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	4.66
2. Mining	10.82
3. Utilities	1.14
4. Construction	1,205.58
5. Manufacturing	77.80
6. Wholesale Trade	27.41
7. Retail Trade	226.58
8. Transportation & Warehousing	36.82
9. Information	19.00
10. Finance & Insurance	115.94
11. Real Estate & Rental & Leasing	44.66
12. Professional, Scientific, & Technical Services	176.21
13. Management of Companies & Enterprises	30.48
14. Administrative & Waste Management Services	41.38
15. Educational Services	6.58
16. Health Care & Social Assistance	82.72
17. Arts, Entertainment, & Recreation	9.10
18. Accommodation & Food Services	261.45
19. Other Services	47.73
20. Households	15.45
21. Total Employment	2,441

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **3.1.2 Operational Employment**

Operational employment includes those jobs that are generated from the operation of the casino. These impacts will last as long as the casino is in operation.

#### **Direct Employment**

Direct employment includes all positions at the casino and hotel. Station Casinos anticipates that the facility will employ 1,291 full-time employees and 283 part-time employees or 1,461 full-time equivalents (FTEs).

#### **Indirect and Induced Employment**

Indirect employment includes those jobs which provide support services to the casino but are not directly paid by the casino. Induced employment calculates the impacts of these direct and indirect jobs on the rest of the economy as spending by direct and indirect employees ripples through the economy. RIMS II projects that if the Alternative A development opens it will have the effect of creating 2,319 jobs in Madera County. Of those, 1,461 are the direct employees discussed above and 858 are indirect and induced jobs.

**Table 3.4**  
**Operational Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	4.06
2. Mining	0.23
3. Utilities	0.88
4. Construction	8.21
5. Manufacturing	23.30
6. Wholesale Trade	12.03
7. Retail Trade	88.23
8. Transportation & Warehousing	14.74
9. Information	11.69
10. Finance & Insurance	8.21
11. Real Estate & Rental & Leasing	19.34
12. Professional, Scientific, & Technical Services	9.96
13. Management of Companies & Enterprises	20.75
14. Administrative & Waste Management Services	18.14
15. Educational Services	3.89
16. Health Care & Social Assistance	48.65
17. Arts, Entertainment, & Recreation	1,316.82
18. Accommodation & Food Services	665.26
19. Other Services	35.11
20. Households	9.13
21. Total Employment	2,319

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **3.1.3 Population**

Given that the casino is projected to increase employment in Madera County by 2,441 temporary positions and 2,319 permanent positions, it is necessary to see how that increase in employed persons will affect the population as a whole. Increases in population create demand for County services which will affect the County's budget.

Currently, the population in Madera County is estimated to be 147,800 with a 2007 average unemployed population of 4,900 (see Economic and Demographic Data section above). With such a large unemployed population, the influx of new jobs to the area will alleviate some of the unemployment problem.

In order to determine the effects employment opportunities at the casino will have on the population, certain assumptions must be made. These assumptions are discussed below.

### **Construction Employment Impact**

It is not expected that the 2,441 temporary construction jobs will result in an increase in local population. Of the 1,206 construction jobs to be created, it is believed that those jobs that can be filled locally will be and those that cannot will be filled by individuals who will travel for the work as opposed to relocating. Typically, construction workers travel for employment



opportunities during the week and then return home on the weekends. We expect the same to be true in this instance.

As for the 1,235 non-construction sector jobs, these positions are temporary as well. They are created by construction spending so that once construction is completed these positions will disappear. We project that many of these positions will be filled by already employed workers who are working overtime or are managing more than their current workload.

For these reasons, we do not expect that the population will show any impacts from the influx of temporary construction spending.

## **Operations Employment Impact**

The 2,319 permanent jobs are expected to result in increases in local population. It is believed that some portion of these jobs will be filled by individuals who will move into Madera County for employment. In order to project what percentage of people will move into the County, it must be determined what percentage of individuals who work at the casino will live in Madera County.

### *Direct Employees*

Under the Memorandum of Understanding between Station Casinos and Madera County, the casino has agreed to make a good faith effort to ensure that 50% of its employees live in Madera County. The Chukchansi Casino, also in Madera County, had the same requirement when it opened in June 2003. The Chukchansi were able to meet this goal and, in fact, exceeded it. Of the approximately 1,600 employees at Chukchansi (in 2005), 65% live in Madera County.

Given the still large number of unemployed in Madera County and the experience at Chukchansi, it is believed that Station Casinos will have no problem meeting the 50% goal and the project will wind up with 65% of its employees being Madera County residents. Given this assumption, 950 of the 1,461 employees will be residents of Madera County.

It should be noted that the opening of the North Fork casino in Madera would have an impact on revenues, and hence employment, at Chukchansi Casino and Resort. The current number of employees at Chukchansi is unknown, as they may have hired more with their recent expansion, and the total current employment is a fluid number,  $\Sigma$ . The Innovation Group expects that the opening of the North Fork casino in Madera will result in a 15% to 20% reduction of employment at Chukchansi. Therefore some Madera County residents (in the range of  $\Sigma \times 65\% \times 15\%$  to  $\Sigma \times 65\% \times 20\%$ ) would no longer be employed at Chukchansi, but would easily find jobs at the proposed North Fork casino in Madera.

### *Indirect and Induced Employees*

Some of the 858 indirect and induced employees will also potentially move into Madera County. According to US Census data from 2000, 26.5% of Madera County's employees commute from outside the County. That means that 73.5% of the jobs in Madera County are held by residents of the County. Assuming that this commute pattern will hold constant for the new casino employees, 631 of these new positions will be filled by Madera County residents.

### *Employees to Move into Madera County*

Given the large number of unemployed residents in Madera County, we believe that the influx of new residents will be low. Internal reviews conducted by both the Madera Unified School District and the Department of Behavioral Health found no significant impact on these departments by the opening of the Chukchansi Casino in 2003. (Written copies of these analyses were not made available to authors of this report.) Given this experience and the large number of unemployed, we believe the number of people moving into the County for direct, indirect or induced employment opportunities will be low. To be conservative, we have estimated that 20% of the Madera County residents will be new residents although we believe this to be on the high side.

If 20% of the new employees who live in Madera County are new residents of Madera County, then the number of employees that move into the County would be 316. The 316 figure includes 20% of the 950 direct employees expected to live in the County and 20% of the 631 indirect and induced employees expected to live in the County.

**Table 3.5**

<b>Employees Who Move to Madera County</b>	
Direct	190
Indirect and Induced	126
Total	316

### **New Residents**

If 316 new employees move into Madera County, these will not be the only new residents in the County who moved in because of the casino. These employees will in some cases bring families. To account for this, we calculated an employee per household ratio for Madera County. Given the 2007 average labor force of 64,400 and a 2007 household estimate of 42,900, there is a 1.5 ratio of laborers to households. To be conservative in our estimate of casino impacts on the County, we assumed that the ratio of new employees per household was 1.2. Then using 2000 Census data, we calculated the number of persons per household in Madera County. Applying this rate, we projected the number of new residents in Madera County.

**Table 3.6**

<b>New Residents in Madera County</b>	
New Employees Moving to Madera	316
Number of Employees per Household	1.2
Number of New Households	263
Number of Persons per Household	3.18
Number of New Residents	836

Source: U.S. Census.

### **City Versus County Residents**

The table above projects that 836 residents will move into the County of Madera under this Alternative. Some of those residents will live in the unincorporated areas of Madera County while others will live in the Cities of Madera or Chowchilla. In order to measure the impacts of

the development on Madera County and the City of Madera, it is necessary to determine where these new residents will live.

**Table 3.7**  
**City of Madera Population Growth**

	2007 Estimate	2012 Projection	Growth
City of Madera	54,195	61,732	7,537
County of Madera	147,778	165,061	17,283
Percent of Population in City	37%	37%	44%

Source: iXPRESS, Claritas, Inc.

According to the table above, 7,537 of the new 17,283 County residents are projected to move into the County will choose to reside in the City of Madera. In other words, the percentage of new County residents moving into the City is 44%. We would therefore assume that under normal circumstances 44% of the population moving into the County would move into the City of Madera.

But in this instance, we have information that suggests otherwise. Because the development is to be located next to the City of Madera, we project that the development-induced growth will not be typical. Due to the proximity of the development to the City of Madera, we project that a higher percentage of new County residents will move into the City. Conversations with City and County officials revealed estimates ranging from 50% to 75% for new county residents that would reside within the city. We project that 60% of the new residents will move into the City of Madera; therefore, it is projected that 502 of the new residents will live in the City of Madera.

Residents also have the option to live in the City of Chowchilla. According to the table below, 8% of the growth in County population is expected to live in the City of Chowchilla.

**Table 3.8**  
**City of Chowchilla Population Growth**

	2007 Estimate	2012 Projection	Growth
City of Chowchilla	13,254	14,680	1,426
County of Madera	147,778	165,061	17,283
Percent of Population in City	9%	9%	8%

Source: iXPRESS, Claritas, Inc.

We will assume this holds true for the growth projected due to the proposed development. Therefore, it is projected that 67 people will live in the City of Chowchilla. The rest of the population, 268 residents, will live in unincorporated portions of the County of Madera.

## 3.2 Cost of County Government Services

The following section provides information on how the casino and hotel will increase the cost of government service provision in the County. There are two main ways that it will impact government services. The first is through the demand for services that the development itself

will create. The second is through the demand created by the new residents who will move to Madera County in order to work in the casino.

### **3.2.1 Casino Demand**

The following section details the demand for services created by the casino itself. These services include fire, sheriff, emergency management and judicial services as well as road improvements and the need for more social service and mental health professionals.

#### *Fire Protection*

The demand for fire protection services is one of the greatest impacts of the development proposed in Alternative A. Developments such as a casino and hotel that attract large numbers of visitors tend to generate many calls for emergency services. As fire departments act as first respondents to all emergencies, not just fires, the demand for fire protection services increases significantly with a development of this type. According to the *Madera County Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008*, the Coarsegold fire house (#13), which currently responds to the Chukchansi Casino, responded to 345 calls in 2004, 336 in 2005, and 303 in 2006. These calls were not all to the casino but a significant portion were.

The County currently contracts with the California Department of Forestry and Fire Protection (CDF) for fire services. The contract is for the unincorporated areas of the County; the cities of Madera and Chowchilla provide for their own fire protection. CDF currently maintains 16 stations; 45 vehicles including various capacities of fire engines, water tankers, squad units and a ladder truck; 21 career firefighters; 185 paid-call volunteers; and 6.5 full-time equivalent support staff for Madera County.

According to Deputy Chief Stan Craig, the standard goal for a fire department is to be able to respond to any location in its jurisdiction within 4 minutes. Obviously, this may not be possible under all circumstances especially for the residential units found in the remote areas of Madera County. Nonetheless, it is the fire department's goal to achieve this level of service for any new development in the County. Currently, however, there is no fire station that can provide this level of response to the Alternative A casino location. Any development in this area beyond the isolated residential unit would require the building of a fire station and purchase of a new fire truck in order to comply with this level of service goal.

Due to the elevated nature of the hotel building plan, the fire truck to be purchased would need to be an aerial apparatus in order to adequately protect the facility in the event of a fire. The County only owns one aerial apparatus which services the Chukchansi Casino located 36 miles away. The City of Madera has a smaller aerial apparatus, but it is about to be retired due to its restricted capabilities and old age. Neither would provide adequate coverage for the new hotel tower, and therefore the County would need to purchase a second aerial apparatus to provide protection for the facility. In addition to an aerial apparatus, the Deputy Chief recommends a Type I Fire Engine to meet service standards outlined in the new master plan for the department.

Capital costs for a new fire house are estimated to be between \$1.2 and \$2 million. The new aerial apparatus will cost approximately \$1 million while the fire engine is estimated to cost \$500,000.

Table 3.9

**Capital Costs for Fire Prevention**

Fire House	\$1.2-\$2 million
Aerial Apparatus	\$1 million
Type I Fire Engine	\$500,000
Total	\$2.7 - \$3.5 million

Source: Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

A County-wide Master Fire Plan is in the process of being developed and is expected to be completed in late 2008. Early recommendations include increasing staffing levels to meet national standards. These were specified in a comment letter submitted by Fire Chief Mikel Martin on March 28, 2008. For the aerial ladder apparatus, a staffing ratio of 1:1:2 is recommended for captains, engineers, and firefighters. For the Type I Fire Engine, a ratio of 1:1:1 is recommended. The department must hire 3 people to fill one 24-hour position 365 days per year. Therefore, a total of 21 FTEs is recommended.

In addition to full-time staff, a fire house needs volunteers to keep it running. The fire houses in Madera County average 12 volunteers per house. Costs to the County for the volunteers include membership fees in the California State Firemen's Association and equipment.

Table 3.10  
**Fire Personnel Costs**

	Units	Cost per Unit	Total
Fire Captains Salary & Benefits	6	\$121,296	\$727,776
Fire Engineers Salary & Benefits	6	\$104,811	\$628,866
Fire Fighters Salary & Benefits	9	\$104,811	\$943,299
Volunteer Memberships	12	\$71	\$852
Sets of Equipment	33	\$1,400	\$46,200
Total			\$2,346,993

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County. Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

It should be noted that the proposed staffing ratio is a significant increase over that recommended in the previous Socioeconomic Impact Assessment (2005). Therefore costs have increased to a level beyond that supported by the County MOU.

*Sheriff*

The need for law enforcement is also expected to increase when the casino resort opens. The Sheriff's Department currently employs 94 people of which 65 are sworn officers. The Department is responsible for the enforcement of State and County laws and prevention of crime and apprehension of criminals for all of the unincorporated areas of the County.

According to Sheriff John Anderson, the Department responds to 12-15 calls per month at the Chukchansi Casino. The department averages 8 cases per month when the officer actually has to do something once he/she arrives. The types of crime perpetrated include public drunkenness,

petty theft (purse snatching), bad checks, identity theft, credit card fraud and car break-ins. In 2004, the Chukchansi Casino investigated one serious crime where an employee alleged that another employee raped her.

While it is assumed that the same sorts of criminal activity will occur at the North Fork facility as the Chukchansi Casino, it is presumed that the demand for law enforcement services will likely be greater at the proposed casino location. The increase is due to the proximity of the North Fork Casino to an area with much higher population density. The Chukchansi Casino is in an area of very low population for the County. The Chukchansi provide funding for 5 deputy sheriff positions as a result of the demand for services.

In order to combat this criminal activity, Sheriff John Anderson estimates that he will need to hire 5 deputies and ½ sergeants. It takes 5 people to fill one deputy sheriff position 24 hours/day for 365 days/year. The Department keeps a ratio of 1 sergeant for every 10 deputies which requires a ½ sergeant be hired. The following details the cost of adding these individuals to the force.

**Table 3.11**  
**Sheriff Personnel Costs**

	Sergeant (0.5)	Deputy Sheriff (5)	Total
Salary & Benefits	\$78,316	\$61,031	\$344,313
Equipment	\$12,000	\$22,026	\$116,130
Retirement	\$28,264	\$12,000	\$74,132
Health Insurance	\$8,798	\$8,798	\$48,389
Workers' Compensation Insurance	\$8,480	\$8,480	\$46,640
Uniform Allowance	\$900	\$900	\$4,950
<b>Total</b>	<b>\$136,758</b>	<b>\$113,235</b>	<b>\$634,554</b>

Source: Interview with Sheriff John Anderson, Madera County Sheriff's Department, June 2, 2008.

#### *Emergency Medical Services*

While typically there are a significant number of calls for emergency medical services at a casino, emergency medical services or ambulance services are privately provided. The cost for those services is born by the individual who calls for service. According to Monte Pistoresi, owner of Pistoresi Ambulance which provides ambulatory services to Madera County (June 10, 2008 interview), the County has a contract with Pistoresi Ambulance for indigent care which pays the Medi-Cal rates for services. The cost of these calls is included in the Sheriff's budget and not separately outlined here. These costs have been accounted for on a per capita basis in Section 3.2.2 New Resident Demand.

#### *Judicial Services*

As crime increases so will the demands on the judicial system. The judicial system includes the District Attorney who prosecutes the crimes, the Public Defender who defends those accused who are indigent, the court that holds the trials and the grand jury that indicts the accused.



Discussions with the District Attorney in 2005 revealed that the DA's office did not see an increase in caseload with the opening of the Chukchansi Casino, but that they did see some cases that were more complex than most of their cases. Generally speaking, the crimes committed by casino clientele were not any different from their normal cases; they included crimes such as drunk in public, drunk driving and petty theft. Charges against employees, however, included both embezzlement and rape which are more complex crimes to prosecute. The embezzlement cases, in particular, required that attorneys study the casino's very complex security system in order to be able to understand it and present it to a jury.

While there may be some increase in demands on the District Attorneys' time, it does not appear that the demands from the Chukchansi Casino were such that they required the hiring of a new District Attorney. For these reasons, we do not believe that the District Attorney will need to hire a new attorney to handle the case load from the Station Casino.

#### *Department of Corrections*

Increased criminal activity will place an added burden on the Madera County Department of Corrections (MCDC). The County has one jail that was built to accommodate 316 inmates, but the facility routinely has a population well above that level. At the beginning of 2005, the facility housed 364 inmates with approximately 50 of them being women. In fiscal year 2005-2006, the average daily inmate population was 377. In 2006-2007, this number was at 396. The projection for 2007-2008 is 408. In fiscal year, 2006-2007 a project which added bed space and staffing to the current facility was completed. This is expected to accommodate the 408 inmates and only modest increases beyond that number. The current facility is at capacity.

The MCDC has received funding of \$30 million authorized by State of California Senate Bill 900 to build a new facility. Architectural plans are being created and construction is expected to begin in late 2008 early 2009. The facility is expected to be finished in July 2010.

The inmates housed at this facility are there because they broke state law while in Madera County. They are either awaiting arraignment, being held on warrants or serving a sentence of less than one year. Those prisoners serving sentences over 1 year are transferred to a state facility.

Talks with the Sheriff indicate that calls to the Chukchansi Casino result in 2 arrests per month. The Sheriff believes that the arrest rate will be higher at the new casino because of its proximity to a more densely populated area; therefore we estimate that the new casino will create 3 arrests per month. The cost to house one inmate for one night is \$59. This figure includes food, clothing, staff salaries, building, utilities, etc. The average stay is 23 nights. The following table details the added cost for the Department of Corrections for the additional burden created by the casino.

Table 3.12

**Correctional Facilities Costs**

Number of Arrests per Year	36
Average Length of Stay (Nights)	23
Cost per Night	\$59
Total	\$48,852

With 36 additional prisoners staying an average of 23 nights, the prison will have 828 additional cell nights filled. This is the equivalent of having an additional 2.3 prisoners in prison for a year. The additional burden of housing 2.3 prisoners a year could easily be accommodated by the new facility.

Note: There are two women's prisons in Madera County but these are State facilities and therefore not part of the County system.

*Behavioral Health Services*

The Madera County Behavioral Health Services (MCBHS) provides services which promote the prevention of and recovery from mental illness and substance abuse for residents of the County. According to the Director, Janice Melton, MCBHS had 43.5 licensed and pre-licensed counselors on staff in 2007 who served 5,180 clients during the same year. Mental illness services are provided by MCBHS only to the segment of the population within a lower income bracket while alcohol and drug counseling is provided for all income levels based on a sliding scale fee.

Clients rarely present the symptoms which the DSM-IV diagnoses as problem or pathological gambling alone and clients rarely approach MCBHS for help with gambling problems. Typically, problem gamblers present symptoms of a mental illness, such as depression, or a drug and alcohol problem. It is later determined they have a co-occurring gambling problem.

There are currently no local resources for problem gambling in the private sector in Madera County. The Director of MCBHS said in the last six months, 2-3 private sector counselors have contacted MCBHS for advice/resources on problem gambling.

The Memorandum of Understanding between the County and the Chukchansi does provide for money for the MCBHS. The MCBHS has used these funds to fund a prevention coordinator. Funding has also been used to update MCBHS's intake assessments to incorporate questions to identify problem gambling. Additionally, staff members are trained to identify symptoms of problem gambling.

The 2006 California Problem Gambling Prevalence Survey, prepared for the state Office of Problem and Pathological Gambling, cites a meta-analysis of problem and pathological gambling studies (Shaffer et al., 1999). This analysis concludes that the prevalence rate of problem gambling has risen from 0.8% to 1.3% since 1993, when casino gambling was relatively rare. The increase from 0.8% to 1.3% is assumed to be attributed to the introduction of more casinos within communities. Thus it is assumed that the introduction of a large casino would increase the percentage of problem gamblers in the County by 0.5% or 531 persons.

According to Debby Estes, Assistant Director of Madera County Behavioral Health Services, between 10% and 20% of those problem gamers will seek professional help from either the County or private practitioners. That means 53 to 106 problem gamers will seek professional help in Madera County.

**Table 3.13**

**Number of Problem Gamblers in Madera County**

2007 Madera County Adult Population	106,260
Increase in prevalence rate	0.50%
Incremental Problem Gamblers	531
Percent Seeking Professional Help	10% to 20%
Number Seeking Professional Help	53-106

Source: Interview with Janice Melton, Director, Madera County Behavioral Health Services, June 2, 2008. iXPRESS, Claritas, Inc.

To err on the side of overestimating the burden to the County, we have assumed that 20% of these problem gamers will seek professional treatment. Janice Melton, the Director of MCBHS expects that 80% of the people seeking professional treatment will do so with MCBHS due to the lack of resources for problem gambling elsewhere in the county. Under these assumptions, 85 Madera County residents would seek treatment with MCBHS.

**Table 3.14**

**Number of Treated Patients at MCBHS**

Number Seeking Professional Help (20%)	106
Percent Treated at MCBHS	80%
Number Treated at MCBHS	85

In 2007, MCBHS treated 5,180 clients with 43.5 licensed counselors. Given this patient to counselor ratio and the additional 85 people seeking treatment for problem gaming in Madera County due to the introduction of the proposed casino, the following table shows the additional counselors to be hired.

**Table 3.15**

**Number of New Patients at MCBHS**

Number of Patients Treated in 2007	5,180
Number of Licensed Counselors	43.5
Additional Patients to be Treated at MCBHS	85
Additional Staff to be Hired	0.7

Source: Interview with Mental Health Director Janice Melton, Madera County Behavioral Health Services, June 2, 2008.

The County would have to hire 0.7 FTE licensed counselors to treat the problem gamer population. The following table details the cost for 0.7 FTEs.

**Table 3.16**

**Behavioral Health Personnel Costs**

	Cost per Unit	Total
Licensed Clinician Salary & Benefits (.7)	\$66,158	\$47,228
Retirement	\$10,141	\$7,239
Health Insurance	\$6,496	\$4,637
Workers' Compensation Insurance	\$205	\$146
Equipment	\$6,101	\$4,355
Total	\$89,101	\$63,606

Source: Interview with Janice Melton, Director, Madera County Behavioral Health Services, June 2, 2008.

*Resource Management Agency*

The Resource Management Agency is a unified agency that brings together several different County departments: Roads, Planning, Environmental Health, Sanitation, Engineering, Building Inspection and Fire Marshall.

The only department expected to need any investment due to the demands of the casino would be the roads department. As the traffic engineer has not completed the roads study, the results of that study have not been included here. We will use the Memorandum of Agreement payment (\$4.6 - \$15.6 million adjusted by the CPI to \$5.126-\$17.384 million) as a substitute for road improvement costs.

*Schools*

There are ten school districts in Madera County. In the 2007-2008 school year, they ranged in size from 360 to 18,958 students per school district. The total student population in Madera County was 29,411 in 2007-2008. The Madera Unified School District (MUSD) is the largest of the school districts serving approximately 65% of the students in the county. MUSC includes the area where the proposed casino would be located and the City of Madera. As most of the impacts will be borne by MUSD because of its size and proximity to the proposed development, we have examined the impacts that this development will have on the district.

The MUSD is the third fastest growing school district in the state. Two years ago MUSD was on a 420-student growth model. Due to slowing of population growth, the District is now on a 125-150-student growth model. In 2007-2008 the student population was 18,958. Management does not believe this to be a permanent slowdown in growth. As soon as the economy picks up, the District is expected to return to higher student population growth rates.

After several years of high student population growth, MUSD residents passed two school bonds (in 2002 and 2006) which allowed the construction of four elementary schools, one middle school, one high school, as well as renovations at existing schools and purchase of land for a third high school. The opening of the fifth new school in August 2007 allowed the District to transition from a year-round calendar (which had been implemented because of capacity constraints and high population growth) to a traditional 9-month calendar.

Budget cuts have caused the district to close one school building for the upcoming school year. This school has a capacity for 635 students. Additionally, there are 30 vacant classrooms throughout MUSD facilities. Each classroom can accommodate an average of 25 students. In total, in the 2008-2009 school year the MUSD could potentially accommodate an additional 1,385 students.

The following table projects the number of new students the casino will generate for the county school system. The additional 175 student population could easily be absorbed by the MUSD according to their current capacity.

**Table 3.17**  
**Number of New Students**

New Population	836
Percentage of School Children in Madera Population	20.9%
New School Population	175

Source: IXPRESS, Claritas, Inc.

### **3.2.2 New Resident Demand**

This section details the demand for increased governmental services created by the new residents in the County. These services include a much broader range of services and include everything from animal control to welfare support.

For those services that are uniquely offered by the County, we have assumed the entire County population will bear their cost. For services such as fire, sheriff, corrections and judicial where similar services are provided by the Cities of Madera and Chowchilla as well as County governments, we assumed that only those residents who live in the unincorporated areas of the County will bear these costs.

We assumed that 60% of the new County population will live in the City of Madera and 8% will live in the City of Chowchilla (See Section 3.1.3). The remaining 268 residents are projected to live in the unincorporated areas of the County.

#### *Administrative Services*

Administrative services include the cost of running the County's government as well as those costs not covered in any other section below. It includes the costs of the following departments: the County Board of Supervisors, library, animal control, human resources, information technology, insurance, tax collection, elections, contingency fund and other costs. With each additional resident of the County, these costs increase. The following table details the amount of spending per capita the County incurs for these services and what the cost of the new residents will be.

Table 3.18

**Cost of Administrative Services**

2007 Budget	\$21,738,410
2007 Population	147,778
Per Capita Spending	\$147.10
Number of New Residents	836
Cost for New Residents	\$122,977

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County. Interview with Stell Manfredi, Madera County Administrative Officer, June 2, 2008.

*Fire Protection*

The demand for fire protection services will increase as population increases in the unincorporated areas of Madera County. The following table demonstrates the expenditure per resident Madera County currently employs and the increase in spending required to maintain that level of service after the projected population increase.

Table 3.19

**Cost of Fire Services**

2007 Budget	\$5,117,298
2007 Population	147,778
Per Capita Spending	\$34.63
Number of New Residents	268
Cost for New Residents	\$9,280

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County. Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

*Sheriff*

With an increase in population comes an increase in need for law enforcement. The following chart details the impact of the additional population and expected increase in crime prevention spending. Since the Cities of Madera and Chowchilla provide police protection, only the unincorporated residents are included in this analysis.

Table 3.20

**Cost of Sheriff Services**

2007 Budget	\$12,169,175
2007 Population	147,778
Per Capita Spending	\$82.35
Number of New Residents	268
Cost for New Residents	\$22,069

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County. Interview with Sheriff John Anderson, Madera County Sheriff's Department, June 2, 2008.



### *Emergency Medical Services*

As discussed above, emergency medical services are generally paid by the individual being served and where the County bears the cost it is included in the sheriff's budget. Therefore, the analysis above includes a per capita analysis of the cost of emergency medical service provision.

### *Judicial Services*

The following table demonstrates the additional costs that will be incurred to provide judicial services to the new population in the unincorporated areas of Madera County.

**Table 3.21**  
**Cost of Judicial Services**

2007 Budget	\$6,832,976
2007 Population	147,778
Per Capita Spending	\$46.24
Number of New Residents	268
Cost for New Residents	\$12,392

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County.

### *Department of Corrections*

The following table details the costs associated with providing prison services for additional residents. It includes both the adult prison discussed above as well as the juvenile detention facility and juvenile boot camp run by the County. As the Cities pay to use the County facility, only the unincorporated population is used here.

**Table 3.22**  
**Cost of Correctional Services**

2007 Budget	\$16,242,926
2007 Population	147,778
Per Capita Spending	\$109.91
Number of New Residents	268
Cost for New Residents	\$29,457

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County.

### *Behavioral Health Services*

The demand for behavioral health services will also increase with population. Most of the funding for this department is state or federal. County funds are cited in the table below (much of their funding comes from the state). Assuming the same rate of service provision, the cost of the increased population will be as follows. The Cities of Madera and Chowchilla do not provide similar services.

**Table 3.23**

#### **Cost of Behavioral Health Services**

2007 Budget	\$14,101
2007 Population	147,778
Per Capita Spending	\$0.10
Number of New Residents	836
Cost for New Residents	\$80

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County. Interview with Director Janice Melton, Madera County Behavioral Health Services, June 2, 2008.

### *Social Services*

Due to the influx of new people to the County, the demand for social services will increase. Madera County provides numerous social services to its underprivileged citizens. The In-Home Supportive Services (IHSS) program provides aged, blind, disabled and low-income individuals with services that allow them to remain in their own homes as opposed to being institutionalized. The Veterans Services Office provides services to veterans and their dependents including handling property for those who have been adjudged incompetent.

The Department of Social Services Administration also administers various other programs. Funding under this department goes to the Temporary Assistance to Needy Families program, Fresno/Madera Area Agency on Aging, CalWORKS, economic development, the More Opportunities for Viable Employment project, foster care and others. Many of these departments focus on training and employee development.

Given the estimated population increase, the following table details the increased spending required by the County on an annual basis. The Cities of Madera and Chowchilla do not provide similar services.

**Table 3.24**

#### **Cost of Social Programs**

2007 Budget	\$4,535,363
2007 Population	147,778
Per Capita Spending	\$30.69
Number of New Residents	836
Cost for New Residents	\$25,657

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County.

### *Resource Management Agency*

Each department (See Casino Demand Section for list) is expected to have increased demand for its services as population increases. The following details spending per capita for these services and the required increase in spending needed to maintain this level of spending.

Table 3.25

#### **Cost of Resource Management Services**

2007 Budget	\$6,862,317
2007 Population	147,778
Per Capita Spending	\$46.44
Number of New Residents	836
Cost for New Residents	\$38,821

Source: Recommended Proposed Budget for the Fiscal Year  
Ending June 30, 2008, Madera County.

### *Schools*

As new residents move into the area, the County must increase its spending to support the school system. The following chart details the local spending per pupil currently found in the Madera Unified School District (MUSD). MUSD is one of ten school districts found in the County. As this is the largest school district and the one to bear the greatest impacts should the casino development go forward, we will assume that the per pupil spending in MUSD is similar to that in other school districts. The following table projects the new cost to the County based on the new student level after the casino is put in place.

Table 3.26

#### **Cost of Educational Services**

2007 Budget	\$26,294,746
2007 Student Population	18,958
Per Capita Spending	\$1,387.00
Number of New Students	175
Cost for New Residents	\$242,725

Source: Ed Data, California Department of Education  
<http://www.ed-data.k12.ca.us>

### **3.2.3 Total Cost**

The total cost to the County of providing services to the casino and the new residents attracted by the casino includes both one-time capital development costs as well as annual payroll and service costs.

### *Casino-Induced Costs*

Capital development costs include a fire station, fire truck and road improvements. These costs are estimated in the table below.

**Table 3.27**

#### **Estimate of Casino-Induced Capital Costs**

Fire Protection <sup>1</sup>	\$3,100,000
Roads	\$5.126-\$17.384 million
Total	\$8.22 - \$17.38 million

<sup>1</sup>The estimate for a new fire house is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

In addition to capital costs, the casino is also creating the need for more personnel in some departments. It should be noted that the proposed staffing ratio for fire protection is a significant increase over that recommended in the previous Socioeconomic Impact Assessment (2005). Therefore costs have increased to a level beyond that supported by the County MOU. These costs are annual and detailed below.

**Table 3.28**

#### **Estimate of Casino-Induced Annual Costs**

Fire Protection	\$2,346,993
Sheriff	\$634,554
Department of Corrections	\$48,852
Behavioral Health Services	\$63,606
Total	\$3,094,005

### *New Resident-Induced Costs*

The costs created by new residents are annual in nature. They are detailed below.

**Table 3.29**

#### **Estimate of New Resident-Induced Annual Costs**

Administrative Services	\$122,977
Fire Protection	\$9,280
Sheriff	\$22,069
Judicial Services	\$12,392
Department of Corrections	\$29,457
Behavioral Health Services	\$80
Social Services	\$25,657
Resources Management Agency	\$38,821
Schools	\$242,725
Total	\$503,459

### **3.2.4 Impact from County Visitors**

In Madera County, at any time, there are a number of visitors as well as itinerant construction workers. The public services for these visitors and workers are not unusual for any governmental entity to provide on a continuing basis; and the costs related to them are included in the budgets of the various divisions of government. With an increase in population due to the new casino, we have increased the cost of certain governmental services on a per capita basis as shown above. The per capita costs include the costs of servicing visitors and itinerants. Thus no separate allowance is made for these persons in terms of most government operations. The impacts of the visitors, however, are directly accounted for in the additional capital costs related to fire protection and roads as well operational costs the following departments: Fire Protection, Sheriff, Judicial Services and Department of Corrections.

## **3.3 County Revenue from Casino**

There are two main sources of revenue the County can expect from the casino: payments under the Memorandum of Understanding between the County and the North Fork Rancheria Tribe and tax revenue.

### **3.3.1 Memorandum of Understanding Revenue**

The Memorandum of Understanding with the County was signed August 16, 2004. Among other things, the agreement requires payments to be made to the County by the casino. This section details those payments.

#### **Non-Recurring Payments**

Non-recurring payments are those payments that are made only once by the Tribe in order to mitigate potential impacts created by the casino.

##### *Public Safety Resources Contribution*

Money for public safety is to be used for an emergency response facility to be located within 5 minutes response time to the casino. The total value of this payment is \$1,915,000.

##### *Transportation Resources Contribution*

This contribution will be between \$4 and \$15 million depending on the results of a traffic study. The monies will go toward mitigating impacts to traffic and other transportation resources. This money is only allotted for improvements on those roads owned by the County.

##### *Road Contribution Consistent with County Ordinances*

This contribution is in lieu of road impact fees and is to be used to mitigate the impacts to the County's roads. It is \$600,000.

##### *Recreation Contribution*

To be used for expenditures related to Courthouse Park and the Ahwahnee property, the Tribe will make a one-time payment of \$200,000.

### *School Contribution*

In lieu of school impact fees, the Tribe will pay \$150,000 for impacts to the Madera Unified School District.

### *County Legal Fees Reimbursement*

The Tribe will also reimburse the County for the cost of its legal fees associated with the negotiation of the Memorandum of Understanding. This reimbursement is up to \$50,000.

The non-recurring payments (with the exception of the county legal fees) are subject to the CPI Adjustment as of July 1, 2005 and each July 1 thereafter. This is equal to the percentage change in the U.S. Department of Labor's Consumer Price Index for all Urban Consumers (CPI-U), U.S. city average for all items, for the previous May to May period, rounded to the nearest thousand dollars. Recurring payments are also adjusted annually, but only after the opening of the casino. The CPI index is shown in the table below.

**Table 3.30**  
**CPI - All Urban Consumers**

Year	May (Index 1982-1984 = 100)	% Change
2005	194.40	
2006	202.50	4.17%
2007	207.95	2.69%
2008	216.63	4.18%
2005-2008		11.44%

Source: US Department of Labor, Bureau of Labor Statistics

## **Recurring Payments**

Recurring payments have been established to occur yearly for the 20-year duration of the Memorandum of Understanding. The following section details these recurring payments.

### *North Fork Rancheria Charitable Foundation Contribution*

The Tribe is to establish this charitable foundation no later than 30 days after construction commences. The Foundation will focus on negating social impacts from the casino development or serving the community generally. Possible recipients include youth programs, senior centers, parks services, recreation department, service clubs or other activities. The donation will be \$200,000 annually although it is not under the control of the County.

### *North Fork Rancheria Economic Development Foundation*

This nonprofit corporation is again to be established by the Tribe within 30 days of beginning construction. The focus of the Foundation is to mitigate the impacts of the development or serve the community. The donation is \$250,000 annually. This contribution is not under the control of the County.

### *North Fork Rancheria Educational Foundation*



The money from this nonprofit corporation will go to supplement the instructional programs of the local school districts or support work force development and training programs. The annual contribution of \$400,000 is not under the control of the County.

*North Fork Unincorporated Area Foundation*

This \$250,000 donation is to be used for community development, education, beautification, infrastructure, parks/recreation, business relations/development/attraction and assistance to other nonprofit organizations. This contribution is not under County control.

*County Services Contributions*

The following contributions will be made directly to the County with the purpose of limiting the impacts of the development on the community. These include \$250,000 for workforce programs or neighborhood housing; \$415,000 for the salaries of ½ sheriff sergeant and 5 sheriff deputies; \$1.2 million for the salaries of 3 fire captains and 6 fire engineers; \$50,000 to the Behavioral Health Department for alcohol education and treatment and prevention of problem gambling; \$70,000 for maintenance, operation and preservation of open space within Courthouse Park and the Ahwahnee property; \$100,000 for additional public safety support and administrative positions; and \$500,000 for the public facilities budget.

**Total Payments**

The following table details all of the payments agreed to in the Memorandum of Understanding.

Table 3.31

**Memorandum of Agreement Revenue**

		With CPI Adjustment on July 1, 2008
<b>Non-Recurring Contributions</b>		
Public Safety Resources Contribution	\$1,915,000	\$2,134,000
		\$4,457 - \$16.715
Transportation Resources Contribution	\$4-\$15 million	million
Road Contribution Consistent with County Ordinance	\$600,000	\$669,000
Recreation Contribution	\$200,000	\$223,000
School Contribution	\$150,000	\$167,000
Legal Fees Reimbursement	\$50,000	\$50,000
	\$6,915,000 -	\$7,700,000 -
Subtotal	\$17,915,000	\$19,958,000
<b>Recurring Contributions</b>		
North Fork Rancheria Charitable Foundation Contribution <sup>1</sup>	\$200,000	
North Fork Rancheria Economic Development Foundation <sup>1</sup>	\$250,000	
North Fork Rancheria Educational Foundation <sup>1</sup>	\$400,000	
North Fork Unincorporated Area Foundation <sup>1</sup>	\$250,000	
<b>County Services Contributions</b>		
Workforce or Housing programs	\$250,000	
Police	\$415,000	
Fire	\$1,200,000	
Behavioral Health	\$50,000	
Open Space/Parks	\$70,000	
Public Safety Support	\$100,000	
Public Facilities Budget	\$500,000	
City of Madera <sup>1</sup>	\$250,000	
City of Chowchilla <sup>1</sup>	\$100,000	
Subtotal	\$4,035,000	

Source: Memorandum of Understanding between Madera County and the North Fork Rancheria of Mono Indians of California, signed August 16th, 2004.

<sup>1</sup>This contribution is not under the control of Madera County.

CPI Adjustment only applicable to non-recurring contributions (excluding legal fees) prior to opening of casino.

It should be noted that Madera County imposes an impact fee on new developments at the time of permitting. These fees support County government services. The impact fee in 2007-2008 for a single family unit is \$4,342 and for a multi-family unit is \$3,749. We have estimated that 263 new households will move to Madera County. Based on the average of these fees and the fact the each household would occupy a housing unit which at one point paid the fee, the County would collect, at most, \$1,063,967 from these households. This is an upperbound estimate which assumes that all 263 families would occupy new homes. In reality, some would occupy older homes or apartments for which an impact fee was paid in the past.

County Impact fees are also applied to commercial non-residential structures. Based on a fee of \$775 per 1,000 square foot, the proposed casino – if it were to pay an impact fee – would generate a one-time impact fee of \$382,083.

The annually-recurring MOU provision for county services, which totals \$2,585,000, far exceeds the one-time county impact fee amount of \$1,446,050 that would be potentially collected from an analogous development of similar size which would require the same number of families to move to the County.

### 3.3.2 Tax Revenue

Because of the sovereign status of the North Fork Rancheria, the casino will pay fewer taxes than a development of this size would normally pay. The following sections present information on the taxes that will be lost due to the placement of the property into trust and the taxes generated from the new residents to the area.

#### Property Tax

The following section calculates the lost and gained taxes from the casino opening.

##### *Casino Property Tax*

The casino opening would normally create a windfall for the locality in terms of property taxes, but the special circumstances surrounding this development prevent that from happening. Because the owner/operator of the development is a Native American Indian Tribe, the property will go through a process by which it is placed into trust. By placing the land in trust, it is no longer subject to property taxes; therefore, the tax calculations below represent the loss in taxes that will occur when the casino land is placed into trust. Taxes on the property are approximately \$12,600.

**Table 3.32**  
**Property Tax**

Parcel Number	Acreage	Assessed Value			Property Tax*
		Land	Structure	Total	
033-030-010	36.01	\$117,099	\$0	\$117,099	\$1,246
033-030-011	40.66	\$134,086	\$14,568	\$148,654	\$1,582
033-030-012	38.26	\$126,276	\$21,943	\$148,219	\$1,577
033-030-013	42.23	\$140,408	\$17,047	\$157,455	\$1,675
033-030-014	38.92	\$128,427	\$114,850	\$243,277	\$2,588
033-030-015	56.44	\$183,529	\$10,897	\$194,426	\$2,069
033-030-017	52.97	\$171,842	\$2,897	\$174,739	\$1,859
Total	305.49	\$1,001,667	\$182,202	\$1,183,869	\$12,596

\*The property tax rate is estimated at 1.1%. The exact tax rate of any given year cannot be definitively projected.

Source: First American Title, 2003; Analytical Environmental Sciences, 2004; Madera County Assessor's Office, 2008.

##### *New Resident Property Tax*

Private property remains taxable; therefore, any new housing stock built due to the opening of the casino would increase property tax revenue for the County. Our analysis indicates that more than enough housing stock is constructed and vacant or currently under development to serve the

new residents of the County (See Section 7: Land Development Pattern). Because no new housing is expected to be built due to the movement of new residents into the area, the casino development is not expected to increase property tax revenue for the County.

## **Sales and Use Tax**

The County sales and use tax was calculated using RIMS II. By inputting changes to the output in a sector or sectors of the economy, RIMS II estimates the direct, indirect and induced changes to output in all sectors of the economy. The following table details the output in terms of dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operations spending. Currently, a 0.5% sales tax provides revenue to the locality. The rest of the 7.75% in sales tax charged goes to the state.

**Table 3.33**  
**Sales and Use Tax Revenue**

Retail Sector Output for Construction Spending (one-time)	\$26,177,953
Retail Sector Output for Operational Spending (annual)	\$8,864,319
Sales Tax Rate for Madera County	0.50%
Sales Tax on Construction Spending (one-time)	\$130,890
Sales Tax on Operational Spending (annual)	\$44,322

Source: California State Board of Equalization

## **Hotel Tax**

Increased hotel and motel tax revenue would be seen because of the additional visitors coming into Madera County in order to enjoy the casino. The new development itself would not contribute to the tax rolls because of its sovereign status; therefore, no hotel tax would apply to the hotel guests staying at the casino hotel.

It is projected that some guests will visit Madera for the primary purpose of gaming but not stay at either of the two gaming hotels. In this instance, any hotel taxes derived from their visit would be added revenue for the County. The measurement of these visitors is too tenuous and speculative and therefore calculations have not been attempted.

### **3.3.3 Total Revenue**

The following table details the total revenue expected to be generated by the casino on both an annual and one-time basis.

**Table 3.34**  
**Total Revenue Attributed to Casino**

<b>One-Time Payments</b>	
Memorandum of Understanding	\$7,700,000 - \$19,958,000
Sales and Use Tax	\$130,890
<b>Total</b>	<b>\$7.83 - \$20.09 million</b>
<b>Annual Revenue</b>	
Memorandum of Understanding <sup>1</sup>	\$2,585,000
Property Tax	(\$12,596)
Sales and Use Tax	\$44,322
<b>Total</b>	<b>\$2,616,726</b>

<sup>1</sup>Those MOU payments earmarked for charitable foundations are not included here as these funds are not under the control of the County.

### 3.4 Cost Versus Revenue

This section provides a comparison of the costs and revenues estimated as a result of the new casino. The first table compares one-time costs and revenue while the second table compares annual costs and revenue. The primary gap between costs and revenues reflects increased cost assumptions related to Fire Protection. A revision to the MOU to allow for recommended protection levels would provide for a closer balance.

**Table 3.35**  
**Comparison of One-Time Costs and Revenues**

<b>Spending Category</b>	<b>Cost</b>	<b>Revenue*</b>
Fire Protection <sup>1,2</sup>	\$3,100,000	\$2,134,000
Roads <sup>3</sup>	\$5.126-\$17.384 million	\$5.126-\$17.384 million
Recreation <sup>4</sup>	\$223,000	\$223,000
Schools/Sales and Use Tax <sup>4,5</sup>	\$167,000	\$297,890
Legal Fees <sup>4</sup>	\$50,000	\$50,000
<b>Total</b>	<b>\$8.66 - \$20.92 million</b>	<b>\$7.83 - \$20.09 million</b>

<sup>1</sup>The estimate for a new fire house is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

<sup>2</sup>The difference between cost and revenue for fire protection is \$966,000. Annual debt service at 4.25% for 30 years is \$57,572, including coverage. Covered by annual \$1.2 million MOU payment for fire protection.

<sup>3</sup>At the completion of this report, the road study had not been completed; therefore the total cost of road improvements is only estimated based on the MOU contribution.

<sup>4</sup>The MOU calls for a contribution of this amount and it is assumed the County will use the entire amount.

<sup>5</sup>Cost is from Schools. Revenue is from Sales Tax and MOU contribution.

\*CPI adjustments are made to MOU contributions through July 1, 2008.

Table 3.36

**Comparison of Annual Costs and Revenues**

<b>Spending Category</b>	<b>Cost</b>	<b>Revenue</b>
Administrative Services <sup>1</sup>	\$122,977	\$570,000
Fire Protection <sup>1,4</sup>	\$2,356,273	\$1,142,428
Sheriff <sup>1,6</sup>	\$656,623	\$515,000
Judicial Services	\$12,392	<sup>2</sup>
Department of Corrections	\$78,309	<sup>2</sup>
Behavioral Health Services <sup>1</sup>	\$63,686	\$50,000
Social Services <sup>1</sup>	\$25,657	\$250,000
Resources Management Agency	\$38,821	<sup>2</sup>
Schools/Sales and Use Tax <sup>3</sup>	\$242,725	\$44,322
Property Tax	\$0	(\$12,596)
County Payments to Cities <sup>5</sup>	\$350,000	\$350,000
<b>Total</b>	<b>\$3,947,464</b>	<b>\$2,909,154</b>

Costs include Casino-induced and Resident-Induced Demand.

<sup>1</sup>MOU Payment

<sup>2</sup>Covered in excess of \$570,000 MOU payment above.

<sup>3</sup>Cost is from Schools. Revenue is from Sales Tax.

<sup>4</sup>Annual Debt Service for fire protection capital costs has been subtracted from MOU revenue.

<sup>5</sup>The MOU calls for a \$250,000 payment to the City of Madera and \$100,000 payment to the City of Chowchilla.

<sup>6</sup>Sheriff revenue includes \$415,000 payment to the sheriff's office from the MOU and \$100,000 for Public Safety Support from the MOU.



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## Section 4: Alternative B -- Reduced Intensity

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In contrast to Alternative A, this alternative has 20% less gaming space for a total of 128,080 square feet dedicated to the casino portion of the development. The development does not include a hotel, but it does have a gift shop, buffet, 2 bars, a coffee shop, a steakhouse and a 5-tenant food court. The entertainment space would be equal to that in Alternative A, but parking would be reduced to 3,200 spaces.

**Table 4.1**  
**Building Program**

Element	Square Footage
Casino	128,080
Retail	1,185
Food and Beverage	53,725
Entertainment	7,000
Central Plant	9,000
Total	198,990

Source: Station Casinos.

### 4.1 Development Impact on Population

As described above, we used the RIMS II model to predict the direct, indirect and induced employment created by this alternative.

#### 4.1.1 Construction Employment

For this alternative, the projected construction spending will be almost \$256 million. Construction will create 1,159 direct employees and 643 indirect and induced employees for a total of 1,802 employees. The following table details the projected construction employment.

**Table 4.2**  
**Construction Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	3.64
2. Mining	10.39
3. Utilities	0.83
4. Construction	1,163.46
5. Manufacturing	69.33
6. Wholesale Trade	23.55
7. Retail Trade	192.93
8. Transportation & Warehousing	30.05
9. Information	14.19
10. Finance & Insurance	11.84
11. Real Estate & Rental & Leasing	15.00
12. Professional, Scientific, & Technical Services	30.36
13. Management of Companies & Enterprises	23.43
14. Administrative & Waste Management Services	28.46
15. Educational Services	4.83
16. Health Care & Social Assistance	60.89
17. Arts, Entertainment, & Recreation	6.54
18. Accommodation & Food Services	66.03
19. Other Services	34.50
20. Households	11.31
21. Total Employment	1,802

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **4.1.2 Operational Employment**

Operational employment includes those jobs that are generated from the operation of the casino. These impacts will last as long as the casino is in operation.

#### **Direct Employment**

Direct employment includes all positions at the casino and hotel. Station Casinos anticipates that the facility will employ 879 full-time employees and 139 part-time employees or 962 full-time equivalents (FTEs).

#### **Indirect and Induced Employment**

Indirect employment includes those jobs which provide support services to the casino but are not directly paid by the casino. Induced employment includes those jobs created by the spending of direct employees. RIMS II projects that if Alternative B is operational it will have the effect of creating 1,485 jobs in Madera County. Of those, 962 are the direct employees discussed above and 523 are indirect and induced jobs.

**Table 4.3**  
**Operational Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	2.72
2. Mining	0.15
3. Utilities	0.55
4. Construction	5.16
5. Manufacturing	15.12
6. Wholesale Trade	7.86
7. Retail Trade	58.26
8. Transportation & Warehousing	9.34
9. Information	7.08
10. Finance & Insurance	5.24
11. Real Estate & Rental & Leasing	12.30
12. Professional, Scientific, & Technical Services	6.36
13. Management of Companies & Enterprises	12.57
14. Administrative & Waste Management Services	11.30
15. Educational Services	2.47
16. Health Care & Social Assistance	30.88
17. Arts, Entertainment, & Recreation	879.61
18. Accommodation & Food Services	388.82
19. Other Services	23.04
20. Households	5.80
21. Total Employment	1,485

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **4.1.3 Population**

This section provides information on how those new employees will affect population growth.

#### **Construction Employment Impact**

Similar to Alternative A, it is not expected that the 1,802 temporary construction jobs will have a significant impact on the local population. Construction is temporary and therefore the jobs created as a result of construction spending are temporary as well. We do not project that there will be any population changes due to construction spending.

#### **Operations Employment Impact**

The almost 1,500 permanent jobs are expected to have an impact on population however. It is believed that some portion of those jobs will be filled by individuals who will move into Madera County for employment. In order to project what percentage of people will move into the County, it must be determined what percentage of individuals who work at the casino will live in Madera County.

### *Direct Employees*

As with Alternative A, it is believed under this scenario that the casino will have about 65% of its employees living in Madera County. Given this assumption, 625 of the 962 employees will be residents of Madera County.

As with Alternative A, it is projected that the number of new employees who will actually move into Madera County will be low. Again we project that up to 20% of the employees will move in from other areas and will use 20% in an attempt to be conservative in calculating the impact the casino will have on the County. If 20% of the direct employees move in from elsewhere, then the number moving into Madera County would be 125.

**Table 4.4**  
**Employees who Live in Madera County**

Total New Employees	962
Percentage of Employees who will live in County	65%
Number of Employees who will live in County	625
Percent of Employees who will Move in from Elsewhere	20%
Number of New Resident Employees in Madera County	125

### *Indirect and Induced Employees*

Some of the 523 indirect and induced employees will also potentially move into Madera County. Applying the same commuting ratio (73.5%) as in Alternative A, the casino would yield a Madera County resident pool of 384.

If 20% of the new employees who live in Madera County are new residents of Madera County, then the number of indirect and induced employees that move into the County would be 77.

### *Total Employees*

The total number of employees projected to move into Madera County is 202.

**Table 4.5**  
**Employees who Move into Madera County**

Direct	125
Indirect and Induced	77
Total	202

## **New Residents**

If 202 new employees move into Madera County, these will not be the only new residents in the County who moved in because of the casino. These employees will in some cases bring families. The following table provides the calculations performed to arrive at a new resident total.

**Table 4.6**  
**New Residents in Madera County**

New Employees Moving to Madera	202
Number of Employees per Household	1.2
Number of New Households	168
Number of Persons per Household	3.18
Number of New Residents	534

Source: U.S. Census.

As in Alternative A, we will assume that 60% the new population or 320 residents will live in the City of Madera and 8% or 43 residents will live in the City of Chowchilla. This leaves a population of 171 in the unincorporated areas of Madera County.

## 4.2 Cost of Government Services

The following section provides information on how the new casino will increase the cost of government service provision.

### 4.2.1 Casino Demand

The new casino will create demands for services just as Alternative A did. These demands will not be as great as with Alternative A because of its smaller size.

#### *Fire Protection*

The casino will demand fire protection from the County but the costs for these services will be slightly lower than in Alternative A. According to Deputy Chief Stan Craig, Alternative B would still require a new fire station and that cost is estimated to be \$1.2 to \$2 million. The new fire engine will not need to be an aerial apparatus as there is no hotel tower component in this alternative. A Type I fire engine costs half of what an aerial apparatus does. Capital costs for fire protection of the casino are listed below.

**Table 4.7**  
**Capital Costs for Fire Prevention**

Fire House	\$1.2 - \$2 million
Type I Fire Engine	\$500,000
Total	\$1.7 - 2.5 million

Source: Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

The new fire station and engine will require fire engineers. Because the truck will not be an aerial apparatus, the staffing needs of the station will decrease relative to Alternative A. In order to reach national standards, the Deputy Chief recommends a staff ratio of 1:1:1 for captain, engineer, and firefighter. The County has a goal of filling 3 fire fighter positions per station which requires 9 persons to be hired. The station will also recruit 12 volunteers to assist with fires. These costs are detailed below.

**Table 4.8**  
**Fire Personnel Costs**

	Units	Cost per Unit	Total
Fire Captains Salary & Benefits	3	\$121,296	\$363,888
Fire Engineers Salary & Benefits	3	\$104,811	\$314,433
Fire Fighters Salary & Benefits	3	\$104,811	\$314,433
Volunteer Memberships	12	\$71	\$852
Sets of Equipment	21	\$1,400	\$29,400
<b>Total</b>			<b>\$1,023,006</b>

Source: *Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008*, Madera County. Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

### *Sheriff*

The Sheriff's department can still be expected to see an increase in call volume with a new casino in town. We estimate that the demands for sheriff services will be the same as in Alternative A as it is located near a higher population area and is not substantially smaller in size. One position requires 5 sheriff deputies to fill and for every 10 deputies there is a sheriff's sergeant to oversee them. The following details the cost of filling both the 5 deputy positions and a half-time sergeant position.

**Table 4.9**  
**Sheriff Personnel Costs**

	Sergeant	Deputy	Total
Salary & Benefits	\$78,316	\$61,031	\$344,313
Equipment	\$12,000	\$22,026	\$116,130
Retirement	\$28,264	\$12,000	\$74,132
Health Insurance	\$8,798	\$8,798	\$48,389
Workers' Compensation Insurance	\$8,480	\$8,480	\$46,640
Uniform Allowance	\$900	\$900	\$4,950
<b>Total</b>	<b>\$136,758</b>	<b>\$113,235</b>	<b>\$634,554</b>

Source: Interview with Sheriff John Anderson, Madera County Sheriff's Department, June 2, 2008.

### *Judicial Services*

The level of criminal activity would be lower at the smaller facility than at the larger one in Alternative A so that we project even less work to be generated for the District Attorney's Office. As such, there will be no measurable impact to the District Attorney's Office.

### *Department of Corrections*

As with Alternative A, we assume there will be 3 arrests per month at this facility.



**Table 4.10**  
**Correctional Facilities Costs**

Number of Arrests per Year	36
Average Length of Stay (Nights)	23
Cost per Night	\$59
<b>Total</b>	<b>\$48,852</b>

*Behavioral Health*

As the number of problem gamers in the County is based on the number of adults in the population, the number of new licensed counselors (0.7) remains the same as in Alternative A.

**Table 4.11**  
**Behavioral Health Personnel Costs**

	Cost per Unit	Total
Licensed Clinician Salary & Benefits (0.7)	\$66,158	\$47,228
Retirement	\$10,141	\$7,239
Health Insurance	\$6,496	\$4,637
Workers' Compensation Insurance	\$205	\$146
Equipment	\$6,101	\$4,355
<b>Total</b>	<b>\$89,101</b>	<b>\$63,606</b>

Source: Interview with Janice Melton, Director, Madera County Behavioral Health Services, June 2, 2008.

*Roads*

As the road study is not yet completed, we are estimating the cost of road improvements to be between \$3.68 and \$12.48 million. This figure is based on the MOU negotiated for Alternative A but has been adjusted to reflect the smaller size of this facility as compared to Alternative A.

*Schools*

The new population in Madera will generate a greater population in Madera County schools. The following table details the number of new students.

**Table 4.12**  
**Number of New Students**

New Population	534
Percentage of School Children in Madera Population	20.9%
<b>New School Population</b>	<b>112</b>

Source: U.S. Census.

As with Alternative A, the school system has sufficient capacity to accommodate these new pupils.

### 4.2.2 Total Cost

The total cost to the County of providing services to the casino and the new residents attracted by the casino includes both one-time capital development costs as well as annual payroll and service costs.

#### *Casino-Induced Costs*

The following details the cost of capital improvements to the County of the new development.

**Table 4.13**  
**Estimate of Casino-Induced Capital Costs**

Fire Protection <sup>1</sup>	\$2,100,000
Roads	\$4.1 - \$13.9 million
Total	\$6.2 - \$16 million

<sup>1</sup>The estimate for a new fire house is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

In addition to one-time costs, the casino will be associated with annual increases in costs.

**Table 4.14**  
**Estimate of Casino-Induced Annual Costs**

Fire Protection	\$1,023,006
Sheriff	\$634,554
Department of Corrections	\$48,852
Behavioral Health	\$63,606
Total	\$1,770,018

#### *New Resident-Induced Costs*

Using the same per resident formulas as in Alternative A, we calculated the expenditures for the new residents in the County.

**Table 4.15**  
**Estimate of New Resident-Induced Annual Costs**

Administrative Services	\$78,552
Fire Protection	\$5,917
Sheriff	\$14,072
Judicial Services	\$7,901
Department of Corrections	\$18,782
Behavioral Health Services	\$51
Social Services	\$16,389
Resources Management Agency	\$24,797
Schools	\$169,478
Total	\$335,939

## **4.3 County Revenue from Casino**

Revenue to the County from this alternative will be lower than that of Alternative A due to the scaled-back nature of this project.

### ***4.3.1 Memorandum of Understanding Revenue***

The Memorandum of Understanding signed by the Tribe and the County only applies to Alternative A. The MOU does allow for renegotiation of the agreement if there is a “reduction in the scope of gaming permitted on the Trust Property.” In Alternative B, the scope of gaming is only 80% of Alternative A.

Assuming that the Tribe and County would renegotiate the agreement, we believe that the terms of the agreement would be similar to the current document. In the current agreement, the Tribe agreed to several one-time payments that would help alleviate the impacts of the development on the County. These included payments for a new fire station, road improvements, education, recreational programs and legal fees. It is assumed that the Tribe would agree to continue these payments under the reduced intensity alternative. The Tribe also agreed to many recurring payments to cover the costs of extra sheriff and fire personnel.

We assume that the Tribe and County would negotiate an MOU similar to the original, but reduced in proportion to the reduction in size of the scope of gaming. To that end, we have reduced the MOU payments by 20% (of the current CPI-adjusted MOU amounts) to reflect the reduction in gaming under this alternative.

Table 4.16

**Memorandum of Understanding Revenue**

		With CPI Adjustment on July 1, 2008
<b>Non-Recurring Contributions</b>		
Public Safety Resources Contribution	\$1,532,000	\$1,707,200
		\$3,565,600 -
Transportation Resources Contribution	\$3,200,000 - \$12,000,000	\$13,372,000
Road Contribution Consistent with County Ordinance	\$480,000	\$535,200
Recreation Contribution	\$160,000	\$178,400
School Contribution	\$120,000	\$133,600
Legal Fees Reimbursement	\$40,000	\$40,000
Subtotal	\$5.5 - \$14.3 million	\$6.16 - \$15.97 million
<b>Recurring Contributions</b>		
North Fork Rancheria Charitable Foundation Contribution <sup>1</sup>	\$160,000	
North Fork Rancheria Economic Development Foundation <sup>1</sup>	\$200,000	
North Fork Rancheria Educational Foundation <sup>1</sup>	\$320,000	
North Fork Unincorporated Area Foundation <sup>1</sup>	\$200,000	
<b>County Services Contributions</b>		
Workforce or Housing programs	\$200,000	
Sheriff	\$506,391	
Fire	\$480,570	
Behavioral Health	\$40,000	
Open Space/Parks	\$56,000	
Public Safety Support	\$80,000	
Public Facilities Budget	\$400,000	
City of Madera <sup>1</sup>	\$200,000	
City of Chowchilla <sup>1</sup>	\$80,000	
Subtotal	\$2,922,961	

<sup>1</sup>This contribution is not under the control of Madera County.

### 4.3.2 Tax Revenue

The following section breaks down the tax revenue to be expected from the casino as well as the new residents.

#### Property Tax

The property tax section includes data on property taxes lost with the Native American-owned development and the additional property taxes from new residents.

##### *Casino Property Tax*

As with Alternative A, the sovereign Tribe will not be required to pay property tax once the property is placed in trust for the Tribe. The loss of property taxes will be identical to that in Alternative A; therefore, the loss in property taxes will be approximately \$12,600.

### *New Resident Property Tax*

New housing already constructed or under development will accommodate the expected increase in population created by this alternative. (See Section 7: Land Development Pattern) As such, there are no additional property taxes expected to be generated by this development.

## **Sales and Use Tax**

Using the RIMS II multipliers, sales and use tax revenue can be calculated. The following table details the output in terms of dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operation spending.

**Table 4.17**  
**Sales and Use Tax Revenue**

Retail Sector Output for Construction Spending (one-time)	\$22,288,033
Retail Sector Output for Operational Spending (recurring)	\$5,847,226
Sales Tax Rate for Madera County	0.50%
Sales Tax on Construction Spending (one-time)	\$111,440
Sales Tax on Operational Spending (recurring)	\$29,236

Source: California Board of Equalization

## **Hotel Tax**

As there is no hotel included in Alternative B, the hotel tax revenue collection will be minimal. Most gamers who plan an overnight trip for the purpose of gaming do so at a casino with a hotel attached. The only additional revenue from hotel taxes would be from those people who traveled to Madera County to game and stayed at a non-casino hotel. Attempts were not made to calculate this revenue as it is very speculative.

### **4.3.3 Total Revenue**

The following table details the total revenue expected to be generated by the casino on both an annual and one-time basis.

**Table 4.18**  
**Total Revenue Attributed to Casino**

<b>One-Time Revenue</b>	
Memorandum of Understanding	\$6.16 - \$15.97 million
Sales and Use Tax	\$111,440
Subtotal	\$6.27 - \$15.97 million
<b>Annual Revenue</b>	
Memorandum of Understanding <sup>1</sup>	\$1,762,961
Property Tax	(\$12,596)
Sales and Use Tax	\$29,236
Subtotal	\$1,779,601

## 4.4 Cost Versus Revenue

The following two tables provide a side-by-side comparison of the costs and revenues to the County. The first chart details one-time costs and revenue while the second deals with annual costs and revenue. The primary gap between costs and revenues reflects increased cost assumptions related to Fire Protection, which is largely offset by tax revenues. A revision to the MOU to allow for recommended protection levels would provide for a closer balance.

**Table 4.19**  
**Comparison of One-Time Costs and Revenues**

Spending Category	Cost	Revenue
Fire Protection <sup>1,2</sup>	\$2,100,000	\$1,707,200
Roads <sup>3</sup>	\$4.1 - \$13.9 million	\$4.1 - \$13.9 million
Recreation <sup>4</sup>	\$178,400	\$178,400
Schools/Sales and Use Tax <sup>4,5</sup>	\$133,600	\$245,040
Legal Fees <sup>4</sup>	\$40,000	\$40,000
Total	\$6.55 - \$16.35 million	\$6.27 - \$16.07 million

<sup>1</sup>The estimate for a new fire house is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

<sup>2</sup>The difference between cost and revenue for fire protection is \$392,800. Annual debt service at 4.25% for 30 years is \$23,410, including coverage. Covered by annual MOU payment for fire protection.

<sup>3</sup>At the completion of this report, the road study had not been completed; therefore the total cost of road improvements is only estimated based on the MOU.

<sup>4</sup>The MOU calls for a contribution of this amount and it is assumed the County will use the entire amount.

<sup>5</sup>Cost is from Schools. Revenue is from Sales Tax and MOU Schools Contribution.



**Table 4.20**  
**Comparison of Annual Costs and Revenues**

Spending Category	Cost	Revenue
Administrative Services <sup>1</sup>	\$78,552	\$456,000
Fire Protection <sup>1,4</sup>	\$1,028,923	\$936,590
Sheriff <sup>1,6</sup>	\$648,626	\$586,391
Judicial Services	\$7,901	<sup>2</sup>
Department of Corrections	\$67,634	<sup>2</sup>
Behavioral Health Services <sup>1</sup>	\$63,657	\$40,000
Social Services <sup>1</sup>	\$16,389	\$200,000
Resources Management Agency	\$24,797	<sup>2</sup>
Schools/Sales and Use Tax <sup>3</sup>	\$169,478	\$29,236
Property Tax	\$0	(\$12,596)
County Payments to Cities <sup>5</sup>	\$280,000	\$280,000
<b>Total</b>	<b>\$2,385,957</b>	<b>\$2,018,740</b>

Costs include Casino-Induced and Resident-Induced Demand.

<sup>1</sup>MOU Payment

<sup>2</sup>Covered in excess of \$456,000 MOU payment above.

<sup>3</sup>Cost is from Schools. Revenue is from Sales Tax.

<sup>4</sup>Annual Debt Service for fire protection capital costs has been subtracted from MOU revenue.

<sup>5</sup>The MOU calls for a \$200,000 payment to the City of Madera and \$80,000 payment to the City of Chowchilla.

<sup>6</sup>Sheriff revenue includes MOU payments directly to the sheriff's office and those MOU payments for Public Safety Support.

## Section 5: Alternative C -- Retail Development

Alternative C examines the impacts if the proposed site were developed into a retail development as opposed to a casino development. The 237,000-square-foot building program includes two department stores, three restaurants and 1,860 parking spaces. The following table provides the building program.

Table 5.1

<b>Building Program</b>	
	Square Footage
Retail Store 1	125,000
Retail Store 2	100,000
Restaurant 1	5,000
Restaurant 2	4,000
Restaurant 3	3,000
Total	237,000

### 5.1 Development Impact on Population

As described above, we used RIMS II to predict the direct, indirect and induced employment created by this alternative.

#### 5.1.1 Construction Employment

For this alternative, projected construction spending will be over \$31 million. The construction investment will create approximately 175 direct jobs and 96 indirect and induced jobs. The following table details the projected construction employment.

**Table 5.2**  
**Construction Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	0.55
2. Mining	1.56
3. Utilities	0.12
4. Construction	174.87
5. Manufacturing	10.42
6. Wholesale Trade	3.54
7. Retail Trade	29.00
8. Transportation & Warehousing	4.52
9. Information	2.13
10. Finance & Insurance	1.78
11. Real Estate & Rental & Leasing	2.25
12. Professional, Scientific, & Technical Services	4.56
13. Management of Companies & Enterprises	3.52
14. Administrative & Waste Management Services	4.28
15. Educational Services	0.73
16. Health Care & Social Assistance	9.15
17. Arts, Entertainment, & Recreation	0.98
18. Accommodation & Food Services	9.92
19. Other Services	5.19
20. Households	1.70
21. Total Employment	271

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **5.1.2 Operational Employment**

Operational employment includes those jobs that are generated from the operation of the retail development. These impacts will last as long as the shopping center is in operation. The following table estimates the annual revenue to be generated by this facility based on the revenue per square foot that is experienced at other similar retail developments.

**Table 5.3**  
**Retail Development Revenue**

Development Type	Development Size (sq ft)	Annual Revenue per Square Foot	Total Revenue
Department Store 1	125,000	\$400	\$50,000,000
Department Store 2	100,000	\$200	\$20,000,000
Restaurant 1	5,000	\$475	\$2,375,000
Restaurant 2	4,000	\$425	\$1,700,000
Restaurant 3	3,000	\$200	\$600,000
Total	237,000	\$1,700	\$74,675,000

The following table details the jobs created by the operation of the facility.

**Table 5.4**  
**Operational Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	1.18
2. Mining	0.08
3. Utilities	0.39
4. Construction	2.94
5. Manufacturing	14.01
6. Wholesale Trade	4.69
7. Retail Trade	729.57
8. Transportation & Warehousing	11.05
9. Information	7.95
10. Finance & Insurance	4.16
11. Real Estate & Rental & Leasing	12.08
12. Professional, Scientific, & Technical Services	4.37
13. Management of Companies & Enterprises	41.82
14. Administrative & Waste Management Services	11.50
15. Educational Services	1.79
16. Health Care & Social Assistance	22.31
17. Arts, Entertainment, & Recreation	2.72
18. Accommodation & Food Services	106.62
19. Other Services	11.54
20. Households	4.19
21. Total Employment	995

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **5.1.3 Population**

In this section the population increase to be expected in the County due to the opening of the retail development is estimated.

### **Construction Employment Impact**

As with the other alternatives, temporary construction jobs are not projected to have any impact on local population growth. Construction is temporary and therefore the jobs created as a result of construction spending are temporary as well. We do not project that there will be any population changes due to construction spending.

### **Operations Employment Impact**

Operation of the retail development will create 995 jobs. Assuming an employment rate of 1.8 persons per 1,000 square feet, the shopping center will employ 427 direct employees. This means that 568 are indirect and induced employees.

### *Employees to Move into Madera County*

General commuting patterns indicate that 73.5% of Madera County jobs are worked by Madera County residents. Of the 73.5% that live in Madera County, we project that very few will move in from other areas given the large number of unemployed persons in the County compared to the number of jobs created by this development. For the gaming alternatives, we projected that as many as 20% of the Madera County residents would be new residents, but we do not feel that the same percentage of residents will move for retail or restaurant employment as casino employment. As retail and restaurant employment opportunities are much more pervasive than casino employment, we project that fewer residents will move into the County for the opportunity to work at a shopping center. To be conservative and project the largest impact probable, we project that 10% of the Madera resident employees will move into Madera County from elsewhere.

**Table 5.5**

#### **Employees who Live in Madera County**

Total New Employees	995
Percentage of Employees who will live in County	73.5%
Number of Employees who will live in County	731
Percent of Employees who will Move to Madera County	10%
Number of New Resident Employees in Madera County	73

### **New Residents**

As was discussed in the previous alternatives, new employees will not be the only new residents in Madera County. Predictably, new employees will bring family and therefore increase the population of Madera by a greater amount. The following table calculates the number of new residents in Madera County.

**Table 5.6**

#### **New Residents in Madera County**

New Employees Moving to Madera	73
Number of Employees per Household	1.2
Number of New Households	61
Number of Persons per Household	3.18
Number of New Residents	194

Source: U.S. Census.

As with the previous alternatives, we will assume that 60% or 116 new residents live in the City of Madera while 8% or 16 residents will live in the City of Chowchilla. The rest (62) will live in the unincorporated areas of the County of Madera.

## **5.2 Cost of Government Services**

The following section provides information on how the retail development will increase the cost of government service provision.

### 5.2.1 Development-Induced Demand

The new retail development will create demands for services just as the casinos do in the other alternatives. The following examines these impacts.

#### *Fire Protection*

The retail development alternative will still require a new fire station and truck according to Deputy Chief Stan Craig. The shopping center will not have a high rise component so an aerial apparatus would not be required. The fire station would need to be equipped with a Type II or higher fire engine though.

**Table 5.7**  
**Capital Costs for Fire Prevention**

Fire House	\$1.2 - \$2 million
Type II Fire Engine	\$500,000
Total	\$1.7 - \$2.5 million

Source: Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

The new fire station and engine will require fire fighters. Because the truck will not be an aerial apparatus, the staffing needs of the station will decrease as compared to Alternative A. In order to reach national standards, the Deputy Chief recommends a staff ratio of 1:1:1 for captain, engineer, and firefighter. The County has a goal of filling 3 fire fighter positions per station which requires 9 persons to be hired. The station will also recruit 12 volunteers to assist with fires. These costs are detailed below.

**Table 5.8**  
**Fire Personnel Costs**

	Units	Cost per Unit	Total
Fire Captains Salary & Benefits	3	\$121,296	\$363,888
Fire Engineers Salary & Benefits	3	\$104,811	\$314,433
Fire Fighters Salary & Benefits	3	\$104,811	\$314,433
Volunteer Memberships	12	\$71	\$852
Sets of Equipment	21	\$1,400	\$29,400
Total			\$1,023,006

Source: Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008, Madera County. Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

#### *Sheriff*

The Sheriff's department can still be expected to see an increase in call volume with a new shopping center in town. Experience with other shopping centers reveals that sheriff departments often station a deputy at a retail location such as this on a full-time basis because of the amount of crime that is perpetrated on the premises. Common criminal activities include breaking into cars, car theft, shoplifting and disorderly conduct. In addition to preventing criminal activity, sheriffs assist with emergency situations and traffic incidents at the shopping center. Given this information, we estimate the Sheriff's department will need to hire 5 deputies and a half-time sergeant to accommodate the shopping center's demand for services.



**Table 5.9**  
**Sheriff Personnel Costs**

	<b>Sergeant</b>	<b>Deputy</b>	<b>Total</b>
Salary & Benefits	\$78,316	\$61,031	\$344,313
Equipment	\$12,000	\$22,026	\$116,130
Retirement	\$28,264	\$12,000	\$74,132
Health Insurance	\$8,798	\$8,798	\$48,389
Workers' Compensation Insurance	\$8,480	\$8,480	\$46,640
Uniform Allowance	\$900	\$900	\$4,950
<b>Total</b>	<b>\$136,758</b>	<b>\$113,235</b>	<b>\$634,554</b>

Source: Interview with Sheriff John Anderson, Madera County Sheriff's Department, June 2, 2008.

*Emergency Management Services*

There will be no impact from the retail development on this department.

*Judicial Services*

Demands for judicial services from crimes perpetrated at the shopping center are not expected to generate the need for additional staffing.

*Department of Corrections*

The cost to the Department of Corrections is projected to be equal to that of Alternative A. The facility is expected to generate a fair amount of criminal activity given its location near a large population and the nature of the shopping center in general.

**Table 5.10**  
**Correctional Facilities Costs**

Number of Arrests per Year	36
Average Length of Stay (Nights)	23
Cost per Night	\$59
<b>Total</b>	<b>\$48,852</b>

*Behavioral Health*

There will be no impact from the retail development on this department.

*Resource Management Agency*

As the road study is not completed yet, we have estimated the cost of the road improvements required for this project to be between \$4.6 and \$15.6 million.

### *Schools*

Under the retail alternative, the number of new students in the school system is estimated to be 41. This small number of new students can easily be accommodated by the County.

**Table 5.11**

**Number of New Students**

New Population	194
Percentage of School Children in Madera Population	20.9%
New School Population	41

Source: iXPRESS, Claritas, Inc.

### **5.2.2 Total Cost**

The following details the total of one-time costs to the County of the new retail development.

**Table 5.12**

**Estimate of Development-Induced Capital Costs**

Fire Protection <sup>1</sup>	\$2,100,000
Roads	\$4.6 - \$15.6 million
Total	\$6.7 - \$17.7 million

<sup>1</sup>The estimate for a new fire house is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

In addition to one-time costs, the facility will be associated with annual increases in costs.

**Table 5.13**

**Estimate of Development-Induced Annual Costs**

Fire Protection	\$1,023,006
Sheriff	\$634,554
Department of Corrections	\$48,852
Total	\$1,706,412

Using the same per resident formulas as above, we calculated the expenditures for 194 new residents in the County.

**Table 5.14**  
**Estimate of New Resident-**  
**Induced Annual Costs**

Administrative Services	\$28,508
Fire Protection	\$2,148
Sheriff	\$5,107
Judicial Services	\$2,868
Department of Corrections	\$6,816
Behavioral Health Services	\$18
Social Services	\$5,948
Resources Management Agency	\$8,999
Schools	\$62,041
<b>Total</b>	<b>\$122,454</b>

## 5.3 County Revenue from Retail Development

Revenue to the County from this alternative will be significantly lower than that of casino Alternative A. The County can expect revenue from the retail development in two forms: payment-in-lieu of impact fees and tax revenue.

### 5.3.1 Impact Fees

Normally under a retail development scenario, the developer would pay impact fees. This is not the case of the sovereign developer. The Tribe would not be required to pay impact fees.

### 5.3.2 Tax Revenue

The following section breaks down the tax revenue to be expected from the development as well as the new residents.

#### Property Tax

The following section calculates the property tax lost due to placing the proposed site into trust as well as the additional revenue to be expected from new residential development.

##### *Casino Property Tax*

As with Alternative A, the sovereign Tribe will not be required to pay property tax once the property is placed in trust for the Tribe. The loss of property taxes will be identical to that in Alternative A; therefore, the loss in property taxes will be approximately \$12,600.

##### *New Resident Property Tax*

New housing already constructed or under development will accommodate the expected increase in population created by this alternative. (See Section 7: Land Development Pattern) As such, there are no additional property taxes expected to be generated by this development.

## Sales and Use Tax

Using RIMS II, output in the retail sector of the economy can be calculated. The following table details the output in terms of dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operational spending.

**Table 5.15**  
**Sales and Use Tax Revenue**

Retail Sector Output for Construction Spending (one-time)	\$3,349,858
Retail Sector Output for Operational Spending (annual)	\$74,115,302
Sales Tax Rate for Madera County	0.50%
Sales Tax on Construction Spending (one-time)	\$16,749
Sales Tax on Operational Spending (annual)	\$370,577

Source: California Board of Equalization

### 5.3.3 Total Revenue

The following table estimates the total revenue to be generated by the retail development on both an annual and one-time basis.

**Table 5.16**  
**Total Revenue Attributed to Development**

<b>One-Time Revenue</b>	
Sales and Use Tax	\$16,749
Total	\$16,749
<b>Annual Revenue</b>	
Property Tax	(\$12,596)
Sales and Use Tax	\$370,577
Total	\$357,981

## 5.4 Cost Versus Revenue

The following tables compare the costs and revenues in both the annual and one-time categories.

**Table 5.17**  
**Comparison of One-Time Costs and Revenues**

Spending Category	Cost	Revenue
Fire Protection <sup>1</sup>	\$2,100,000	N/A
Schools/Sales and Use Tax <sup>2</sup>	\$0	\$16,749
Roads <sup>3</sup>	\$4.6 - \$15.6 million	N/A
<b>Total</b>	<b>\$6.7 - \$17.7 million</b>	<b>\$16,749</b>

<sup>1</sup>The estimate for a new fire house is between \$1.2 and \$2 million. An average cost of \$1.6 million is used here.

<sup>2</sup>Costs are from Schools. Revenue is from Sales and Use Tax.

<sup>3</sup>At the completion of this report, the road study had not been completed; therefore the total cost of road improvements is only an estimate.

**Table 5.18**  
**Comparison of Annual Costs and Revenues**

Spending Category	Cost	Revenue
Administrative Services	\$28,508	-
Fire Protection	\$1,025,154	-
Sheriff	\$639,661	-
Judicial Services	\$2,868	-
Department of Corrections	\$55,668	-
Behavioral Health Services	\$18	-
Social Services	\$5,948	-
Resources Management		
Agency	\$8,999	-
Schools/Sales and Use Tax <sup>1</sup>	\$62,041	\$370,577
Property Tax		(\$12,596)
<b>Total</b>	<b>\$1,828,866</b>	<b>\$357,981</b>

Costs include Retail-Induced and Resident-Induced Demand.

<sup>1</sup>Costs are from Schools. Revenue is from Sales and Use Tax and School Impact Fees.

## Section 6: Alternative D -- North Fork

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Alternative D examines the impacts the casino would have if it were moved to a different location. This alternative looks at the impacts of the development if it were located near North Fork, California. The site is still located in Madera County but in a more mountainous region of the County as opposed to the more developed area where the other three alternatives would be located.

As environmental constraints plague this site, the building program would have to be scaled back if this option were chosen. Instead of the 2,000 slot machines and 60 tables analyzed at the Highway 99 site, this option would only have 275 slot machines and 6 tables. There would be no hotel, gift shop or spa with this alternative. The casino would have a food court/deli, snack bar and coffee shop.

Table 6.1  
**Building Program**

Element	Square Footage
Casino	21,451
Food and Beverage	4,550
Total	26,001

Source: Station Casinos.

There are economic constraints connected with this site as well. A separate report produced by The Innovation Group concerning the economic feasibility of the North Fork location indicates that the remote location of the casino would inhibit earning potential. (See North Fork Gaming Market Assessment.)

### 6.1 Development Impact on Population

As described in the previous alternatives, we used RIMS II to predict the direct, indirect and induced employment created by this alternative.

#### 6.1.1 Construction Employment

For the North Fork alternative, the projected construction spending will be over \$49 million. The following table details the projected employment from this spending. Based on the \$49 million in spending for construction, RIMS II projects that the project will create 351 jobs, with 226 of those being direct employees and 125 being indirect or induced employees.



**Table 6.2**  
**Construction Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	0.71
2. Mining	2.02
3. Utilities	0.16
4. Construction	226.49
5. Manufacturing	13.50
6. Wholesale Trade	4.58
7. Retail Trade	37.56
8. Transportation & Warehousing	5.85
9. Information	2.76
10. Finance & Insurance	2.30
11. Real Estate & Rental & Leasing	2.92
12. Professional, Scientific, & Technical Services	5.91
13. Management of Companies & Enterprises	4.56
14. Administrative & Waste Management Services	5.54
15. Educational Services	0.94
16. Health Care & Social Assistance	11.85
17. Arts, Entertainment, & Recreation	1.27
18. Accommodation & Food Services	12.85
19. Other Services	6.72
20. Households	2.20
21. Total Employment	351

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **6.1.2 Operational Employment**

Operational employment includes those jobs that are generated from the operation of the casino. These impacts will last as long as the casino is in operation. The casino is projected to employ 139 full-time employees and 23 part-time employees or 153 full-time equivalents. Total employment generated by the facility will be 167 of which 153 are direct and 14 are indirect and induced. The following table details the jobs created by the operation of the casino.

Table 6.3  
**Operational Impact on Employment**

Sector	Employment Impact (Jobs)
1. Agriculture, Forestry, Fishing, & Hunting	0.29
2. Mining	0.02
3. Utilities	0.07
4. Construction	0.79
5. Manufacturing	1.78
6. Wholesale Trade	0.90
7. Retail Trade	5.18
8. Transportation & Warehousing	1.11
9. Information	0.83
10. Finance & Insurance	0.62
11. Real Estate & Rental & Leasing	1.43
12. Professional, Scientific, & Technical Services	0.84
13. Management of Companies & Enterprises	1.43
14. Administrative & Waste Management Services	1.37
15. Educational Services	0.29
16. Health Care & Social Assistance	3.59
17. Arts, Entertainment, & Recreation	108.74
18. Accommodation & Food Services	32.58
19. Other Services	4.56
20. Households	0.67
21. Total Employment	167

Source: RIMS II, Bureau of Economic Analysis, Department of Commerce.

### **6.1.3 Population**

As previously done, it is necessary to estimate the number of new residents who will move into Madera County based on the new employment gained from the casino having opened.

### **Construction Employment Impact**

As with the other alternatives, temporary construction jobs are not projected to have any impact on local population growth. All of the jobs created through construction spending are temporary because construction spending is temporary; therefore, it is projected that the local population will not increase due to construction spending.

### **Operations Employment Impact**

Approximately 65% of the Chukchansi's employees are Madera County residents. General commuting patterns indicate that 73.5% of Madera County jobs are worked by Madera County residents. Given the small size of the casino in this alternative and the high level of unemployment in the County, we believe that a greater percentage of employees will come from Madera County in this alternative than Alternative A. We will assume that 73.5% of the employees will come from Madera County.

Of the 73.5% of employees that live in Madera County, we project that very few will move in from other areas given the large number of unemployed persons in the County compared to the number of jobs available. Of course, some of the employees will undoubtedly move in from other areas. For this reason, we project that 10% of the employees who do live in Madera County will do so after moving in from somewhere else.

**Table 6.4**  
**Employees who Live in Madera County**

Total New Employees	167
Percentage of Employees who will live in County	73.5%
Number of Employees who will live in County	123
Percent of Employees who will Move to Madera County	10%
Number of New Resident Employees in Madera County	12

## **New Residents**

If new employees move into Madera, these will not be the only new residents. These employees will in some cases bring families. Using the employee per household values calculated above, we determined the number of new households created by employees moving into the area. Applying the number of persons per household in 2000, we determined the number of new residents in Madera.

**Table 6.5**  
**New Residents in Madera County**

New Employees Moving to Madera	12
Number of Employees per Household	1.2
Number of New Households	10
Number of Persons per Household	3.18
Number of New Residents	32

Source: U.S. Census.

In Alternative D, the development would occur substantially further away from the City of Madera. For this reason, we will assume that the growth in the City is not as substantial as in the other alternatives. We will assume it to be 44% (14 new residents) based on the general level of Madera County's population that is moving into the City of Madera (See Table 3.7). We will assume the City of Chowchilla will still receive 8% of the population.

## **6.2 Cost of Government Services**

The following section provides information on how the new casino will increase the cost of government service provision.

### **6.2.1 Casino Demand**

The new casino will create demands for services just as Alternative A did. These demands will not be as great as with Alternative A because of its smaller size.

### *Fire Protection*

In his March 28, 2008 letter, Chief Mikel Martin recommends two Type III or higher fire engines to be fully staffed (3 FTEs each) at the existing Rancheria Cal fire station, which is near North Fork, in order to meet standards outlined in the County-wide Master Fire Plan. Type III fire engines have a smaller capacity than Type I and would also cost less. Capital costs for fire protection of the casino are listed below.

**Table 6.6**

#### **Capital Costs for Fire Prevention**

Type III or higher Fire Engines (2)	\$800,000
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Source: Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

The new fire engines will require fire engineers. The County has a goal of 3 full-time fire fighter positions per truck. Each position requires 3 people to fill it 24 hours/day 365 days/year. As the station is an existing station fewer volunteers will need to be recruited to assist with fires. These costs are detailed below.

**Table 6.7**

#### **Fire Personnel Costs**

	Units	Cost per Unit	Total
Fire Captains Salary & Benefits	6	\$121,296	\$727,776
Fire Engineers Salary & Benefits	6	\$104,811	\$628,866
Fire Fighters Salary & Benefits	6	\$104,811	\$628,866
Volunteer Memberships	6	\$71	\$426
Sets of Equipment	24	\$1,400	\$33,600
Total			\$2,019,534

Source: *Recommended Proposed Budget for the Fiscal Year Ending June 30, 2008*, Madera County. Interview with Stan Craig, Deputy Chief, Madera County Fire Department, June 4, 2008.

In addition to the above mentioned costs, the Alternative D location has occasionally been threatened by forest fires. Although the annual probability and the cost of such wildfires are difficult to estimate because of the human and weather factors related to fires, the expected cost is certainly greater than zero. Given the remote location of Alternative D, the expected cost would be greater than in the other alternatives which are located in a built-up area of Madera County with better access to fire prevention and fighting capabilities. The existence of a casino in the Alternative D location would make firefighting there more complicated and costly while increased human activity in the area would raise the probability of fire. This additional expected cost would need to be borne by Madera County, the state and the federal government

### *Sheriff*

The Sheriff's department can still be expected to see an increase in call volume with a new casino in town. Assuming that the rate of calls is proportional to the size of the facility, the North Fork casino would make fewer calls for sheriff assistance than the Chukchansi Casino or the casino in Alternative A. Fewer calls require fewer officers to respond to those calls. We will assume that the Sheriff's office will need to increase its deputies by half a position. A position requires 5 sheriff deputies to fill. The following details the cost of filling this position as well as filling a quarter-time sergeant position to oversee these deputies.

**Table 6.8**  
**Sheriff Personnel Costs**

	<b>Sergeant (0.25)</b>	<b>Deputy (2.5)</b>	<b>Total</b>
Salary & Benefits	\$78,316	\$61,031	\$172,157
Equipment	\$12,000	\$22,026	\$58,065
Retirement	\$28,264	\$12,000	\$37,066
Health Insurance	\$8,798	\$8,798	\$24,195
Workers' Compensation Insurance	\$8,480	\$8,480	\$23,320
Uniform Allowance	\$900	\$900	\$2,475
<b>Total</b>	<b>\$136,758</b>	<b>\$113,235</b>	<b>\$317,277</b>

Source: Interview with Sheriff John Anderson, Madera County Sheriff's Department, June 2, 2008.

### *Judicial Services*

Given that we are estimating only one-third the amount of criminal activity in this alternative as in Alternative A, we estimate that the District Attorney's office will not need additional staffing.

### *Department of Corrections*

The cost to the Department of Corrections should also be less than in Alternative A. Assuming the number of arrests per year is proportional to the size of the facility, the North Fork facility would have 3.5 arrests per year given the 24 arrests per year experienced at the Chukchansi facility. To be conservative, we will assume that the facility experiences half the number of arrests that the Chukchansi Casino does. The following details the cost to the Department given this assumption.

**Table 6.9**  
**Correctional Facilities Costs**

Number of Arrests per Year	12
Average Length of Stay (Nights)	23
Cost per Night	\$59
<b>Total</b>	<b>\$16,284</b>

### *Behavioral Health*

As the number of problem gamers in the County is based on the number of adults in the population, the number of new licensed counselors remains the same as in Alternative A.

**Table 6.10**  
**Behavioral Health Personnel Costs**

	Cost per Unit	Total
Licensed Clinician Salary & Benefits (0.7)	\$66,158	\$47,228
Retirement	\$10,141	\$7,239
Health Insurance	\$6,496	\$4,637
Workers' Compensation Insurance	\$205	\$146
Equipment	\$6,101	\$4,355
<b>Total</b>	<b>\$89,101</b>	<b>\$63,606</b>

Source: Interview with Janice Melton, Director, Madera County Behavioral Health Services, June 2, 2008.

#### *Resource Management Agency*

As the traffic engineer has not completed the roads study, the results of that study have not been included here. We have estimated the cost of the road improvements to be proportional to the size of the new facility as compared to Alternative A; therefore, the cost is estimated to be between \$606,187 and \$2,055,763.

#### *Schools*

Under the North Fork Alternative, the number of new students in the school system is estimated to be 7. Current school developments undertaken by the County will accommodate these new students.

**Table 6.11**  
**Number of New Students**

New Population	32
Percentage of School Children in Madera Population	20.9%
<b>New School Population</b>	<b>7</b>

Source: iXPRESS, Claritas, Inc.

### **6.2.2 Total Cost**

The following details the cost of capital improvements to the County of the new development.

**Table 6.12**  
**Estimate of One-Time Casino-Induced Costs**

Fire Protection	\$800,000
Roads	\$675,503 - \$2,290,857
<b>Total</b>	<b>\$1.47 - \$3.09 million</b>

In addition to one-time costs, the casino will be associated with annual increases in costs.

**Table 6.13**  
**Estimate of Casino-Induced**  
**Annual Costs**

Fire Protection	\$2,019,534
Sheriff	\$317,277
Department of Corrections	\$16,284
Behavioral Health	\$63,606
<b>Total</b>	<b>\$2,416,701</b>

**Table 6.14**  
**Estimate of Annual New Resident-**  
**Induced Costs**

Administrative Services	\$4,707
Fire Protection	\$532
Sheriff	\$1,265
Judicial Services	\$710
Department of Corrections	\$1,688
Behavioral Health Services	\$3
Social Services	\$982
Resources Management Agency	\$1,486
Schools	\$10,592
<b>Total</b>	<b>\$21,966</b>

## 6.3 County Revenue from Casino

Revenue to the County from this alternative will be significantly lower than that of Alternative A.

### 6.3.1 Memorandum of Understanding Revenue

The Memorandum of Understanding signed by the Tribe and the County only applies to Alternative A. It is assumed that if Alternative D were the chosen alternative that the Tribe and the County would negotiate a similar yet proportional agreement based on the sizing of the facility. Given these assumptions, we posit that the Tribe would make the following payments for this alternative location.



Table 6.15

**Memorandum of Understanding Revenue**

		With CPI Adjustment on July 1, 2008
<b>Non-Recurring Contributions</b>		
Public Safety Resources Contribution	\$252,358	\$281,218
Transportation Resources Contribution	\$527,119 - \$1,976,695	\$587,342 - \$2,202,697
Road Contribution Consistent with County Ordinance	\$79,068	\$88,161
Recreation Contribution	\$26,356	\$29,387
School Contribution	\$19,767	\$22,007
Legal Fees Reimbursement	\$6,589	\$6,589
Total	\$ .9 - 2.4 million	\$1.70 - \$2.63 million
<b>Recurring Contributions</b>		
North Fork Rancheria Charitable Foundation Contribution <sup>1</sup>	\$26,356	
North Fork Rancheria Economic Development Foundation <sup>1</sup>	\$32,945	
North Fork Rancheria Educational Foundation <sup>1</sup>	\$52,712	
North Fork Unincorporated Area Foundation <sup>1</sup>	\$32,945	
<b>County Services Contributions</b>		
Workforce or Housing programs	\$32,945	
Sheriff	\$323,682	
Fire	\$480,570	
Behavioral Health	\$6,589	
Open Space/Parks	\$9,225	
Public Safety Support	\$13,178	
Public Facilities Budget	\$65,890	
City of Madera <sup>1</sup>	\$32,945	
City of Chowchilla <sup>1</sup>	\$13,178	
Total	\$1,123,160	

**6.3.2 Tax Revenue**

The following section breaks down the tax revenue to be expected from the casino as well as the new residents.

**Property Tax***Casino Property Tax*

Under this Alternative, the casino will be developed on land that is already in trust so that no property will be removed from the tax rolls. There will be no impact to property taxes from the land the casino will sit on.

*New Resident Property Tax*

New housing already constructed or under development will accommodate the expected increase in population created by this alternative. (See Section 7: Land Development Pattern.) As such, there are no additional property taxes expected to be generated by this development.

## Sales and Use Tax

Using RIMS II, output in the retail sector of the economy can be calculated. The following table details the output in terms of dollars spent in the retail sector and the sales and use tax associated with that spending for both the one-time construction spending and the recurring operation spending.

**Table 6.16**  
**Sales and Use Tax Revenue**

Retail Sector Output for Construction Spending (one-time)	\$4,338,854
Retail Sector Output for Operational Spending (annual)	\$480,538
Sales Tax Rate for Madera County	0.50%
Sales Tax on Construction Spending (one-time)	\$21,694
Sales Tax on Operational Spending (annual)	\$2,403

Source: California Board of Equalization

## Hotel Tax

As there is no hotel included in the North Fork Alternative, the hotel tax revenue collection will be minimal. Because this casino is significantly smaller than even Alternative B, we do not believe it will attract as many overnight guests as Alternatives A or even B.

### 6.3.3 Total Revenue

The following table details the total revenue to be expected to be generated by the casino on both an annual and one-time basis.

**Table 6.17**  
**Total Revenue Attributed to Casino**

<b>One-Time Revenue</b>	
Memorandum of Understanding	\$1.70 - \$2.63 million
Sales and Use Tax	\$21,694
Subtotal	\$1.72- 2.62 million
<b>Annual Revenue</b>	
Memorandum of Understanding <sup>1</sup>	\$932,079
Property Tax	\$0
Sales and Use Tax	\$2,403
Subtotal	\$934,482

<sup>1</sup>Those MOU payments earmarked for charitable foundations are not included here as these funds are not under the control of the County.

## 6.4 Cost Versus Revenue

The following two tables provide a side-by-side comparison of the costs and revenues to the County. The first chart details one-time costs and revenue while the second deals with annual costs and revenue. The primary gap between costs and revenues reflects increased cost assumptions related to Fire Protection. An MOU that provides for the recommended protection levels would yield a closer balance.

**Table 6.18**  
**Comparison of One-Time Costs and Revenues**

Spending Category	Cost	Revenue
Fire Protection <sup>1</sup>	\$800,000	\$281,218
Roads <sup>2</sup>	\$675,503 - \$2,290,857	\$675,503 - \$2,290,857
Recreation <sup>3</sup>	\$29,387	\$29,387
Schools/Sales and Use Tax <sup>3,4</sup>	\$22,007	\$43,702
Legal Fees <sup>3</sup>	\$6,589	\$6,589
<b>Total</b>	<b>\$1.53 - \$3.15 million</b>	<b>\$1.036 - \$2.652 million</b>

<sup>1</sup>The difference between cost and revenue for fire protection is \$518,782. Annual debt service at 4.25% for 30 years is \$30,919, including coverage. Covered by annual MOU payment for fire protection.

<sup>2</sup>At the completion of this report, the road study had not been completed; therefore the total cost of road improvements is only estimated based on the MOU.

<sup>3</sup>The MOU calls for a contribution of this amount and it is assumed the County will use the entire amount.

<sup>4</sup>Cost is from Schools. Revenue is from Sales and Use Tax and MOU contribution.

**Table 6.19**  
**Comparison of Annual Costs and Revenues**

Spending Category	Cost	Revenue
Administrative Services <sup>1</sup>	\$4,707	\$75,115
Fire Protection <sup>1,4</sup>	\$2,020,066	\$449,651
Sheriff <sup>1,6</sup>	\$318,542	\$336,860
Judicial Services	\$710	<sup>2</sup>
Department of Corrections	\$17,972	<sup>2</sup>
Behavioral Health Services <sup>1</sup>	\$63,609	\$6,589
Social Services <sup>1</sup>	\$982	\$32,945
Resources Management Agency	\$1,486	<sup>2</sup>
Schools/Sales and Use Tax <sup>3</sup>	\$10,592	\$2,403
Property Tax	\$0	\$0
County Payments to Cities <sup>5</sup>	\$46,123	\$46,123
<b>Total</b>	<b>\$2,484,790</b>	<b>\$949,692</b>

Costs include Casino-Induced and Resident-Induced Demand.

<sup>1</sup>MOU Payment

<sup>2</sup>Covered in excess of \$75,114 payment above.

<sup>3</sup>Cost is from Schools. Revenue is from Sales and Use Tax.

<sup>4</sup>Annual Debt Service for fire protection capital costs has been subtracted from MOU revenue.

<sup>5</sup>The MOU calls for a \$32,945 payment to the City of Madera and \$13,178 payment to the City of Chowchilla.

<sup>6</sup>Sheriff revenue includes MOU payments directly to the sheriff's office and those MOU payments for Public Safety Support.

## Section 7: Land Development Pattern

In this section, we project the increased demand for development and where in the County that development will occur. We will separate the development into two categories: residential and commercial. The commercial category includes retail, office and industrial businesses.

### 7.1 Residential Development

#### 7.1.1. Existing Development

The existing housing stock in Madera County totaled 49,372 total units on January 1, 2008. On average 10.17% of these, or 5,019 in 2008, were vacant. Nearly 60% of the total housing units were located in the unincorporated areas of the county. More than 14% of these homes were vacant, while less than 5% in incorporated areas were vacant.

**Table 7.1**  
**Existing Total Residential Housing Units and Vacancy Rates – Madera County**

	Total Housing Units			Percent Vacant			Vacant Units		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
Chowchilla	3,353	3,670	3,884	5.49	5.94	5.54	184	218	215
Madera	14,997	16,034	16,418	4.34	4.34	4.34	651	696	713
Balance Of County	28,289	28,756	29,070	14.07	14.07	14.07	3,980	4,046	4,090
Incorporated	18,350	19,704	20,302	4.55	4.64	4.57	835	914	928
County Total	46,639	48,460	49,372	10.33	10.24	10.17	4,816	4,961	5,019

Note: Data as of January 1 each year.

Source: California Department of Finance Demographic Research

From the total number of residential units listed above, the following table shows a total of more than 5,300 multi-family units in Madera County in 2008. The vacancy percentage is only reported for the total housing units, so we are unable to make an assumption of the vacancy level of multi-family units alone.

**Table 7.2**  
**Madera County Multi-Family Units 2008**

	2 TO 4	5 PLUS
Chowchilla	272	304
Madera	1,557	2,160
Balance Of County	605	417
Incorporated	1,829	2,464
County Total	2,434	2,881

Note: Data as of January 1 each year.

Source: California Department of Finance Demographic Research

Single family homes sales in 2007 were down nearly 40% from 2006. The median sale price for single family homes in 2007 was \$295,000, down 10.6% from 2006.

**Table 7.3**  
**Madera Single Family Home Sales**

Sales			Median Price		
2006	2007		2006	2007	
600	367	-38.80%	\$329,990	\$295,000	-10.60%

Source: California Building Industry Association

According to the Madera Housing Authority (phone interview June 13, 2008) the average monthly rental rate for an apartment is \$660 for a two-bedroom and \$1,200 for a three-bedroom.

### **7.1.2. Proposed Development**

At present, the number of housing units permitted is declining from a peak in 2005. Permits issued in 2007 totaled 533, down from 2,379 in 2005. The permits issued in the first quarter of 2008 show a 62% decline compared to the same period in 2007. City and County planning officials acknowledge the slowdown in residential permits issued, but counter that the sharp decreases seen are in relation to years of high growth with a peak in 2005. They note that they are still issuing permits, which they consider a good sign.

**Table 7.4**  
**New Housing Units in Building Permits Issued - Madera Metro Area**

	Single Family	Multi Family	Total	% change from previous period
2004	1,714	207	1,921	
2005	2,133	246	2,379	24%
2006	1,282	109	1,391	-42%
2007	510	23	533	-62%
1Q 2007	149	8	157	
1Q 2008	59	0	59	-62%

Source: California Building Industry Association

There is currently an 8-10 month backlog of housing (unrented/unsold) in the County. In addition, there are a number of uncompleted housing starts. These subdivisions look completely finished from the exterior, but have only studs in the interior. If new people moved to the area, these homes would quickly be finished and available for occupancy.

With each news article in the Fresno Bee about the potential casino in Madera, the County Planning office would receive 10-15 phone calls from developers interested in residential development in that area. There have been 6-8 multifamily housing developers, which could accommodate employees with lower salaries, proposing projects on the north side of Madera near (north and east of) the project site. Their proposals have dissolved with each delay in the

progress of the casino, but the county planners feel confident that offers would return as soon as the land is in trust and plans move forward on the construction of the Madera casino.

Many developers are in the process of filing their paperwork for various developments and will wait for the next economic upturn to begin construction. The County Planning Department is anticipating a 14-month period of uncertainty where little construction will be started but between 34,000 and 38,000 units are planned throughout the county, many of which are located along Hwy 41 just north of Fresno County. Residential as well as commercial development is expected to be contained between HWY 99 and HWY 41, while areas west of HWY 99 will be reserved for agricultural use. The following table identifies several developments which are several steps into the process.

**Table 7.5**  
**Residential Development in Unincorporated Areas of Madera County**

Project Name	Acres	Residential	Status
		Units	
North Shore at Millerton Lake	2,238	2,522	Final EIR in Progress
Gateway Village	2,392	6,455	Project Approved at Board of Supervisors in Sept 2007
Gunner West	1,135	3,014	New Partner Sun Cal - New Specific Plan Pending
Tesoro Viejo - McCaffery	1,574	4,600	Draft EIR Published
Tra Vigne	162	432	EIR to Begin
Total	7,501	17,023	

Source: County of Madera, Planning Department

In addition to the housing market backlog identified by the county planners, the City of Madera has a total of 4,526 residential subdivision lots which are planned. Of these, 1,423 are completed finished and are available for purchase and occupancy.

**Table 7.6**  
**Residential Subdivision Development Activity**

	# of Units Planned	Improved lots	Vacant Improved lots	SFD Permits Issued	Remaining
City of Madera	4,526	4,261	1,423	2,838	1,689

Source: City of Madera, Planning Department

Alternative A is estimated to draw approximately 263 new households to the County (84 to unincorporated areas). With each of the subsequent scenarios, the impact on the housing market diminishes. According to County Planning officials, the existing housing stock alone would be able to easily absorb the addition of 200-300 households.



## 7.2 Commercial Development

In this section, we examine commercial development which includes retail, office and industrial spaces.

### *Retail Development*

Approximately 1.5 million square feet of retail development has been approved in and near Madera. Construction of the first project listed below is nearly complete. The second two projects will be located across Highway 99 from the proposed casino.

- A Lowes will anchor The Commons at Madera Fair located at southeast corner of Schnoor and Cleveland avenues. The Lowes is expected to cost \$18.5 million and open in the third quarter of 2008. The entire center will offer 300,000 square feet of retail.
- Gateway Galleria at the southeast corner of Highway 99 and Avenue 17 will offer more than 450,000 square feet of retail space. This shopping center is expected to be anchored by a Super Wal-Mart.
- At the northeast corner of State Route 99 and Avenue 17, Madera Town Center will offer 800,000 square feet of new retail. The center will have 2,000 feet of linear frontage on Highway 99. It will be constructed in two phases and is scheduled for a 2009 opening. A Target store is expected to be the anchor for this shopping center.

The City of Chowchilla has little in terms of existing retail, but there is some development that is in the planning stages. A local car dealership recently opened its operations at a 31-acre parcel in Chowchilla. Figtree Plaza, which will contain a Save Mart Supermarket and Walgreens, is under construction. A Rite-Aid, Taco Bell and KFC are being planned along with a large mini-storage structure.

In all of the scenarios, the proposed casino development is expected to create jobs within the retail sector. Aside from those positions in the arts, entertainment and recreation category, the two sectors estimated to see the largest increases in employment opportunities due to the casino opening would be the retail trade and accommodation and food services categories (Tables 3.4, 4.3, 5.4 and 6.3). For Alternative A, 88 of these jobs are in the retail sector. The retail development described above could easily provide these new jobs. Some additional demand for food service jobs outside of the casino will also be created. Restaurant developments tend to occur along side retail trade, and we expect restaurants within the retail developments outlined above will provide these jobs.

As noted above, the planned retail at the Avenue 17/Highway 99 intersection could accommodate the new jobs that would be demanded from the gaming patron base. Retail and food and beverage facilities may also be needed in the market to accommodate casino and non-casino employees that become new residents of the area, though it should be noted that these new employees are expected to fill residential developments that are independent of the casino, and such retail developments would be planned for the communities as a whole, and not merely the casino-related employee element of the total. Therefore, with an estimated 34,000 – 38,000 new single family dwellings in the process of being developed in Madera County, the demand

for new retail space will continue to increase. It is not expected that the gaming facility will bring enough new persons to the area to magnify the existing retail growth induced by resident demand.

In all of the scenarios, we project that the growth in retail space will continue to focus in the City of Madera primarily and the City of Chowchilla secondarily.

#### *Hospitality Development*

While Alternative A includes a hotel, other hotel developments are being completed in the area. A 78-room Hampton Inn and Suites at Ave 17 and HWY 99 is near completion. Madera Springhill Suites (a division of Marriott hotels) with a restaurant is opening across from Madera Community Hospital in early 2009. A 63-room Holiday Inn Express will open in Chowchilla in the summer of 2008.

#### *Office Development*

Most of the office buildings in Madera County are in and around the City of Madera. The following provides a listing of the currently vacant office properties in the County and their sizes.

**Table 7.7**  
**Vacant Office Space in Madera County**

City	Name	Address	Sq. Ft.
Madera	Ave 17 Office Space	26045 Avenue 17, Ste. A	907
	Ave. 17 Office Ste. B	26045 Ave. 17, Ste. B	447
	720 Mission Office	720 North I Street	1,000-8,392
	730 Mission Office	730 North I Street	1,000-10,200
	750 Mission Office	750 North I Street	1,000-9,440
	760 Mission Office	760 North I Street	1,000-4,800
	780 Mission Office	780 North I Street	1,000-4,273
	28th Aero Squadron Ind.		
	Park Bldg. 103	19500 Road 28 1/2	6,400
	2000 N. Schnoor Bldg.	2000 N. Schnoor #102	2,424
	Bronco Professional Park	Almond Ave. & Emily Way	18,812
	2531 Howard Rd.	2531 Howard Rd.	4,300
	The Courtyard	1816 Howard Road	1,300
	Ave 17 Office Space	26045 Avenue 17, Ste. A	907

Source: Madera County Economic Development Commission (June 16, 2008)

We anticipate only a slight increase in the demand for office space as a result of any of the scenarios. Very little of the employment expected to be generated will require office space—about 108 jobs resulting from Alternative A in sectors 9, 10, 11, 12, 13 and 19 and less in the other alternatives (See Tables 3.4, 4.3, 5.4 and 6.3). What little is needed we anticipate will be developed in the incorporated areas of the County, mainly resulting from the service needs of the residential development. Given the limited amount of space that is needed, the lack of immediate proximity needed to either residences or the casino, it is too speculative to estimate where the demand for the space would be in the County.

### *Industrial Development*

Most of the industrial development in Madera County is in and around the City of Madera. The following provides a listing of the currently available properties in the County and their zoning and sizes.

Table 7.8  
**Vacant Industrial Development in Madera County**

City	Name	Address	Zoning	Sq. Ft.
Madera	Massetti Building	Ave 12 1/2	Heavy Industrial	8,000
	Ave 15 1/2 Building	28810 Ave 15 1/2	Industrial	2,500
	28th Aero Squadron Ind. Park Bldg. 210B	19500 Rd. 28 1/2	Industrial	6,500
	Building A (North)	Falcon Drive	Industrial	18,006 - 72,025
	Building B (South)	Falcon Drive	Industrial	18,006 - 72,025
	3469 Yeager	3469 Yeager, Suite 101	Industrial	10,000
				17,375 +/- (3 bldgs)
	2890 Falcon	2890 Falcon Drive	Industrial	
	Falcon Warehouse	2880 Falcon Drive	Industrial	16,000 +/-
	Granada Business Park	Granada & Mitchell Ct. (NEC)	Light Industrial/Office	2,870-10,413
	Alquist Industrial Complex	Falcon Drive	Light Industrial/Office	27,500
	Old Hwy 99	Ave 24 1/2	Industrial	6,000
Chowchilla	Robertson Industrial Bldg.	Robertson Blvd. at Avenue 23.5	Industrial	7,200

Source: Madera County Economic Development Commission website (June 16, 2008)

The City of Chowchilla has very little built industrial space. It does have a number of excellent sites for industrial development and is on a short-list for consideration by a large industrial developer. .

There will be almost no demand for additional industrial space in the County as a result of the casino or retail developments. What little there might be from 68 new jobs in sectors 1, 2, 3, 4, 5, 6 and 8 for Alternative A (See Table 3.4) can be absorbed by the vacant units in existing industrial spaces in the County or in existing industrial operations. It is assumed that the most likely scenario will be that the casino will generate new jobs at existing industrial locations as opposed to generating new industrial operations. These jobs would be dispersed among all of the current industrial operations in Madera County.

## Section 8: Impacts to the City of Madera

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The preceding sections focused on the impacts to Madera County. Given the proximity of the proposed development in Alternatives A, B and C to the City of Madera, we assess the impacts to the City in this section. Alternative D will also have impacts on the City, but these are expected to be smaller given the distance between the development and the City. The following section describes these impacts.

### 8.1 Development Impact on Population

In Alternatives A, B and C, the development is situated in the County immediately adjacent to the City of Madera. In Alternative D, the development is located across the County from the City.

For Alternatives A, B and C, we projected that 60% of development-induced residents would move into the City of Madera. We projected that Alternative D will cause growth closer to typical City growth because it is located further from the City. For this reason, we have projected 44% of the County's residents will move to the City under Alternative D. Under all of the alternatives, we projected that 8% of the new resident population will move into the City of Chowchilla (See Section 3.1.3.).

Given these projections, the number of new residents in each of the Alternatives is listed below.

Table 8.1  
**New Residents in City of Madera**

	County Population	City Population
Alternative A	836	502
Alternative B	534	320
Alternative C	194	116
Alternative D	32	14

### 8.2 Cost of Government Services

The following section details the cost to the City of adding this population.

#### **8.2.1 Development Demand**

In Alternatives A, B and C, the development is located just outside the city limits. Because the development is located outside the city limits of the City of Madera, most development-induced demands will be borne by the County. Under Alternative D, no development-induced impacts are expected as the casino would be located on the other side of the County from the City of Madera.

### *Road Costs*

The only demand that may impact the City would be for upgrading the road network leading to the developments in Alternatives A, B and C. It is possible that a city road might need to be widened or a traffic signal installed at the intersection of Avenue 17 and Golden State Boulevard. A traffic study is currently under development to determine those impacts.

### **8.2.2 New Resident Demand**

The following section details the costs to the City of Madera for the new residents who are projected to move into the City as a result of the new development (See Table 8.2.).

### *Capital Costs*

It is not expected that there will be any need for capital improvements under any of the Alternatives. Under Alternative A where the largest population gain is expected, it is projected that only 502 new residents will move into the City as a result of the new development. The new residents equal only 0.93% of the current population.

### *Operational Costs*

Despite low capital cost investment, the City's operational costs are expected to rise with each new resident. To determine the cost of these new residents, the City's current annual expenditures were analyzed. The following chart summarizes the City of Madera's spending.

Table 8.2

#### **City of Madera Expenditures**

City Administration	\$2,100,875
Finance Department	\$749,965
City Attorney	\$410,365
Police	\$8,905,299
Fire	\$2,788,084
Community Development	\$4,040,804
Parks and Recreation	\$2,421,256
Public Works	\$3,571,851
Grant Oversight	\$389,969
Total	\$25,378,468

\* Does not include capital outlays

Source: 2007-2008 City of Madera Budget,  
Revised budget per memo of 8/16/2007.

Operational costs have nearly doubled since 2004, primarily due to increases in costs of benefits, but also due to creation of new positions.

**Table 8.3**  
**City of Madera Expenditure Growth**

	2004-2005 Budget	2005-2006 Actual	2006-2007 Estimated	2007-2008 Adopted
Operational Expenses	\$13,019,484	\$19,022,667	\$22,416,983	\$25,378,468
Change		46.1%	17.8%	13.2%

Source: 2007-2008 City of Madera Budget, Revised budget per memo of 8/16/2007; 2004-2005 City of Madera Budget.

On a per capita basis, the City of Madera spends \$468.28 annually for each City resident.

**Table 8.4**  
**City of Madera**  
**Per Capita Spending**

2007 Budget	\$25,378,468
2007 Population	54,195
Per Capita Spending	\$468.28

Source: 2007-2008 City of Madera Budget, Revised budget per memo of 8/16/2007.

The new City of Madera residents for each Alternative will cost the City the following amounts for operational costs.

**Table 8.5**  
**Cost for New Residents**

	City Population	Annual Cost to City
Alternative A	502	\$235,077
Alternative B	320	\$149,850
Alternative C	116	\$54,320
Alternative D	14	\$6,556

The recent economic downturn has slowed the growth of City of Madera's expected future spending. Due to revenue constraints, the City Administrator is planning on maintaining 2007-2008 operating levels for 2008-2009, with no COLA adjustment, which is an effective reduction in services. There will be a soft hiring freeze, only hiring for fire and public safety positions. The capital replacement schedule will be pushed back one year which will affect the city's fleet. Collective bargaining agreements will be renegotiated in 2009 (general employees) and in 2010 (public safety). These will further increase salaries/benefits and therefore operating costs.

## 8.3 City Revenue from Development

Along with additional costs, residents will bring in additional revenue to the City. There are two forms of revenue. The first is in the form of payments from the Tribe and the second is through payments made by the individual residents to the City.

### 8.3.1 Memorandum of Understanding Revenue

The Tribe has a Memorandum of Understanding with the City of Madera regarding payments to be made to the City by the Tribe. In this agreement under Alternative A, the Tribe has agreed to pay the City several one-time payments which total \$6.285 million to \$10.285 million as well as several annually recurring payments which total \$1.075 million. The purpose of each of the payments is outlined in the following table.

Table 8.6  
City of Madera MOU

<b>One-Time Payments</b>	
Law enforcement	\$200,000
Road and transportation improvements	\$885,000
Additional improvements for County roads annexed into the City	Up to \$4,000,000
Local land use planning	\$200,000
Water conservation and maintenance for City golf course	\$2,500,000
Madera East Side Youth recreational opportunities	\$2,000,000
Public safety training	\$500,000
Subtotal	\$6,285,000 - \$10,285,000
<b>Recurring Payments</b>	
Law enforcement (six additional law enforcement officers)	\$675,000
Downtown revitalization	\$100,000
Air quality resources (bus system)	\$50,000
City of Madera general government funding	\$250,000
Subtotal	\$1,075,000
<b>Total</b>	<b>\$7,360,000 - \$11,360,000</b>

\* \$640,000 in first year, \$675,000 in following years.

Source: MOU between City of Madera, CA and the North Fork Rancheria of Mono Indians of California, signed October 18, 2006.

The Tribe's MOU with the County has a goal of hiring County residents to fill 50% of its jobs. The MOU with the City states a goal of hiring 33% of the County hires from City residents. Prior to opening, the Tribe shall offer training to help City residents qualify for positions, according to the MOU.

The Tribe has also signed an MOU with the Madera Irrigation District (MID). This includes annually recurring payments of \$11,500 due to loss of taxes by putting the land into Trust. Additionally an annual payment of \$36,000 for aquifer recharge will compensate for annual water usage totaling 450 acre feet at the Trust property. If water use exceeds this rate, the Tribe will have to pay MID the market rate for overusage.

Also, as part of the MOU with the MID, the Tribe agrees to establish arrangements with local providers for the sale and purchase of local agricultural products at the facility and establish an agricultural demonstration project for educational purposes on the Trust property.



### 8.3.2 Tax Revenue

New residents will pay sales and use taxes which in turn will fund operations in the City. The following table calculates the per capita revenue received by the City from sales and use taxes.

**Table 8.7**  
**Per Capita Revenue from Sales and Use Taxes**

2007 Budget	\$6,629,668
2007 Population	54,195
Per Capita Revenue	\$122.33

Source: Source: 2007-2008 City of Madera Budget, Revised budget per memo of 8/16/2007.

Based on the current level of revenue in the City, each resident pays \$122.23 in sales and use tax that goes to the City. Depending on the new population projected to move into the City, each Alternative has a different level of revenue received from sales and use taxes. The following table documents this revenue.

**Table 8.8**  
**City of Madera Tax Revenue**

	City Population	City Revenue from Taxes
Alternative A	502	\$61,361
Alternative B	320	\$39,194
Alternative C	116	\$14,225
Alternative D	14	\$1,722

### **8.3.3 Total Revenue**

Total annual revenue for each Alternative, including per capita revenue from sales and use taxes and recurring payments, is demonstrated below. Though the City's MOU only applies to Alternative A, proportional payments have been calculated for Alternatives B and D for illustration.

**Table 8.9**  
**Total Revenue**

	<b>Revenue from Taxes Only</b>	<b>MOU</b>	<b>Total</b>
Alternative A	\$61,361	\$1,075,000	\$1,136,361
Alternative B	\$39,194	\$860,000	\$899,194
Alternative C	\$14,225	\$0	\$14,225
Alternative D	\$1,722	\$141,664	\$143,386

## 8.4 Cost Versus Revenue

It is assumed that recurring payments for law enforcement, downtown revitalization, and air quality resources for the bus system, totaling \$825,000, will be used in their entirety to offset costs for those services. The following table summarizes the annual cost of other government services and revenue for each of the Alternatives.

**Table 8.10**  
**Comparison of Annual Costs and Revenues**

	<b>Cost</b>	<b>Revenue</b>
Alternative A	\$1,060,077	\$1,136,361
Alternative B	\$809,850	\$899,194
Alternative C	\$54,320	\$14,225
Alternative D	\$115,274	\$143,386

## **Section 9: Impacts to the State of California**

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This section describes the impacts of the preferred and alternative developments on the State of California.

### **9.1 Development Impact on Population**

We assume that no new residents, which move to Madera County for jobs created by the Alternatives, are from out of state, but rather from other areas within the State of California. Therefore, these preferred and alternative developments would have no impact on the population of the State of California.

### **9.2 Cost of Government Services**

As there is no expected net population change within the State of California due to the Alternatives, no population-induced costs will be incurred by the State. Potential casino-induced costs include those placed on the California Highway Patrol as well as the State's Office of Problem Gambling.

#### *California Highway Patrol*

The California Highway Patrol (CHP) has jurisdiction on all state highways and county roadways and with any vehicular-related incident. The city police are responsible for traffic incidents within incorporated areas. The CHP responds to incidents on private property involving vehicular theft, vehicular collision, drunk driving, a serious injury or fatality while using a motor vehicle.

The CHP has 8 divisions. The Central Division, in which Madera County is located, has 15 Area Offices, 6 Resident Posts, 2 Commercial Inspection Facilities which employ 667 Uniformed Officers and 226 Non-Uniformed Personnel.

The Madera Area Office has one commander, 3 field supervisors, and 30 officers. The recommended ratio of field supervisors to officers is 1:8, which implies that the Madera Area Office is slightly understaffed. This office covers primarily the valley floor of Madera County along with some of the foothills. A recent expansion created a new Area Office which covers the area from the border in the foothills to Yosemite. This office has 16-18 officers.

The CHP has not responded to any incidents on the property of Chukchansi Casino since its opening. Traffic has increased on the highway leading to Chukchansi Casino, and hence traffic related incidents have also increased. There are several attractions accessed by this route in addition to the casino including Yosemite and recreational lakes. Additionally the population in the foothills has increased since the opening of the casino. These factors dilute any direct causation to increased CHP response on roadways due to the casino.

According to Lieutenant Commander Dave Paris (interviewed by phone on May 22, 2008), increased traffic generally results in increased incidents to which the CHP would respond. The CHP was unable to estimate if additional staffing would be needed as a result of the proposed casino near Madera.

#### *Office of Problem Gambling*

The Office of Problem Gambling is housed within the California Department of Alcohol and Drug Programs. In Fiscal Year 2007-2008, the budget for this office totaled \$3.529 million funded by the Indian Gaming Special Distribution Fund. As listed on their website, legislative mandates for the office include offering the following:

- A toll-free telephone service for immediate crises management and containment with subsequent referral of problem and pathological gamblers to health providers who can provide treatment for gambling related problems and to self-help groups.
- Public awareness campaigns that focus on prevention and education among the general public including, for example, dissemination of youth oriented preventive literature, educational experiences, and public service announcements in the media.
- Empirically driven research programs focusing on epidemiology/ prevalence, etiology/causation, and best practices in prevention and treatment.
- Training of health care professionals and educators, and training for law enforcement agencies and nonprofit organizations in the identification of problem gambling behavior and knowledge of referral services and treatment programs.
- Training of gambling industry personnel in identifying customers at risk for problem and pathological gambling and knowledge of referral and treatment services.

Though an increase in the supply of casino gaming might increase the utilization of the services provided by this office, there is no research available which identifies or quantifies the correlation. Therefore suggesting a dollar amount as an impact is too speculative.

## **9.3 State Revenue from Development**

### **9.3.1. Gaming Revenue Sharing**

The compact between the State of California and the North Fork Rancheria of Mono Indians of California was signed in April 2008. The compact authorizes the Tribe to operate up to 2,500 slot machines at a single facility on the 305 acre parcel in Madera, CA. This compact limits the size of the resort casino and hotel to a 280,000-square-foot footprint with 2,000 slot machines (Section 11.8.9). An option to expand the facility and operate up to 500 additional slot machines during the 20-year term of the compact is allowed if the Tribe's existing agreement with the County of Madera is amended to cover any additional off-reservation impacts to the environment.

The Compact requires the Tribe to share gaming revenues with the State of California through a graduated percentage of net win from the operation of both slot machines and banked card

games. The state will receive 13.5% of the first \$100 million of net win, 18% of amounts between \$100 and \$200 million in net win, and 22% of net win over \$200 million.

**Table 9.1**  
**Revenue Contribution (%)**  
**to the State of California\***

<b>Annual Net Win</b>	<b>State %</b>
\$0 - \$100 million	13.5%
Over \$100 million - \$200 million	18%
Over \$200 million	22%

\* Payments to County pursuant to MOU are deducted from contributions to State.  
Source: Tribal-State Compact Between the State of California and The North Fork Rancheria of North Fork Indians of California.

Alternative D is located on Trust Land and would not be subject to revenue sharing contributions in a Compact with the State. An estimate of the Tribe's revenue contribution to the State in the casino's first year of operation is outlined below for Alternative A and Alternative B.

**Table 9.2**  
**Annual Revenue Contribution**  
**to the State of California\***

	<b>Alternative A</b>	<b>Alternative B</b>
State Share*	\$29,236,676	\$21,054,299

Source: Tribal-State Compact Between the State of California and The North Fork Rancheria of North Fork Indians of California

\*Based on The Innovation Group's gaming revenue estimate for first full year of operation

\*Payments to County pursuant to MOU are to be deducted from contributions to State.

As outlined in the Compact, the Wiyot Tribe will receive revenue payments from the gaming facility proposed to be operated by the North Fork Mono Rancheria in Madera County in exchange for foregoing its right to game on its tribal lands along Humboldt Bay in Northern California. The revenue sharing schedule is outlined in the following table. This would result in approximately \$5.1 million under Alternative A and \$3.7 million under Alternative B.

**Table 9.3**  
**Revenue Sharing Trust Fund for the Benefit**  
**of the Wiyot Tribe**

<b>Annual Net Win*</b>	<b>Wiyot %</b>
\$0 - \$100 million	2.5%
Over \$100 million - \$200 million	3%
Over \$200 million	3.5%

Source: Tribal-State Compact Between the State of California and The North Fork Rancheria of North Fork Indians of California.

### **9.3.2. Sales and Use Tax**

Each of the development alternatives explored is expected to generate construction spending during an initial period as well as annual operational spending. From this spending the State of

California receives 7.25% of the 7.75% sales and use tax imposed in Madera County. The following table identifies the sales and use tax revenue to the State from each of the alternatives.

**Table 9.4**  
**Sales and Use Tax Revenue**

	Alternative A	Alternative B	Alternative C	Alternative D
Retail Sector Output for Construction Spending (one-time)	\$26,177,953	\$22,288,033	\$3,349,858	\$4,338,854
Retail Sector Output for Operational Spending (annual)	\$8,864,319	\$5,847,226	\$74,115,302	\$480,538
Sales Tax Rate in Madera County to the State	7.25%	7.25%	7.25%	7.25%
Sales Tax on Construction Spending (one-time)	\$1,897,902	\$1,615,882	\$242,865	\$314,567
Sales Tax on Operational Spending (annual)	\$642,663	\$423,924	\$5,373,359	\$34,839

Source: California Board of Equalization

## 9.4 Cost Versus Revenue

The costs to the State include impacts on the California Highway Patrol and the Office of Problem Gambling. The costs for each of these are difficult to estimate, but the revenue sharing contributions from the proposed casino in addition to the sales and use tax revenue are expected to sufficiently address the costs.



## Section 10: Conclusion

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The potential impacts of the various scenarios vary in degree, but generally the greater the positive impact, such as new jobs and revenue to the County, the larger the negatives such as costs to the County. (See Table 10.1 below.)

It should be noted that the proposed staffing ratio for fire development is a significant increase over that recommended in the previous Socioeconomic Impact Assessment (2005). Therefore costs have increased to a level beyond that supported by the County MOU. For Alternative A, the County MOU provides \$1.2 million in annual payments for fire protection. The fire protection staffing proposed in this document totals more than \$2.3 million for annual casino-induced demand at 2007-2008 wage rates.

The recommended staffing for the Madera County Behavioral Health Services has increased due to new research on prevalence rates. The cost of the proposed staffing (\$235,000) has exceeded the revenue provided in the County MOU (\$50,000).

Recurring payments outlined in the County MOU are not adjusted annually for inflation until after the opening of the casino. Continual increases in wages for each of the governmental departments will cause the total casino-induced and population-induced costs to exceed payments outlined in the County MOU as time progresses. For example, the current casino-induced costs (excluding population-induced costs) imposed on the Sheriff's Department total \$634,554, which exceeds the \$515,000 annually recurring payment in the MOU (\$415,000 to the Sheriff's Department and \$100,000 for public safety support).

The combination of these three items results in annual costs to the County which exceed annual revenues to the County for each of the alternatives, with the exception of Alternative C.

In terms of the City of Madera, it is projected that for Alternatives A, B and C more new residents will move into the City than typically would be expected from increases in County population. The new population is expected to increase City spending, but it will also increase City revenues. The following table provides a comparison of spending and revenue for the City for each of the Alternatives. In the case of the City, annual revenues exceed annual costs.

In terms of land use development impacts, none of the alternatives is projected to impact residential, retail, office or industrial development such that demand could not be satisfied by existing construction.

Table 10.1  
**Impact Comparison for All Alternatives**

	Alternative A - Proposed	Alternative B - Reduced Intensity	Alternative C - Retail	Alternative D - North Fork
Square Footage	493,010	198,990	237,000	26,001
<b>County Impacts</b>				
New Temporary Employees	2,441	1,802	271	351
New Permanent Employees	2,319	1,485	995	167
New Households	263	168	61	10
New Residents	836	534	194	32
	\$8.66 - \$20.92	\$6.55 - \$16.35	\$6.7 - \$17.7	\$1.53 - \$3.15
One-time Costs	million	million	million	million
Annual Costs	\$3,947,464	\$2,385,957	\$1,828,866	\$2,484,790
	\$7.83 - \$20.09	\$6.27 - \$16.07		\$1.036 - \$2.652
One-time Revenue	million	million	\$16,749	million
Annual Revenue	\$2,909,154	\$2,018,740	\$357,981	\$949,692
<b>City Impacts</b>				
New Residents	502	320	116	14
Annual Costs	\$1,060,077	\$809,850	\$54,320	\$115,274
	\$6.285 - \$10.285	\$5.028-\$8.228		\$0.828 - \$1.355
One-time Revenue <sup>1</sup>	million	million	N/A	million
Annual Revenue	\$1,136,361	\$899,194	\$14,225	\$143,386

Note: Shortfall between One-time Costs and One-time Revenues can be mitigated by bonding excess annual revenue. See "Cost Versus Revenue" for each alternative in the text.

## **DISCLAIMER**

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To the extent possible, we have attempted to verify and confirm estimates and assumptions used in this analysis. However, some assumptions inevitably will not materialize and unanticipated events and circumstances may occur, therefore actual results achieved during the period covered by our analysis will vary from our estimates and the variations may be material. As such The Innovation Group accepts no liability in relation to the estimates provided herein.

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## **North Fork Alternative Site Gaming Market Potential**

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### **Introduction**

This technical memorandum update considers the revenue and patronage potential for a proposed Class III gaming facility located in North Fork, California, as a site alternative to the Rancheria's proposed casino in the Madera area. This memorandum evaluates the casino's potential market position and makes projections for gaming visits and revenues based on the expected competitive environment in the region and the optimal gaming mix based on this market potential. The Madera, Tulare and Fresno County area has several established gaming facilities with which the proposed casino would compete, as well as a significant proposed gaming facility located between the city of Fresno and North Fork. As a result, from a competitive standpoint, proper positioning of the property in terms of size, attractiveness and amenities offered will all be key components determining the potential for success at the site.

The market potential for the casino is viewed as coming from two sources: the local population and the transient tourist population. The market potential from each of these segments is presented individually below, and aggregated in the final table.

### **Demographic Overview**

As a basis for the market assessment, this section provides a general overview of the population in the areas immediate to and surrounding the proposed North Fork facility. Concentric rings of 10, 25 and 50 miles were drawn around the North Fork site, from which the majority of the potential visitation may be drawn. Given the size of some of the competitive facilities in the market, and their respective accessibility relative to North Fork, it should be expected that demand for a North Fork facility would be primarily proximity-driven.

### ***Adult Gamer Population***

For the three concentric rings examined in the North Fork area, the gamer population age 21 and older is projected to increase at an annual rate of 2.14% through 2009, to a total of 753 thousand. Nearly 95% of this population resides in the outer ring of 25 to 50 miles, with less than 36 thousand people residing within 25 miles. The growth rates for the all rings are considerably greater than the national average of 1.14% and the statewide average of 1.61%. These figures are shown in detail in the following table.

#### North Fork, California Gamer Population

Ring	2007	% of Total 2007 Population	2012	% of Total 2012 Population	A.A.G. 2007 - 2012
0 - 10 mi	12,818	76.8%	14,237	77.7%	2.12%
10 - 25 mi	23,152	74.6%	25,803	77.0%	2.19%
25 - 50 mi	641,547	64.8%	713,311	66.0%	2.14%
0 - 50 mi	677,517	65.3%	753,351	66.5%	2.14%
California	25,598,458	69.0%	27,732,242	69.9%	1.61%
The United States	214,059,412	71.1%	226,527,835	71.9%	1.14%

Source: iXPRESS, Claritas, Inc., The Innovation Group

### Income

Between 2004 and 2009, the effective buying income for the 50-mile ring is expected to grow on average 2.3% per year from \$47,588 to \$53,340. The averages for the inner and outer rings are similar, while the inner ring average is approximately 15% greater. However, these average incomes are well below the statewide average, and with the exception of the middle ring, below the national average. Effective buying income reflects the adjusted net purchasing power of an average household in the market taking into consideration federal, state and local taxes. These figures are detailed below.

#### North Fork, California Effective Buying Income

Rings	2007	2012	A.A.G. 2007-2012
0-10 Miles	\$48,340	\$55,394	2.8%
10-25 Miles	\$57,306	\$64,405	2.4%
25-50 Miles	\$47,201	\$52,870	2.3%
0-50 Miles	\$47,588	\$53,340	2.3%
California	\$61,318	\$67,484	1.9%
USA	\$53,727	\$59,186	2.0%

Source: iXPRESS, Claritas, Inc., The Innovation Group

### Competitive Market

The current gaming market in the Fresno-Yosemite area is comprised of three large casinos: the Chukchansi Gold Resort and Casino, located west of North Fork on Route 41 in Coarsegold, The Palace, located 35 miles south of Fresno in Lemoore, and Table Mountain, a large facility located approximately 20 miles southwest of North Fork and 15 miles north of Fresno. Moving north or south out of the central valley there are several additional options for gamers. A description of the competitive facilities in the market follows.

#### Chukchansi Gold

Chukchansi Gold opened in 2003 and would be the most direct competitor for a casino in North Fork, as it is located west of North Fork on the most direct access road, Route 41. Located in Coarsegold, the attractive facility's design offers a large, open gaming floor that is well laid with easy access to restaurants and the hotel. The property is situated in

the foothills adjacent to Yosemite National Park. The casino features 1,800 slot machines and 59 table games including a 12-table poker room. The 192-room full-service hotel complements the casino by accommodating trips to nearby Yosemite National Park. The property appears to have a reasonable amount of clientele during the off-season and reaches capacity constraints during the summer tourism season. The property offers seven restaurants that offer a variety of options at different price-points, including a buffet, two cafes, two casual dining restaurants, a steakhouse, and a restaurant-bar that offers live entertainment. Chukchansi Gold is a 45-minute drive north of Fresno. The tribe is currently in the process of completing construction on an 11-story, 220-room hotel, and recently completed development of a parking garage. The new hotel addition will also include a spa and pool. The hotel is expected to be completed in Fall 2008. A casino in North Fork would be more proximate to Chukchansi than a Madera facility would be, but could potentially have a smaller impact on its operations given the comparative scale of the proposed facility.

### **Table Mountain Casino**

Table Mountain Casino is located just east of Millerton Lake, approximately 12 miles east of Route 41 in the town of Friant. The facility is easily visible from the road with parking available in a lot in front of the casino and a parking structure in the rear. Valet service is available only at peak times. The casino is the result of expansions at various times, but in spite of its physical disadvantages is the market leader in the Fresno region because of its convenience and positive reputation. The back of the property has a larger, more open gaming space that appears to have been added on. The entire facility houses 2,000 slot machines, 33 table games, and an 800-seat bingo parlor. The two main restaurants in the facility are located in this back area; one is Mountain Feast, a buffet while the other, Eagles Landing, offers casual dining. A concession stand is the only other dining outlet and is crowded in, like most of the casino, by slot machines. The 800-seat bingo hall doubles as an entertainment pavilion for shows which are held on occasion and they also feature a 1,200-slip parking garage. The Players' Club offers \$10 to join and runs frequent promotions. Alcohol is not offered on the property. The casino occasionally faces capacity constraints, especially for parking and traffic congestion.

### **Black Oak Casino**

In Tuolumne, approximately 75 miles north of Madera, the Tuolumne Band of Me-Wuk Indians offers the Black Oak Casino. The property's 1,000 plus slot machines include denominations between 1 cent and 5 dollars and offer some of the most current and popular games in the market. Twenty-four tables feature blackjack and poker, while the Black Oak Café and Willow Bar cater to customers' dining needs. An extensive expansion was completed and featured nearly 165,000 square feet to the current facility that offers entertainment to people of all ages. The first floor of the facility includes an entertainment zone that will have a family restaurant, 24-lane bowling alley, and kids' arcade. The second floor is a part of the casino and offer slots and table games, an entertainment lounge, and a non-smoking gaming area. The top floor features a fine-dining restaurant. In addition, a separate non-smoking casino is offered. This facility generates much of its patronage from the Modesto and Calaveras County areas, and has

minimal overlap with the North Fork market, but limits the ability to attract patrons from north of the park area.

### **Chicken Ranch and Bingo Casino**

The Chicken Ranch Bingo is a non-compacted casino in Jamestown which offers a 900-seat bingo hall and a comparatively limited offering of slot games, totaling approximately 250. Chicken Ranch offers few amenities and no table games and caters primarily to the local market, based in Jamestown and other immediately surrounding towns and communities. The facility offers very little in the way of signage around the region or near the facility, which can be difficult to find, and is not expected to offer significant competition to the North Fork facility, in Madera or in the town of North Fork. Given the proximity of Black Oak to Chicken Ranch, the market potential that could potentially be diverted from the Chicken Ranch market is relatively small.

### **Palace Casino**

Gamers in the Fresno metropolitan area also have the option of gaming south of the city at a major facility in LeMoore. The Palace Gaming Center Casino, once little more than a glorified truck-stop, now has over 2,000 slot machines, 30 gaming tables, a large bingo hall, and a variety of food and beverage outlets including a steak house and large buffet. In addition, the facility has a 1,972-seat entertainment venue that is utilized for headliner entertainment. The Palace is currently developing a \$60 million expansion that will include re-designed casino space, a 250-room hotel, a 1,200 –seat entertainment center and several new food and beverage amenities.

### **Eagle Mountain Casino**

Not far from Lemoore is the Eagle Mountain gaming facility, run by the Tule River Tribe. Located in Porterville, the 70,000 square foot casino offers 1,500 slot machines and 22 tables. Additional amenities include a buffet, a café, a 500-seat live bingo hall, and live entertainment. A bus program focuses on Porterville and Bakersfield, located to the south, and thus there would be negligible overlap with a North Fork operation. The tribe has been attempting to re-locate the casino closer to Porterville on Highway 190, but this would require taking land into trust off the reservation.

### **Proposed Facilities**

The Big Sandy Band of Western Mono Indians is planning a \$200 million casino and hotel on more than 215 acres near the intersection of Millerton Road and Auberry Road. The casino would include 250 to 300 hotel rooms, more than 75,000 square feet of casino space, 2,000 slot machines, table games, restaurants, retail shops, entertainment areas and meeting space. The gambling space would be on a 40-acre parcel of land belonging to a tribal member. Based on the proposed scale of development the Big Sandy facility would have a significant competitive advantage over the current Table Mountain facility. It is assumed that the tribe will close its small Mono Wind Casino when the Big Sandy casino opens. Several other large-scale facilities are proposed for the outskirts of the Bay Area and Sacramento area markets, but would have negligible impacts on North Fork (or vice versa) due to the anticipated small scale of the North Fork operation.



## **Gaming Market Analysis**

This section of the report is intended to provide an estimate of the revenue potential in 2011 for a Class III casino in North Fork, California. The gaming market potential is expected to be comprised of two market segments: local gamers and tourist gamers.

### ***Local Market Analysis***

To determine the potential revenues that the market area can generate, it is necessary to develop a gravity model. This model provides the flexibility to incorporate considerations reflecting the quality and size of existing properties, and allows for the estimation of the overall market. This model has been employed successfully in a number of jurisdictions, and is an effective tool when evaluating markets with high degrees of competition.

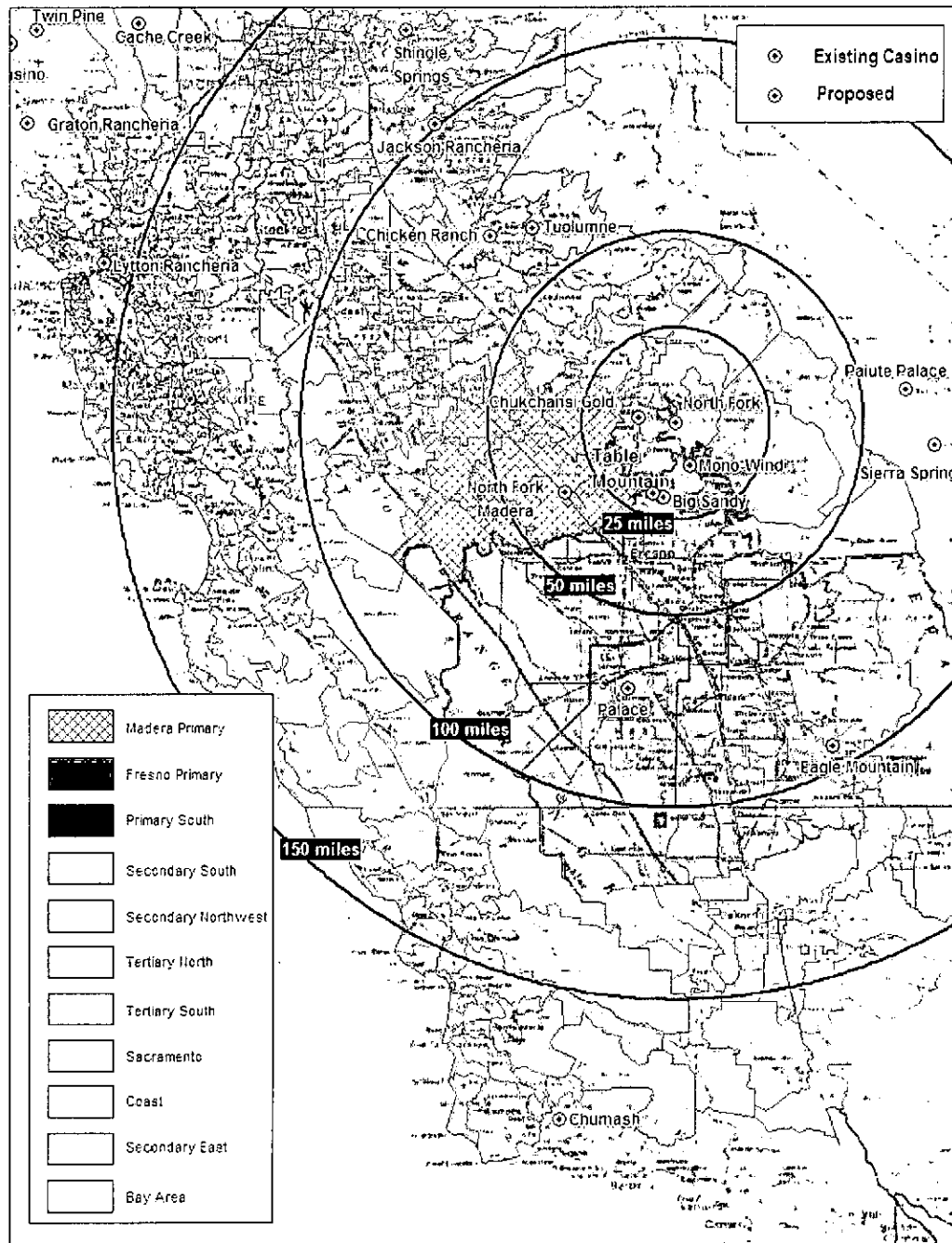
The most frequently used method of market assessment is the concentric ring model. This method draws several rings around a potential casino site and tabulates the adult population within each ring. Propensity and frequency factors are then applied to generate an estimated number of gamer visits per year. The concentric ring model, however, is not easily adjusted to reflect the impact of competitive venues that currently exist or are proposed within the range of the concentric rings, and thus the use of the concentric ring model was not considered suitable for the purposes of this study.

Gravity models are commonly used in location studies for commercial developments. First formulated in 1929 and later refined in the 1940s, the gravity model is an analytical tool that defines the behavior of a population based on travel distance and the availability of goods or services at various locations. The general form of the equation is that attraction is directly related to measure of availability such as square feet, and inversely related to the square of the travel distance. Thus, the gravity model quantifies the effect of distance on the behavior of a potential patron, and considers the impact of competing venues.

In this model, the regions were defined by the location of the existing competitive venues, the location of potential competitive venues, and travel distance to the subject facility. For each market area, propensity and frequency factors were applied to the adult population based on travel distance to the various competing gaming facilities. The gravity model then calculates the realistic distribution of gamer visits from each market area to each of the gaming locations in the market. The model does not recreate visitation to all competitive casinos, but only that portion from each market area that would normally accrue to the facility in the analyzed market area. Other competitors outside the region are treated as external competitors siphoning off a portion of gaming trips from within the region.

Accounting for geographic and competitive factors, the North Fork Market Area has been divided into eleven market areas. The North Fork Gaming Market map (on the following page) shows the eleven market areas and the locations of competing facilities, and the following discussion describes demographics for the market areas.

## North Fork Casino Market Area with Competitive Sites



Studies of gaming behavior in other areas have shown that both propensity and frequency are inversely related to travel distance to the casino. As travel times increase both the percentage of persons who gamble at that location and the number of times they visit the casino decrease. Gaming behavior also varies based on the availability and quality of the

gaming experience. The following is a discussion of the component variables of the gaming market analysis:

- **Participation Rate:** The Gaming Participation Rate is a function of the propensity to participate in gaming (the percentage of adults in the region that will visit a casino in the region during the course of a given year) and the average frequency with which they will do so.
- **Capture Rate:** The Capture Rate reflects the percentage of annual gaming trips made by adults in a given market that will accrue to the Subject facility.
- **Win per Visit.** This is the average win per visit for all gaming visits within a market or market segment. This tends to increase with distance as the individual gamer makes fewer trips per year and is likely to maximize his or her participation for the trips that are made. It also varies based on income and inflation and on specific facility characteristics such as the degree of overcrowding and the mix of machine denominations.

The following table shows the output implications of the gravity model for North Fork for 2011. This is based on a model developed reflecting The Innovation Group's estimates or proprietary knowledge of competitive properties in the market. In total, it is projected that the casino in North Fork could generate approximately 199 thousand gamer visits, resulting in \$11.2 million in local market gaming win.

<b>Projected Local Market Revenues and Patronage</b>						
	2011 Adult Population	Participation Rate	Capture Rate	Visits	Win	Revenues
Madera Primary	152,575	6.31	2.8%	27,367	\$51.47	\$1,408,702
Fresno Primary	541,223	7.05	1.6%	62,621	\$55.64	\$3,484,185
Primary South	411,858	5.60	0.9%	20,072	\$52.39	\$1,051,637
Secondary South	156,079	4.14	0.8%	4,980	\$43.63	\$217,256
Secondary Northwest	594,407	3.64	1.6%	35,661	\$57.43	\$2,048,189
Tertiary North	1,061,320	2.40	0.5%	12,727	\$66.45	\$845,690
Tertiary South	449,672	1.69	1.4%	10,634	\$53.40	\$567,855
Sacramento	971,022	4.20	0.0%	1,982	\$62.89	\$124,668
Coast	667,136	1.17	0.9%	7,294	\$66.40	\$484,322
Tertiary East	13,162	4.88	18.5%	11,874	\$57.47	\$682,414
Bay Area	4,881,775	0.42	0.2%	4,237	\$73.52	\$311,501
<b>Local Total</b>	<b>9,900,230</b>			<b>199,449</b>	<b>\$56.29</b>	<b>\$11,226,420</b>

### ***Tourist Market***

Yosemite National Park attracted approximately 3.5 million visitors in 2007, up slightly from 2006, but in line with the average for the past five years. Approximately one-third use the southern entrance at the end of Route 41, according to park rangers. Additionally, based on a 2001 California State University, Fresno study, 56% of these visitors reflect

adults without children, such that the universe of potential tourist gamers is approximately 700 thousand adults assuming no change in tourism base.

However, the Chuckchansi Gold casino is easily accessible for tourists riding on this route, such that even with excellent signage, diversion to North Fork would be difficult. Assuming one-third of adult tourists participate in gaming during their visit, and 6% of these gamers go to a North Fork casino, the casino would generate approximately 14,320 gamer visits. This would result in an additional \$1.0 million in gaming win, assuming an average win per visit of \$70.

**Projected Tourist Gamer Patronage and Win, 2011**

Adults	Participation Rate	Capture Rate	Gamer Visits	Win/Visit	Gaming Win
716,072	33.3%	6.0%	14,320	\$70	\$1,002,401

### **Revenue Summary**

The proposed casino in North Fork could potentially generate approximately \$12.2 million in gaming win in its first year of operation. Nominal growth could be expected during the first several years of operation, as the population growth rate in the region is relatively rapid, though most of the growth will be in areas that the casino will have difficulty competing.

**Gamer Visits and Revenues**

	Gamer Visits	Win/Visit	Gaming Win
Local Market	199,449	\$56.29	\$11,226,420
Tourist Market	14,320	\$70.00	\$1,002,401
Total	213,769	\$57.21	\$12,228,821

In order to accommodate these gamer visits as well as to have as competitive a facility as possible, it will be necessary to have 275 slots and 6 gaming tables. A revenue split of 88.5% slots and 11.5% tables would be normative for this market and for comparatively small sized or local facilities, and justifies these gaming position ratios. Based on a standard industry average of gaming 6 positions per table, an average daily win per position of approximately \$108 would result, with minimal difference between win per table position and win per slot. These averages are well below industry norms, however in order to be competitive in this market it will be necessary to develop a facility with a scale of at least this minimum. However, based on these results, project feasibility may be questionable, depending on the necessary cost of development.

In a project of this nature as developed in conjunction with Stations Casinos, with the mix of local and tourist gamers as projected, food and beverage revenues could be expected to total approximately \$1.82 million. Additionally, it could be expected that the average gamer would spend a net \$2 to \$2.50 per visit on other items, ranging from ATM commissions to retail items. This would yield an additional \$435 thousand. In total, non-gaming revenues are projected to total \$2.26 million, for total facility revenues of \$14.5 million in the first year of operation.

<b>Projected Total Facility Revenues</b>					
	Gamer Visits	F&B Spend	Other Spend	Total Non-Gaming Spend	Total Revenues
Local Market	199,449	\$8.00	\$2.00	\$1,994,488	\$13,220,908
Tourist Market	14,320	\$16.00	\$2.50	\$264,920	\$1,267,321
<b>Total</b>	<b>213,769</b>	<b>\$8.54</b>	<b>\$2.03</b>	<b>\$2,259,408</b>	<b>\$14,488,229</b>

A sensitivity analysis was run for several alternative casino sizes, with minimal difference in terms of cash flow margin by adding or subtracting 25 gaming devices. However, by subtracting more than 25 devices, the scale of the facility would be too small to warrant visitation and provide variety, given the level of competition in the market. Similarly, adding more than 25 devices would provide for diminishing marginal returns, with the level of investment necessary far outweighing any economic benefits that could be received. The following table provides an estimate of the gaming win, total revenues, and cash flow from operations under several sizing alternatives.

<b>Projections with Sizing Alternatives</b>				
	Gaming Revenue	Total Revenue	Estimated Cash Flow	Estimated Cash Flow Margin
200 slots 6 tables	\$9,812,557	\$11,266,437	\$1,515,671	13.5%
250 slots 6 tables	\$11,263,188	\$13,331,903	\$1,844,040	13.8%
<b>275 slots 6 tables</b>	<b>\$12,228,821</b>	<b>\$14,488,229</b>	<b>\$2,030,092</b>	<b>14.0%</b>
300 slots 6 tables	\$13,049,269	\$15,435,282	\$2,142,128	13.9%
350 slots 6 tables	\$13,895,209	\$16,431,497	\$2,250,689	13.7%

The required capital cost of development would determine which of these sizes, if any, would be feasible for development. It is understood that the size has challenges that would require minimum construction costs of well over \$20 million for projects of this size, which would be a multiple of cash flow that could not be successfully financed (based on The Innovation Group's experience, in this economic climate, capital can not be raised for tribal gaming projects where capital costs are in excess of 5X cash flow. In this model the multiple would be at least 9X).

# North Fork Rancheria Competitive Impact Technical Memorandum

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# INTRODUCTION

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The North Fork Rancheria of Mono Indians is proposing to build a casino and hotel development in Madera County, California. The Tribe has hired Station Casinos as its management company. This competitive impact analysis, performed by The Innovation Group, is based on an updated economic impact analysis for the North Fork Rancheria's proposed casino development in Madera, California, completed in June 2008, along with an alternative impact assessment for an off-site location alternative in North Fork. For the proposed site in Madera, a casino-hotel as proposed was analyzed, along with a decreased intensity development, assumed to be 50% of the size of the preferred building program. The market currently has several tribal gaming facilities, and therefore any new gaming venue in this market could potentially have a detrimental impact on existing facilities. It is also noted that the Big Sandy Rancheria is planning a large-scale casino resort development in the market, and as such the impacts of a North Fork facility would be incremental to that of Big Sandy, assuming the Big Sandy facility is the first to open.

The following technical memorandum will analyze the impact that the proposed casino would have on the existing competition, based on each of the three development alternatives provided in the socio-economic analysis. In order to quantify these impacts, The Innovation Group will complete the following five models:

- 1) Base case 2007 – replicating the performance of facilities in the market based on our knowledge or estimates of facility performance
- 2) Base case 2011 – projecting growth for existing gaming facilities and a new Big Sandy facility proximate to Table Mountain, incorporating other proposed expansions as well as organic growth, stemming from local market population and income growth
- 3) 2011 base case assumptions with addition of full casino-hotel in Madera
- 4) 2011 base case assumptions with addition of reduced scale casino-hotel in Madera
- 5) 2011 base case assumptions with addition of casino in North Fork

In addition to local market gamers, it is recognized that some of the gaming demand for casinos in the market stems from the location in close proximity to tourist destinations, most notably the National Park area. Demand from this segment for Madera will be broken down in terms of new and diverted visitation, and estimates will be made of where the diverted gamer visits and gaming win would otherwise have been consummated. The sum of the tourist and local market impacts should reveal the total impacts on existing properties.

## *Demographic Analysis*

An area's economic health and growth potential is indicative of its ability to support the local lodging and gaming markets. In this section, some of the specific economic and demographic characteristics of the proposed hotel and casino market area that will affect future demand for expanded gaming in the area are analyzed. The purpose of such an analysis is to evaluate the area's ability to:

- Support existing and proposed hotel and gaming facilities in the area; and
- Attract new sources of lodging and leisure demand.

Some of the factors we analyzed, including population trends and average household income trends, are included in tables and text on the next several pages.

### **Population**

#### **Total Population**

For the purposes of the economic/demographic analysis, the population within 100 miles of the potential development site was assessed in four concentric rings, 0-25 miles, 25-50 miles, 50-75 miles, and 75-100 miles. The total population within 100 miles of the subject property increased at an average annual rate of 1.76% between 2000 and 2007, bringing the population base from approximately 4.083 million to nearly 4.612 million. This growth is faster than the California's 1.30% average annual growth, and is nearly double the nation's 0.97% average annual growth for the same period.

Of the concentric rings analyzed for the Madera area, the 50-75 mile ring experienced the greatest average annual growth at 2.11% bringing the population from over 980,000 people in 2000 to over 1.134 million people in 2007. The next highest growth rate was that of the 0-25 mile demographic region. This ring's population grew 2.0% per year to reach an estimated 473,681 people in 2007. The 75-100 miles market area has the slowest population annual growth rates at 1.45% between the years 2000 and 2007.

Population projections estimate growth within the 100-mile area around the subject property at 1.69% per year between 2007 and 2012, bringing the population base to approximately 5.02 million. Although this growth rate demonstrates a decline from the previous four years, the trend is more in line with the state averages for the period projected of 1.40% and faster than the national averages. The ranking of growth rates is expected to remain the same with the 75-100 mile ring displaying the lowest growth rate at 1.46% and the 50-75 mile ring growing at 1.94% annually. The following table illustrates these population trends for the concentric rings as well as California and the nation.

### Preferred Area Total Population

Ring	2000	2007	2012	A.A.G. 2000 - 2007	A.A.G. 2007 - 2012
0-25 miles	412,344	473,681	519,058	2.00%	1.85%
25-50 miles	700,284	803,249	880,380	1.98%	1.85%
50-75 miles	980,326	1,134,816	1,249,326	2.11%	1.94%
75-100 miles	1,990,089	2,200,768	2,366,318	1.45%	1.46%
Area Total	4,083,044	4,612,514	5,015,082	1.76%	1.69%
California	33,871,648	37,075,982	39,684,022	1.30%	1.40%
United States	281,421,906	301,045,522	314,920,978	0.97%	0.90%

Source: MapInfo-Claritas, The Innovation Group

### Adult Population

The adult population within 100 miles of the development site made up approximately 66% of the total population in 2007, compared to California's total population, of which approximately 69% is over the age of 21, and the national population, of which 71.1% is over the age of 21. The population over the age of 21 that resides within 100 miles of the proposed site is expected to grow 2.02% per year between 2007 and 2012, reaching nearly 3.4 million adults, or 67% of the total population. In California, the adult population is expected to grow by 1.61% per year through 2012 and the percentage of the total population in the state that is adult is expected to increase slightly to 69.9%. The national adult population is expected to grow by 1.14% per year until 2012, to increase the portion of the total population that is adult to 71.9%. Mimicking entire population trends noted above, the 50-75 mile ring demonstrates the highest annual growth over the projected period. The following chart provides details of the estimated population aged 21 and over.

### Population 21 and Over

Ring	2007	% of Total 2007 Population	2012	% of Total 2012 Population	A.A.G. 2007 - 2012
0-25 miles	315,406	66.6%	350,502	67.5%	2.13%
25-50 miles	510,532	63.6%	573,409	65.1%	2.35%
50-75 miles	751,861	66.3%	845,219	67.7%	2.37%
75-100 miles	1,464,373	66.5%	1,592,989	67.3%	1.70%
Area Total	3,042,171	66.0%	3,362,119	67.0%	2.02%
California	25,598,458	69.0%	27,732,242	69.9%	1.61%
United States	214,059,412	71.1%	226,527,835	71.9%	1.14%

Source: MapInfo-Claritas, The Innovation Group

## Income

The table below demonstrates the average household income for the defined market area:

Area Average Household Income			
Ring	2007	2012	A.A.G. 2007 - 2012
0-25 miles	\$63,766	\$71,711	2.4%
25-50 miles	\$54,571	\$62,006	2.6%
50-75 miles	\$61,388	\$68,926	2.3%
75-100 miles	\$77,980	\$85,750	1.9%
Area Average	\$68,220	\$75,815	2.1%
California	\$76,956	\$85,077	2.0%
United States	\$66,670	\$73,741	2.0%

Source: MapInfo-Claritas, The Innovation Group

In completing these assessments, local area income levels are best measured by determining the Effective Buying Income (EBI) for the market region. Thus the EBI, not the more familiar AAHI statistic, are analyzed below. EBI reflects the adjusted net purchasing power of an average household in the market taking into consideration federal, state and local taxes.

In 2007, the 100-mile ring near Madera demonstrated an average EBI of \$54,429. This income level is slightly lower than the U.S. average of \$53,727 and lower than the state of California average of \$61,318. There is some disparity in income levels between the first and second rings. The 25 mile ring inclusive of and immediate to the Madera area demonstrated the second highest EBI in 2007, approximately 16% higher than the next ring (25-50 miles) and lower than state averages. As would be expected, the 75-100 mile ring, inclusive of San Jose, Stockton, and Salinas, has the highest EBI for the 100 mile region at \$61,529.

EBI is expected to grow at a marginally slower rate in California than that of the United States during the next five years. The EBI within 100 miles of Madera is expected to grow at 2.0% annually to reach \$60,116 by 2012. By 2012, the United States EBI is expected to reach approximately \$59,186 while the average household in California is expected to earn an EBI of \$67,484 annually. These figures are illustrated in the table below.

### Effective Buying Income

Ring	2007	2012	A.A.G. 2007 - 2012
0-25 miles	\$51,392	\$57,327	2.2%
25-50 miles	\$44,325	\$49,841	2.4%
50-75 miles	\$49,491	\$55,071	2.2%
75-100 miles	\$61,529	\$67,401	1.8%
Area Average	\$54,429	\$60,116	2.0%
California	\$61,318	\$67,484	1.9%
United States	\$53,727	\$59,186	2.0%

Source: MapInfo-Claritas, The Innovation Group

### *Tourism in the Region*

The tourism region surrounding Fresno is based on both the economy, which is centered in Fresno, as well as the National Parks and other outdoor recreational activities in the region. An October 2001 survey conducted by California State University, Fresno, provides some insight into visitation to Fresno County. In the survey, 49% of respondents indicated that they were overnight guests, with 25% staying three or more nights. Additionally, 69% of parties were three or more persons. Of overnight visitors, 77% indicated that they were staying in hotels, followed by 13% staying with friends or relatives, and 7% that were camping. Seventy-eight percent of respondents indicated that they had visited primarily for pleasure and 15% reported that business was some component of their trip. The study indicates that nearly all of the 51% of day-trip respondents reported pleasure as the primary purpose of their visit and came from a neighboring county such as Madera, Tulare, Merced, or Kings. The study estimated total visitation to Fresno County of 3,195,326 between August 2000 and July of 2001. While no visitor counts were available in the current report, the California Department of Tourism's 2007 tourism report completed by Dean Runyan Associates reports that visitors to Fresno County spent \$1.05 billion in 2007, and spent \$196 million in Madera County.

Yosemite National Park is a wide and varied attraction, inclusive of several smaller regions comprised of clusters of villages and towns. Both the southern and western Yosemite regions offer a variety of attractions drawing tourists not only from the local regions, California, and the nation, but also the world. Visitors from countries all over the globe come to California to visit its natural wonders, such as Highway 1 leading between San Diego and the Oregon border, and Yosemite National Park, a natural treasure preserved in the midst of development in the state of California and surrounding regions. Yosemite Valley draws millions of tourists every year, peaking in numbers in the summer months every year. Surrounding the park and the roads into the valley are several small towns, offering lodging and recreation, ranging from sightseeing of historical gold towns to water sports on waterways located throughout the region. Towns attracting tourism in relation to Yosemite National Park, as well as other area national and state parks include: Fish Camp, Bass Lake, Oakhurst, and Coarsegold (in the southern entrance area), and El Portal, Mariposa, Merced, Madera, Columbia, Groveland, Jackson,

and Jamestown (on the west and northwestern sides of the park near from Highways 140, 120, and 49). The park and other outdoor recreation areas are the primary reason for tourism to the region.

### The Region's Leisure Visitors

Visitors come from all over the world to the central valley of California to visit its preserves, such as the Sierra National Forest, Bass Lake, and Yosemite National Park. Tourists coming to visit the park have several options from which to choose when entering the park. They may choose to come from the northwest, from such cities as Modesto, Sacramento, or San Francisco, whereby they would come into the park via Highway 120. From the west, via Highway 140, visitors may come from Stockton, Madera, or the Monterey Bay area. From the south, the park is accessible by Highway 41 from Fresno and Bakersfield. Major cities in California are easily accessible when going to or leaving from the park accessible highways. Visitors can fly into several airports around the region and drive into the park region, or may drive in from road-trips around California.

The tourism market in Yosemite National Park is highly seasonal, given the four-season climate in the area. The park is often a family destination, subject to school year vacations, and given the weather variations, and often-resultant closure of several western access roads, the park's visitation naturally peaks in the summer months, offering somewhat of a bell-curve in visitation, though this varies by gate. Yosemite Park attracted approximately has attracted an average of approximately 3.3 million visitors for the past five years, although there has been a steady decline in the total number of visitors over the course of the past decade, from a peak of 4.2 million in 1996. In fact, in 2006 the park recorded its lowest visitation level in 16 years, with 3.24 million visitors, 20% below the 1996 peak. Therefore it is reasonable to assume that visitation to the Fresno and Madera region has declined this decade as well, although 2007 visitation to Yosemite totaled 3.5 million, the highest level since 1998.

# COMPETITIVE FACTORS

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## *Existing Regional Market*

The current gaming market in the area around Madera is comprised of three large casinos: Table Mountain, the closest facility to Fresno, the Chukchansi Gold Resort and Casino in Coarsegold, and The Palace, located south of Fresno in Lemoore. In addition to this major competition, a number of other casinos compete to varying degrees with Madera. For most of the casinos in the market, proximity and ease of access from Fresno are major determinants of the casino popularity and revenue potential. Most of the mature, larger properties in the market either have, or will soon have ample attractive non-gaming amenities to attract gamers from longer distances as well.

### **Table Mountain Casino**

Table Mountain Casino is located just east of Millerton Lake, approximately 12 miles east of Route 41 in the town of Friant. The facility is easily visible from the road with parking available in a lot in front of the casino and a parking structure in the rear. Valet service is available only at peak times. The casino is the result of expansions at various times, but in spite of its physical disadvantages is the market leader in the Fresno region because of its convenience and positive reputation. The back of the property has a larger, more open gaming space that appears to have been added on. The entire facility houses 2,000 slot machines, 33 table games, and an 800-seat bingo parlor. The two main restaurants in the facility are located in this back area; one is Mountain Feast, a buffet while the other, Eagles Landing, offers casual dining. A concession stand is the only other dining outlet and is crowded in, like most of the casino, by slot machines. The 800-seat bingo hall doubles as an entertainment pavilion for shows which are held on occasion and they also feature a 1,200-slip parking garage. The Players' Club offers \$10 to join and runs frequent promotions. Alcohol is not offered on the property. The casino occasionally faces capacity constraints, especially for parking and traffic congestion. The proposed Madera casino would be a major competitor for Table Mountain, as both would have the Fresno market in their primary target areas.

### **Chukchansi Gold**

Chukchansi Gold opened in 2003 and would likely compete with the proposed facility for clients from the region. Located in Coarsegold, the attractive facility's design offers a large, open gaming floor that is well laid with easy access to restaurants and the hotel. The property is situated in the foothills adjacent to Yosemite National Park. The casino features 1,800 slot machines and 59 table games including a 12-table poker room. The 192-room full-service hotel complements the casino by accommodating trips to nearby Yosemite National Park. The property appears to have a reasonable amount of clientele during the off-season and reaches capacity constraints during the summer tourism season. The property offers seven restaurants that offer a variety of options at different price-points, including a buffet, two cafes, two casual dining restaurants, a steakhouse, and a restaurant-bar that offers live entertainment. Chukchansi Gold is a 45-minute drive north of Fresno and approximately 25 miles northeast of the North Fork's proposed Madera



site. The tribe is currently in the process of completing construction on an 11-story, 220-room hotel, and recently completed development of a parking garage. The new hotel addition will also include a spa and pool. The hotel is expected to be completed in Fall 2008. As with Table Mountain, the proposed Madera casino would compete heavily for Chukchansi's primary market areas. If the proposed casino is located in North Fork, it would be more proximate to Chukchansi, but could potentially have a smaller impact on its operations given the comparative scale of the proposed facility.

### **Palace Casino**

Forty-five minutes to the south of Fresno, near the town of Lemoore, is The Palace Gaming Center Casino. Once little more than a glorified truck-stop, the high-quality, well-designed facility now has 2,000 slot machines, 56 gaming tables including 16 poker tables, a large bingo hall, and a variety of food and beverage outlets including a steak house and large buffet.

The Palace currently completed a \$60 million expansion that includes re-designed casino space, a 250-room hotel, a 1,200 –seat entertainment center and several new food and beverage amenities. In addition, the facility has a 1,972-seat entertainment venue that is utilized for headliner entertainment.

### **Mono Wind Casino**

The Big Sandy Rancheria tribe currently operates the Mono Wind Casino in Auberry. Although close to Table Mountain as the crow flies (approximately 10 miles to the east of Table Mountain), Mono Wind Casino is located in a mountainous area difficult to reach and is not a significant competitive threat to the Madera facility. As noted below, the Rancheria is proposing a casino more proximate to the Fresno population, and would likely close this facility once the new one is opened. At the present site, the Madera facility would be a more proximate and more easily accessible property than Mono Wind for many gamers coming from the Fresno market area, and thus some cannibalization of this market is likely. The casino has 340 video game machines, and 8 gaming tables. The bingo area can accommodate 65 players. There is a small restaurant with approximately 30 seats and a small gift shop in the casino. Alcohol is not served at the casino. The parking area is large but unpaved.

### **Eagle Mountain Casino**

Not far from Lemoore is the Eagle Mountain gaming facility, run by the Tule River Tribe. Located in Porterville, the 70,000 square foot casino offers 1,500 slot machines and 22 tables. Additional amenities include a buffet, a café, a 500-seat live bingo hall, and live entertainment. A bus program focuses on Porterville and Bakersfield, located to the south, and thus there would be negligible overlap with a Madera operation. The tribe has been attempting to re-locate the casino closer to Porterville on Highway 190, but this would require taking land into trust off the reservation.

## **Black Oak Casino**

In Tuolumne, approximately 75 miles north of Madera, the Tuolumne Band of Me-Wuk Indians offers the Black Oak Casino. The property's 1,000 plus slot machines include denominations between 1 cent and 5 dollars and offer some of the most current and popular games in the market. Twenty-four tables feature blackjack and poker, while the Black Oak Café and Willow Bar cater to customers' dining needs. An extensive expansion was completed and featured nearly 165,000 square feet to the current facility that offers entertainment to people of all ages. The first floor of the facility includes an entertainment zone that will have a family restaurant, 24-lane bowling alley, and kids' arcade. The second floor is a part of the casino and offer slots and table games, an entertainment lounge, and a non-smoking gaming area. The top floor features a fine-dining restaurant. In addition, a separate non-smoking casino is offered. Tuolumne is located nearly 75 miles north of Madera, and therefore has limited overlap in terms of feeder markets.

## **Chicken Ranch and Bingo Casino**

The Chicken Ranch Bingo is a non-compacted casino in Jamestown which offers a 900-seat bingo hall and a comparatively limited offering of slot games, totaling approximately 250. Chicken Ranch offers few amenities and no table games and caters primarily to the local market, based in Jamestown and other immediately surrounding towns and communities. The facility offers very little in the way of signage around the region or near the facility, which can be difficult to find, and is not expected to offer significant competition to the North Fork facility, in Madera or in the town of North Fork. Given the proximity of Black Oak to Chicken Ranch, the market potential that could potentially be diverted from the Chicken Ranch market is relatively small.

## **Jackson Rancheria**

North of the immediate region, and located approximately 100 miles north of Madera, Jackson Rancheria caters to gamers 18 and over and does not serve alcohol. An arcade is available for minors. The primary market for the property is the Stockton-Sacramento corridor. Machine activity at the Jackson Casino is extremely high. The casino offers over 1,500 slot machines and 65 tables offering black jack and a variety of poker games. The hotel features 146-rooms and suites. Live entertainment features local and regional musicians, with occasional sold out shows for bigger-name performers. Three dining options include a full-service dining experience at Raging River Restaurant, casual dining at Uncle Bud's Burgers, and a buffet that is offered in conjunction with Raging River Restaurant. A gift shop located in the casino lobby is the only retail outlet available. A seven-story parking structure is available for patrons.

The success of the Jackson facility is all the more remarkable considering its location in the hills at the edge of the Sacramento Valley. From any direction it requires travel on winding, two-lane roads, although plans are being considered for a \$5.5 million access road to alleviate local congestion and allow gamers easier access. From Stockton, it is a one-hour drive up Route 88. From Sacramento it is a one-hour drive on Route 16. From Placerville it is a 45-minute drive down Route 49. These feeder markets are located more

than 100 miles from Madera and North Fork, and therefore the Jackson and North Fork casinos would pose limited competition for one another.

### *Proposed Competitive Facilities*

In addition to the existing competition in the market, there is one other proposed casino in the Fresno-Madera-Yosemite area market that will compete heavily for gamers in the region, as well as several large-scale casinos, existing and proposed, well outside of the region near major metropolitan areas in Northern California, that could limit the revenue potential for the North Fork's casino operation. Any impact by the subject proposed property on the major metro area properties would be negligible, however, as the market areas served by those casinos would yield only a small percentage of their total gamer visits to the subject proposed property.

The most proximate proposed casino to Madera is to be located approximately one mile from Table Mountain. The Big Sandy Band of Western Mono Indians is planning a \$200 million casino and hotel on more than 215 acres near the intersection of Millerton Road and Auberry Road. The casino would include 250 to 300 hotel rooms, more than 75,000 square feet of casino space, 2,000 slot machines, table games, restaurants, retail shops, entertainment areas and meeting space. The gambling space would be on a 40-acre parcel of land belonging to a tribal member. Based on the proposed scale of development the Big Sandy facility would have a significant competitive advantage over the current Table Mountain facility. Project developers claim the land is in trust, although approval by the Department of Interior is not assured.

Two other casinos have been assumed in the market: Shingle Springs, and Graton Rancheria in Rohnert Park. Shingle Springs Rancheria appears to be making headway in having a direct exit ramp built to its land on Highway 50; Graton Rancheria has a similar case that was successful for the United Auburn Indian Community. Graton has an excellent location north of San Francisco and besides San Pablo would be the closest casino to the Bay Area. Shingle Springs has an excellent location east of Sacramento and would have a similar market potential as Thunder Valley.

Two proposed casinos have not been included in the analysis because of long odds and/or legal difficulties. The Ione Band of MiWuk Indians has proposed a development near Plymouth, but local opposition makes the project unlikely, in our view. Similarly, the Buena Vista Band of MiWuk Indians (a tribe consisting of one woman and her children) are proposing a casino near Ione, but is facing local opposition despite having a compact with the governor. Buena Vista is proximate to Jackson Rancheria in the Tertiary North market, and would have a relatively small impact on North Fork (likely 5% or less) if North Fork Rancheria develops in Madera as proposed.

# GRAVITY MODEL IMPACT STUDY

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The first step in building the gravity model impact study is to assess the current revenue trends for the market. The Innovation Group's research regarding the current revenue and visitation estimates for this region are based both on primary market research and confidential data sources, resulting in revenue and visitation estimates for casinos existing and proposed within a 75-mile radius, including Table Mountain, Big Sandy, Chukchansi, Palace, Tuolumne Black Oak, and Chicken Ranch. As noted above, some revenues may be diverted from casinos outside of 75 miles from the North Fork development in aggregate, but the impact on any single casino would be negligible.

## *Methodology*

Having analyzed current market conditions and growth potential for the Fresno/Madera regional market utilizing confidential resources, we can then use these forecasts to calibrate a gravity model to estimate the impact of new competition and of adding amenities and expanding gaming space. First, the model was calibrated to reflect current market conditions and then it was used to estimate the impact of various scenarios.

Gravity models are commonly used for commercial developments, public facilities and residential developments. First formulated in 1929 and later refined in the 1940s, the gravity model estimates where a population will shop or gamble based on travel distance and the size and quality of competing facilities. One of the gravity model's strengths is its malleability; the model can simultaneously incorporate many different variables such as population, race and ethnicity, geographical location, income, propensity to gamble and frequency of gaming trips and measure the impact of new competition.

The gravity model is based on the concept that the attractiveness (or "gravitational pull") of a facility is related to its size, quality, and distance from a given population. Technically speaking, the interaction between two or more gaming venues is based on Newton's Law of Universal Gravitation: two bodies in the universe attract each other in proportion to the product of their masses and inversely proportional to the square of the distance between them. Thus, the expected interaction between gaming venue *i* and market area *j* is shown as:

$$\text{Attraction or "gravitational pull"} = k \times \frac{P_i \times P_j}{d_{ij}^2}$$

where  $P_i$  = the gaming positions in gaming venue *i*,  $P_j$  = the population in market area *j*,  $d_{ij}$  = the distance between them, and  $k$  = an attraction factor relating to the quality of the casino and the amenities to be found at each gaming venue in comparison to the competing set of venues.

The distribution of gaming visits is further influenced by incorporating an attractiveness factor, which weighs the relative quality of a facility with respect to non-gaming amenities, congestion both on area roadways and within the casino, and other site-related

quality issues (essentially anything that may influence gaming decisions other than proximity and the size of a facility). The process takes into consideration population densities, transportation infrastructure and natural geographical boundaries.

Gamer visits are then generated from population data for each zip code within each of the market areas based on these factors. Gamer visits represent the number of patron trips to a gaming market, where an individual can make any number of separate visits in the course of a year. The gamer visits thus generated are then distributed among the competitors based upon the size of each facility, its attractiveness and the relative distance from the zip code in question. The gravity model then calculates the probabilistic distribution of gamer visits from each market area to each of the gaming locations in the market. A win per visit value is then applied to the gamer visits output in order to estimate revenues.

It should be noted that as market supply increases, generally so too does market demand, as the increased options, marketing efforts, and closer proximity to some residents will increase the level of participation for some gamers. The degree to which demand increases depends heavily on the quantity and quality of competition already in the market, and the location of a new property relative to population masses. In the subject market there are currently several facilities catering to the local population, as well as several additional properties catering to the broad, regional population. In a more competitive atmosphere, gaming facilities will need to be more focused on their marketing efforts, and perhaps broaden the market area from which they seek to attract patrons. As a result of the increased competition and expanded marketing efforts, gaming revenues for the market should increase, but should be expected decline at some or all of the existing facilities, as will be demonstrated in the cannibalization tables on page 20.

The following section provides a description and definition of the various components of the model.

### Gamer Visits

This measure is used to specify the number of patron trips to a gaming market, where an individual can make any number of separate visits in the course of a year. In order to estimate the gamer visits, market penetration rates, made up of the separate measures of propensity and frequency, are applied to the adult population in each zip code.

### Propensity

Propensity is a measure of the likelihood that an individual will visit a casino in a given year. This varies based upon a number of factors, which include the number of gaming venues in the area, their quality and type (i.e., landbased versus riverboat, or full casino versus racetrack slot-only facility), the games permitted, the availability of other entertainment and leisure options, and most importantly, distance from a gaming venue.

## Frequency

The frequency factor measures the average number of visits that an adult with a propensity to gamble will make annually to a gaming venue in the subject market. Frequency is a function of annual gaming budget as indicated by income variations, the number of venues in the market, and the quality and type of gaming facility. The frequency of visitation is inversely related to distance from a gaming venue, as fewer trips are made as convenience declines. However, the length of the average gaming trip increases with distance, such that an annual gaming budget for those living relatively far from a gaming venue may approach that of those living close by, for whom short gaming trips are typical.

## Attraction Factors

Attraction factors measure the relative attraction of one gaming venue in relation to others in the market. Attraction factors are applied to the size of the gaming venue as measured by the number of positions it has in the market. Positions are defined as the number of gaming machines plus the number of seats at gaming tables. A normative attraction factor would be one. When this is applied to the number of positions in a gaming venue there is no change in the size of the gaming venue as calculated by the model and hence its attraction to potential patrons. A value of less than one adjusts the size of the gaming venue downwards making it less attractive and conversely a value greater than one indicates that the gaming venue has characteristics that make it more attractive. Attraction factors can be based on a number of components including branding, the level and effectiveness of marketing efforts, and the level of quality of the casino and the amenities offered by a facility. Attraction factors are also adjusted to model the presence of natural and man-made boundaries which impact ease of access and convenience of travel in the market area.

The sensitivity of the model to changes in these factors is not in the nature of a direct multiplication. For example, a doubling of the attraction factor will not lead to a doubling of the gamer visits attracted to the site. It will however cause a doubling of the attractive power of the gaming venue, which is then translated via non-linear equations into an increase in the number of gamer visits attracted to the gaming venue. In this analysis attraction factors have been adjusted for each gaming facility for each ethnicity or race in each of the discrete market areas.

## Win Per Visit

A win per visit value is the win by the gaming venue for each visit made. Generally, this increases with distance from the gaming venue reflecting the less frequent nature of the trips and the effort required to make them. These factors tend to create a larger proportion of more dedicated players and hence a larger win per visit. Effective buying income, or disposable income, is also a factor in variances in win per visit as those with more disposable income have more money with which to gamble.

## Market Areas

The gravity model requires that market areas be defined and assigned unique propensity and frequency factors. To this end, an area that encompasses about a three-hour drive from the casino was identified. Due to the mountains to the east and northeast, and the limited roadway access directly to the west, driving times in an east-west direction are much longer than moving northwest and southeast, for which major roadways and direct alternatives are available. A three-hour radius was identified because it represents the maximum that most casino visitors are willing to drive without spending the night, though this drive-time radius in no way reflects a concentric ring in terms of mileage. It is believed that this drive-time area will represent where most of the visitors to the casino live.

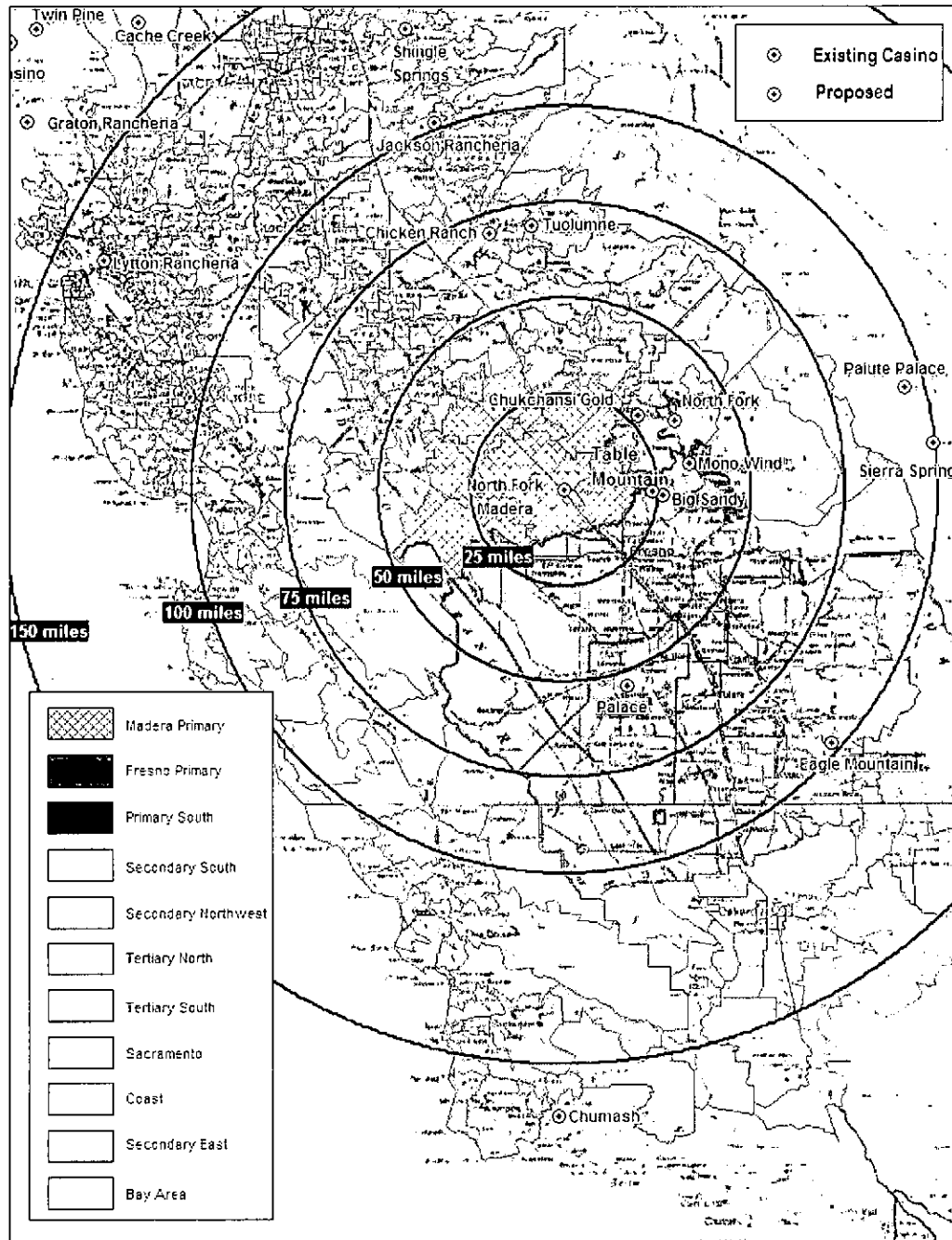
From this three-hour radius, eleven discrete market areas were carved. Each market area groups together individuals with similar propensity factors. Basically, individuals who live in the same market area have the same likelihood that they will visit the casino due to their distance to Madera and competing casinos.

For example, the Primary market areas are the areas are centered around Fresno and Madera, which includes the towns with the most proximate casinos. Gaming behavior within these market areas should be relatively similar among the different zip codes.

Other market areas were defined by metropolitan areas such as the San Francisco Bay area and the Sacramento area. The remaining market areas were defined by choosing contiguous areas with relatively similar transportation access to Madera and in relation to competitive facilities.



## North Fork Casino Market Area with Competitive Sites



## *Demographic Analysis of Madera Market Areas*

### Population

As population is one of the strongest drivers of gamer visits, it is one of the most closely studied characteristics of the market areas. In particular, it is important to understand the dynamics of population growth as this understanding will allow for better predictions of gamer visits.

The Innovation Group collected Census projections from Claritas Inc., providing the adult population changes from 2007 and 2011. Each of the eleven market areas is expected to experience growth in its population between 2007 and 2011. The average growth rate for the entire area of study is estimated to be 6.0% with the majority of the market areas experiencing growth at a higher rate, with the overall average dragged down by a slowly expanding Bay Area population. The Bay Area is expected to experience a growth rate of only 2.6% through 2011, whereas the three Primary market areas are projecting growth rates in the range of 8.7% to 10.2%. See the table below for detailed information regarding the adult population in each of the market areas.

	2007 Adult Population	2011 Adult Population	Change
Madera Primary	138,468	152,575	10.2%
Fresno Primary	498,128	541,223	8.7%
Primary South	374,550	411,858	10.0%
Secondary South	142,049	156,079	9.9%
Secondary Northwest	539,003	594,407	10.3%
Tertiary North	943,952	1,061,320	12.4%
Tertiary South	403,075	449,672	11.6%
Sacramento	897,792	971,022	8.2%
Coast	632,493	667,136	5.5%
Tertiary East	12,446	13,162	5.8%
Bay Area	4,756,681	4,881,775	2.6%
Market Total	9,338,637	9,900,230	6.0%

Source: Claritas MapInfo

## *Gravity Model Results*

The Innovation Group proposed to create five models to demonstrate the net impact of the proposed facilities on the market. These models included:

- 1) Base case 2007 – replicating the performance of facilities in the market based on our knowledge or estimates of facility performance
- 2) Base case 2011 – projecting growth for existing gaming facilities and a new Big Sandy facility proximate to Table Mountain, incorporating other proposed expansions as well as organic growth, stemming from local market population and income growth
- 3) 2011 base case assumptions with addition of full casino-hotel in Madera. The full casino scenario assumes a gaming facility with 2,000 slots and 70 table games, and broad amenity mix including a hotel.
- 4) 2011 base case assumptions with addition of reduced scale casino-hotel in Madera, with 80% of the gaming positions of the full model (1,600 slots and 56 tables), and a similarly abbreviated non-gaming building program.
- 5) 2011 base case assumptions with addition of casino in North Fork, offering 275 slots and 6 tables.

**Total Market Gamer Visits by Scenario**

	<b>Base Case 2007 Scenario</b>	<b>Base Case 2011 Scenario</b>	<b>Full Casino Scenario</b>	<b>Reduced Scale Scenario</b>	<b>North Fork Scenario</b>
<b>Local Market</b>					
Madera Primary	782,339	883,236	986,981	963,568	884,413
Fresno Primary	3,379,451	3,855,035	4,065,857	3,989,797	3,861,058
Primary South	1,905,864	2,173,747	2,200,919	2,190,050	2,173,747
Secondary South	536,897	581,530	584,902	584,059	581,530
Secondary Northwest	1,926,962	2,128,058	2,462,216	2,386,591	2,131,928
Tertiary North	2,462,533	2,777,386	2,786,644	2,784,793	2,777,386
Tertiary South	655,713	734,991	737,818	737,253	734,991
Sacramento	3,965,705	4,291,869	4,304,132	4,301,679	4,291,869
Coast	755,819	797,100	827,179	803,116	797,100
Tertiary East	44,532	54,200	54,501	54,471	58,717
Bay Area	2,236,247	2,301,574	2,350,776	2,307,041	2,301,574
<b>Local Total</b>	<b>18,652,062</b>	<b>20,578,727</b>	<b>21,361,926</b>	<b>21,102,418</b>	<b>20,594,314</b>
<b>Tourist Total</b>	<b>3,264,111</b>	<b>3,549,830</b>	<b>3,620,846</b>	<b>3,597,962</b>	<b>3,553,380</b>
<b>Total</b>	<b>21,916,173</b>	<b>24,128,558</b>	<b>24,982,772</b>	<b>24,700,380</b>	<b>24,147,695</b>

### Total Market Gamer Visits by Scenario – Including only Proximate Facilities

	Base Case 2007 Scenario	Base Case 2011 Scenario	Full Casino Scenario	Reduced Scale Scenario	North Fork Scenario
<b>Local Market</b>					
Madera Primary	689,526	789,138	947,089	912,197	793,163
Fresno Primary	3,307,469	3,798,689	4,020,513	3,939,164	3,805,625
Primary South	1,780,804	2,033,744	2,071,873	2,056,246	2,035,407
Secondary South	261,968	299,443	311,976	307,741	301,611
Secondary Northwest	1,164,777	1,293,715	1,730,281	1,568,171	1,309,540
Tertiary North	291,120	345,994	473,484	401,290	356,479
Tertiary South	330,065	401,227	429,355	419,478	406,029
Sacramento	50,115	65,267	87,099	78,019	67,207
Coast	478,670	526,027	607,863	561,677	528,491
Tertiary East	43,541	53,074	53,577	53,393	57,666
Bay Area	180,099	218,128	294,166	255,092	221,581
<b>Local Total</b>	<b>8,578,154</b>	<b>9,824,447</b>	<b>11,027,278</b>	<b>10,552,467</b>	<b>9,882,799</b>
<b>Tourist Total</b>	<b>1,544,068</b>	<b>1,679,980</b>	<b>1,778,148</b>	<b>1,741,157</b>	<b>1,685,017</b>
<b>Total</b>	<b>10,122,222</b>	<b>11,504,427</b>	<b>12,805,426</b>	<b>12,293,624</b>	<b>11,567,816</b>

### Market Gaming Revenue by Scenario

	Base Case 2007 Scenario	Base Case 2011 Scenario	Full Casino Scenario	Reduced Scale Scenario	North Fork Scenario
<b>Local Market</b>					
Madera Primary	\$46,439,071	\$54,298,532	\$60,022,057	\$58,639,525	\$54,254,915
Fresno Primary	\$214,582,978	\$253,922,344	\$267,553,750	\$262,609,674	\$254,436,836
Primary South	\$113,165,536	\$134,288,701	\$135,928,085	\$135,264,768	\$134,663,280
Secondary South	\$26,536,302	\$29,905,233	\$30,076,118	\$30,033,396	\$29,933,458
Secondary Northwest	\$126,057,618	\$144,709,337	\$167,239,511	\$162,123,455	\$144,769,708
Tertiary North	\$185,273,106	\$217,403,863	\$218,142,297	\$217,972,093	\$217,305,779
Tertiary South	\$39,733,832	\$46,329,265	\$46,497,028	\$46,463,726	\$46,328,558
Sacramento	\$282,029,458	\$317,615,679	\$318,525,176	\$318,341,423	\$317,604,990
Coast	\$57,125,092	\$62,632,402	\$64,936,231	\$63,062,693	\$62,700,482
Tertiary East	\$2,992,752	\$3,775,608	\$3,792,188	\$3,791,221	\$3,961,961
Bay Area	\$186,133,510	\$199,330,245	\$203,570,691	\$199,783,566	\$199,334,510
<b>Local Total</b>	<b>\$1,280,069,253</b>	<b>\$1,464,211,210</b>	<b>\$1,516,283,131</b>	<b>\$1,498,085,539</b>	<b>\$1,465,294,477</b>
<b>Tourist Total</b>	<b>\$277,449,419</b>	<b>\$313,987,266</b>	<b>\$320,268,721</b>	<b>\$318,244,582</b>	<b>\$314,301,254</b>
<b>Total</b>	<b>\$1,557,518,673</b>	<b>\$1,778,198,476</b>	<b>\$1,836,551,852</b>	<b>\$1,816,330,120</b>	<b>\$1,779,595,731</b>

### Gaming Revenue by Scenario – Including only Proximate Facilities

	Base Case 2007 Scenario	Base Case 2011 Scenario	Full Casino Scenario	Reduced Scale Scenario	North Fork Scenario
<b>Local Market</b>					
Madera Primary	\$41,037,793	\$48,600,168	\$57,606,296	\$55,528,591	\$48,728,965
Fresno Primary	\$210,055,028	\$250,234,091	\$264,585,601	\$259,295,377	\$250,808,312
Primary South	\$105,757,649	\$125,658,969	\$127,973,756	\$127,017,115	\$126,136,083
Secondary South	\$12,976,022	\$15,426,959	\$16,068,086	\$15,851,223	\$15,566,429
Secondary Northwest	\$76,566,335	\$88,332,749	\$117,782,629	\$106,822,809	\$89,200,982
Tertiary North	\$22,141,135	\$27,323,560	\$37,305,090	\$31,635,656	\$28,045,156
Tertiary South	\$20,074,139	\$25,361,389	\$27,118,645	\$26,500,343	\$25,662,363
Sacramento	\$3,614,911	\$4,884,186	\$6,501,757	\$5,827,609	\$5,017,025
Coast	\$36,320,591	\$41,457,741	\$47,804,528	\$44,202,905	\$41,718,297
Tertiary East	\$2,928,341	\$3,699,468	\$3,729,719	\$3,718,298	\$3,890,889
Bay Area	\$15,232,788	\$19,129,183	\$25,690,723	\$22,306,769	\$19,432,091
<b>Local Total</b>	<b>\$546,704,732</b>	<b>\$650,108,462</b>	<b>\$732,166,829</b>	<b>\$698,706,696</b>	<b>\$654,206,592</b>
<b>Tourist Total</b>	<b>\$131,245,755</b>	<b>\$148,596,517</b>	<b>\$157,279,619</b>	<b>\$154,007,681</b>	<b>\$149,042,028</b>
<b>Total</b>	<b>\$677,950,488</b>	<b>\$798,704,979</b>	<b>\$889,446,448</b>	<b>\$852,714,377</b>	<b>\$803,248,620</b>

### *Revenue Summary*

As demonstrated in the table above, it is projected that a casino with the preferred building program in Madera could increase total gaming expenditures at venues in the immediate market area by approximately \$81 million or by approximately \$56 million per year if a more moderate-scale facility is developed. A casino in the town of North Fork would have a negligible impact on market growth. The proposed casino at the alternative site in North Fork could potentially generate approximately \$12.2 million in gaming win in its first year of operation for the year 2011, however if the casino is permitted at the Madera site with the preferred building program, gaming revenues for the property could total approximately \$187 million annually. With a reduced intensity of development at the Madera site, gaming revenues for the property are projected to total \$142 million annually.

In terms of capacity, the aforementioned sizes (2,000 slots and 70 tables with full the Full Scale Scenario or 1,600 slots and 56 tables in the Reduced Scale Scenario) would provide for an average of between 3.0 and 3.1 gamers per gaming position per day. A facility at North fork with 275 slots and 6 tables would likely average approximately 2.0 gamers per position per day. None of these averages would be likely to result in capacity constraints, and, based on our estimates of demand for the Palace and Table Mountain, are well below the average gamers/position ratios that those facilities currently experience. As a result, while technically it is possible that the tribe could negotiate for up to 2,500 gaming devices at the Madera site, it does not appear that there is sufficient demand in the market to expand beyond the 2,000 currently negotiated.

As discussed above, the availability and ease of access of an attractive casino to the population should result in an expansion of gaming demand, though given the competitiveness in the market, some decline in market share should naturally result at the competitive properties. The table below illustrates the gaming revenue for the total market, the subject facility's revenue potential, and the cannibalization of revenues on the facilities as projected within the immediate market area.

<b>Cannibalization by Scenario</b>					
	<b>Base Case 2007 Scenario</b>	<b>Base Case 2011 Scenario</b>	<b>Full Casino Scenario</b>	<b>Reduced Scale Scenario</b>	<b>North Fork Scenario</b>
<b>Total Market</b>					
Local Total	\$546,704,732	\$650,108,462	\$732,166,829	\$698,706,696	\$654,206,592
Tourist Total	\$131,245,755	\$148,596,517	\$157,279,619	\$154,007,681	\$149,042,028
Total	\$677,950,488	\$798,704,979	\$889,446,448	\$852,714,377	\$803,248,620
			<b>Subject Property</b>	<b>Subject Property</b>	<b>Subject Property</b>
Local Total			<b>\$157,500,823</b>	<b>\$118,306,940</b>	<b>\$11,226,420</b>
Tourist Total			<b>\$29,925,156</b>	<b>\$23,661,388</b>	<b>\$1,002,401</b>
Total			<b>\$187,425,979</b>	<b>\$141,968,328</b>	<b>\$12,228,821</b>
<b>Cannibalized Totals</b>					
New Local %			52.1%	41.1%	36.5%
Cannibalized Local \$			\$75,442,456	\$69,708,707	\$7,128,290
New Tourist %			29.0%	22.9%	44.4%
Cannibalized Tourist \$			\$21,242,054	\$18,250,223	\$556,889
Total Cannibalized \$			\$96,684,510	\$87,958,930	\$7,685,179

As demonstrated from the table above, in nominal terms, the full-scale casino development would have the largest cannibalizing impact of the development scenarios; however, it would also generate the highest percentage of new revenues for the market. In contrast, the alternative site development would not generate significant new local market demand, but would naturally have the smallest impact on existing competitors.

In the scenario where the full-scale casino is developed in Madera, it is projected that the most significant impacts will be felt on the Chukchansi, Table Mountain and the proposed Big Sandy facilities. While actual revenues for the properties is proprietary to the respective tribes, based on our models, it is projected that a revenue decline of approximately 19% would be felt at Chukchansi as a result of the operation of the subject casino, and a revenue decline of approximately 16% would be felt at both the Table

Mountain and Big Sandy facilities. The Palace, Tuolumne Black Oak and Chicken Ranch would also be impacted, though the revenue declines at each of those facilities would be well under 8%.

In the scenario where a reduced-scale casino is developed in Madera, the impacts on existing casinos would naturally be somewhat lower. It is projected that a revenue decline of approximately 17.5% would be felt at Chukchansi as a result of the operation of the subject casino, and a revenue decline of 13.9% to 13.6% would be felt at both the Table Mountain and Big Sandy facilities.

Finally, if a casino is developed at the alternative site, given that the projected cannibalized total is only \$8.2 million, the impact on any single casino would be significantly less, with no single casino having a revenue decline of more than 2%.

It should be noted that even in the scenario where revenues at gaming facilities fall by 20%, the impact on the viability of operations is not one that jeopardizes its ability to remain open. A decline of this rate is typical in a market that is not already over-saturated, and one where multiple operators could successfully co-exist in the long run.

The following table presents the estimated percentage decline in revenues for the six most proximate gaming facilities based on each of the considered alternative competitive scenarios.

**Projected Decline in Revenues by Property and Development Scenario  
(Relative to Base 2011 Model)**

Major Competitors Impacted	Full Scale	Reduced Scale	Alternative Site
Chukchansi	-19.2%	-17.5%	-1.5%
Table Mountain	-16.3%	-13.9%	-1.0%
Big Sandy	-15.7%	-13.6%	-1.4%
Palace*	-7.7%	-7.1%	-0.5%
Tuolumne*	-3.4%	-5.3%	-0.8%
Chicken Ranch*	-1.6%	-4.4%	-1.0%

\*Note: the impact to the Palace, Tuolumne and Chicken Ranch properties may be considerably smaller, as the market area carveout for the North Fork local market area does not extend fully into the areas for which these facilities attract gamers. To the extent that these casinos generate their patronage from unshared markets, the impacts to those casinos would be further muted.

It should be noted that without additional competition, Chukchansi revenues would continue to grow through 2011. However, the introduction to the market of the proposed Big Sandy casino in combination with the proposed Shingle Springs casino, both of which are anticipated to open prior to a casino in Madera, would decrease revenues at Chukchansi by approximately 20%. The nearly 20% impact from the Madera casino is in addition to the impact of these two other casinos opening.



# **APPENDIX S**

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## *Revised Air Quality Technical Appendix*

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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. A Near-Term.urb924

Project Name: Northfork Alt. A Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	1.46	5.49	4.85	0.00	2.13	0.32	2.46	0.45	0.30	0.74	716.25
2010 TOTALS (tons/year mitigated)	0.92	4.74	4.85	0.00	0.16	0.04	0.20	0.04	0.04	0.07	716.25
Percent Reduction	37.11	13.80	0.00	0.00	92.46	87.36	91.78	92.11	87.52	90.27	0.00
2011 TOTALS (tons/year unmitigated)	3.70	3.81	3.78	0.00	0.01	0.26	0.27	0.00	0.24	0.24	562.26
2011 TOTALS (tons/year mitigated)	2.91	3.30	3.78	0.00	0.01	0.04	0.05	0.00	0.03	0.04	562.26
Percent Reduction	21.26	13.35	0.00	0.00	0.00	86.18	82.78	0.00	86.35	85.00	0.00

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.43	0.59	0.78	0.00	0.00	0.00	711.79

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OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	22.56	46.05	267.57	0.22	19.76	4.74	22,966.03

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	22.99	46.64	268.35	0.22	19.76	4.74	23,677.82

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. A Near-Term.urb924

Project Name: Northfork Alt. A Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (lbs/day unmitigated)	57.27	66.68	61.34	0.04	80.01	3.78	83.18	16.71	3.47	19.62	8,650.38
2010 TOTALS (lbs/day mitigated)	17.02	56.70	61.34	0.04	5.66	0.54	5.90	1.18	0.49	1.41	8,650.38
2011 TOTALS (lbs/day unmitigated)	59.42	71.24	69.17	0.04	0.19	4.87	5.06	0.07	4.47	4.54	10,280.05
2011 TOTALS (lbs/day mitigated)	47.23	61.74	69.17	0.04	0.19	0.67	0.86	0.07	0.61	0.67	10,280.05

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	2.52	3.29	5.82	0.00	0.02	0.02	3,903.06

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	114.82	223.33	1,423.93	1.29	108.25	25.95	131,049.05

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	117.34	226.62	1,429.75	1.29	108.27	25.97	134,952.11

Construction Unmitigated Detail Report:

## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 6/1/2010-7/15/2010 Active Days: 39	7.92	<u>66.68</u>	35.62	0.00	<u>80.01</u>	3.16	<u>83.18</u>	<u>16.71</u>	2.91	<u>19.62</u>	6,265.21
Mass Grading 06/01/2010- 07/15/2010	7.92	66.68	35.62	0.00	80.01	3.16	83.18	16.71	2.91	19.62	6,265.21
Mass Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Mass Grading Off Road Diesel	7.82	66.51	32.47	0.00	0.00	3.15	3.15	0.00	2.90	2.90	5,968.72
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.17	3.15	0.00	0.01	0.01	0.02	0.01	0.01	0.01	296.49
Time Slice 7/16/2010-7/31/2010 Active Days: 14	5.57	46.96	25.12	0.00	80.01	2.22	82.23	16.71	2.04	18.75	4,415.65
Fine Grading 07/16/2010- 08/01/2010	5.57	46.96	25.12	0.00	80.01	2.22	82.23	16.71	2.04	18.75	4,415.65
Fine Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Fine Grading Off Road Diesel	5.51	46.83	22.91	0.00	0.00	2.21	2.21	0.00	2.04	2.04	4,208.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54
Time Slice 8/2/2010-11/30/2010 Active Days: 104	9.57	59.01	60.64	0.03	0.17	3.78	3.94	0.06	3.47	3.52	8,584.39
Building 08/02/2010-05/15/2011	9.57	59.01	60.64	0.03	0.17	3.78	3.94	0.06	3.47	3.52	8,584.39
Building Off Road Diesel	8.32	52.40	28.32	0.00	0.00	3.50	3.50	0.00	3.22	3.22	4,990.93
Building Vendor Trips	0.39	5.08	4.36	0.01	0.04	0.20	0.23	0.01	0.18	0.19	958.30
Building Worker Trips	0.86	1.54	27.96	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,635.16

**10/20/2008 2:36:09 PM**Time Slice 12/1/2010-12/31/2010  
Active Days: 27

Building 08/02/2010-05/15/2011	57.27	59.05	61.34	0.04	0.17	3.78	3.95	0.06	3.47	3.53	<u>8,650.38</u>
Building Off Road Diesel	9.57	59.01	60.64	0.03	0.17	3.78	3.94	0.06	3.47	3.52	8,584.39
Building Vendor Trips	8.32	52.40	28.32	0.00	0.00	3.50	3.50	0.00	3.22	3.22	4,990.93
Building Worker Trips	0.39	5.08	4.36	0.01	0.04	0.20	0.23	0.01	0.18	0.19	958.30
Coating 12/01/2010-05/31/2011	0.86	1.54	27.96	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,635.16
Architectural Coating	47.70	0.04	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	65.98
Coating Worker Trips	47.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 1/1/2011-2/28/2011	0.02	0.04	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	65.98
Active Days: 50	56.56	55.22	58.10	0.04	0.17	3.56	3.73	0.06	3.27	3.33	8,651.85
Building 08/02/2010-05/15/2011	8.87	55.18	57.45	0.03	0.17	3.56	3.72	0.06	3.27	3.33	8,585.83
Building Off Road Diesel	7.72	49.20	27.76	0.00	0.00	3.31	3.31	0.00	3.04	3.04	4,990.93
Building Vendor Trips	0.37	4.60	4.05	0.01	0.04	0.18	0.22	0.01	0.16	0.18	958.53
Building Worker Trips	0.78	1.38	25.65	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,636.36
Coating 12/01/2010-05/31/2011	47.69	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Architectural Coating	47.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01



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Time Slice 3/1/2011-5/14/2011  
Active Days: 65

Asphalt 03/01/2011-05/31/2011	<u>59.42</u>	<u>71.24</u>	<u>99.17</u>	<u>0.04</u>	<u>0.19</u>	<u>4.87</u>	<u>5.06</u>	<u>0.07</u>	<u>4.47</u>	<u>4.54</u>	<u>10,280.05</u>
Paving Off-Gas	2.86	16.03	11.07	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,628.21
Paving Off Road Diesel	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving On Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving Worker Trips	0.12	1.73	0.59	0.00	0.01	0.07	0.07	0.00	0.06	0.06	258.99
Building 08/02/2010-05/15/2011	0.07	0.12	2.31	0.00	0.01	0.01	0.02	0.00	0.01	0.01	237.30
Building Off Road Diesel	8.87	55.18	57.45	0.03	0.17	3.56	3.72	0.06	3.27	3.33	8,585.83
Building Vendor Trips	7.72	49.20	27.76	0.00	0.00	3.31	3.31	0.00	3.04	3.04	4,990.93
Building Worker Trips	0.37	4.60	4.05	0.01	0.04	0.18	0.22	0.01	0.16	0.18	958.53
Coating 12/01/2010-05/31/2011	0.78	1.38	25.65	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,636.36
Architectural Coating	47.69	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Coating Worker Trips	47.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 5/16/2011-5/31/2011	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Active Days: 14	50.56	16.06	11.71	0.01	0.02	1.31	1.33	0.01	1.20	1.21	1,694.22
Asphalt 03/01/2011-05/31/2011	2.86	16.03	11.07	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,628.21
Paving Off-Gas	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.12	1.73	0.59	0.00	0.01	0.07	0.07	0.00	0.06	0.06	258.99
Paving Worker Trips	0.07	0.12	2.31	0.00	0.01	0.01	0.02	0.00	0.01	0.01	237.30
Coating 12/01/2010-05/31/2011	47.69	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Architectural Coating	47.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01

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Phase Assumptions

Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

3 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

Acres to be Paved: 10

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description  
Off-Road Equipment:

- 2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 4 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
- 2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 2 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130
- Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

COG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
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Time Slice 6/1/2010-7/15/2010 Active Days: 39	7.92	56.70	35.62	0.00	5.66	0.24	5.90	1.18	0.22	1.41	6,265.21
Mass Grading 06/01/2010- 07/15/2010	7.92	56.70	35.62	0.00	5.66	0.24	5.90	1.18	0.22	1.41	6,265.21
Mass Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	5.64	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	7.82	56.53	32.47	0.00	0.00	0.24	0.24	0.00	0.22	0.22	5,968.72
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.17	3.15	0.00	0.01	0.01	0.02	0.01	0.01	0.01	296.49
Time Slice 7/16/2010-7/31/2010 Active Days: 14	5.57	39.93	25.12	0.00	5.65	0.17	5.83	1.18	0.16	1.34	4,415.65
Fine Grading 07/16/2010- 08/01/2010	5.57	39.93	25.12	0.00	5.65	0.17	5.83	1.18	0.16	1.34	4,415.65
Fine Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	5.64	1.18	0.00	1.18	0.00
Fine Grading Off Road Diesel	5.51	39.81	22.91	0.00	0.00	0.17	0.17	0.00	0.15	0.15	4,208.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54
Time Slice 8/2/2010-11/30/2010 Active Days: 104	9.57	51.15	60.64	0.03	0.17	0.53	0.70	0.06	0.48	0.54	8,584.39
Building 08/02/2010-05/15/2011	9.57	51.15	60.64	0.03	0.17	0.53	0.70	0.06	0.48	0.54	8,584.39
Building Off Road Diesel	8.32	44.54	28.32	0.00	0.00	0.26	0.26	0.00	0.24	0.24	4,990.93
Building Vendor Trips	0.39	5.08	4.36	0.01	0.04	0.20	0.23	0.01	0.18	0.19	958.30
Building Worker Trips	0.86	1.54	27.96	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,635.16

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Time Slice 12/1/2010-12/31/2010  
Active Days: 27

Building 08/02/2010-05/15/2011	17.02	51.19	61.34	0.04	0.17	0.54	0.70	0.06	0.49	0.55	<u>8,650.38</u>
Building Off Road Diesel	9.57	51.15	60.64	0.03	0.17	0.53	0.70	0.06	0.48	0.54	8,584.39
Building Vendor Trips	8.32	44.54	28.32	0.00	0.00	0.26	0.26	0.00	0.24	0.24	4,990.93
Building Worker Trips	0.39	5.08	4.36	0.01	0.04	0.20	0.23	0.01	0.18	0.19	958.30
Coating 12/01/2010-05/31/2011	0.86	1.54	27.96	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,635.16
Architectural Coating	7.45	0.04	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	65.98
Coating Worker Trips	7.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 1/1/2011-2/28/2011	0.02	0.04	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	65.98
Active Days: 50	44.37	47.84	58.10	0.04	0.17	0.50	0.67	0.06	0.45	0.51	8,651.85
Building 08/02/2010-05/15/2011	8.87	47.80	57.45	0.03	0.17	0.50	0.67	0.06	0.45	0.51	8,585.83
Building Off Road Diesel	7.72	41.82	27.76	0.00	0.00	0.25	0.25	0.00	0.23	0.23	4,990.93
Building Vendor Trips	0.37	4.60	4.05	0.01	0.04	0.18	0.22	0.01	0.16	0.18	958.53
Building Worker Trips	0.78	1.38	25.65	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,636.36
Coating 12/01/2010-05/31/2011	35.50	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Architectural Coating	35.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01

**10/20/2008 2:36:09 PM**Time Slice 3/1/2011-5/14/2011  
Active Days: 65

Asphalt 03/01/2011-05/31/2011	<u>47.23</u>	<u>61.74</u>	<u>69.17</u>	<u>0.04</u>	<u>0.19</u>	<u>0.67</u>	<u>0.86</u>	<u>0.07</u>	<u>0.61</u>	<u>0.67</u>	<u>10,280.05</u>
Paving Off-Gas	2.86	13.90	11.07	0.00	0.02	0.16	0.19	0.01	0.15	0.16	1,628.21
Paving Off Road Diesel	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving On Road Diesel	2.34	12.04	8.17	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,131.92
Paving Worker Trips	0.12	1.73	0.59	0.00	0.01	0.07	0.07	0.00	0.06	0.06	258.99
Building 08/02/2010-05/15/2011	0.07	0.12	2.31	0.00	0.01	0.01	0.02	0.00	0.01	0.01	237.30
Building Off Road Diesel	8.87	47.80	57.45	0.03	0.17	0.50	0.67	0.06	0.45	0.51	8,585.83
Building Vendor Trips	7.72	41.82	27.76	0.00	0.00	0.25	0.25	0.00	0.23	0.23	4,990.93
Building Worker Trips	0.37	4.60	4.05	0.01	0.04	0.18	0.22	0.01	0.16	0.18	958.53
Coating 12/01/2010-05/31/2011	0.78	1.38	25.65	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,636.36
Architectural Coating	35.50	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Coating Worker Trips	35.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 5/16/2011-5/31/2011	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Active Days: 14	38.36	13.94	11.71	0.01	0.02	0.17	0.19	0.01	0.15	0.16	1,694.22
Asphalt 03/01/2011-05/31/2011	2.86	13.90	11.07	0.00	0.02	0.16	0.19	0.01	0.15	0.16	1,628.21
Paving Off-Gas	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	12.04	8.17	0.00	0.00	0.09	0.09	0.00	0.09	0.09	1,131.92
Paving On Road Diesel	0.12	1.73	0.59	0.00	0.01	0.07	0.07	0.00	0.06	0.06	258.99
Paving Worker Trips	0.07	0.12	2.31	0.00	0.01	0.01	0.02	0.00	0.01	0.01	237.30
Coating 12/01/2010-05/31/2011	35.50	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01
Architectural Coating	35.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.01

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Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description  
For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here



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For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

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PM10: 85% PM25: 85%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Concrete/Industrial Saws, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Concrete/Industrial Saws, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rough Terrain Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rough Terrain Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Loaders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Loaders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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## Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.24	3.25	2.73	0.00	0.01	0.01	3,897.44
Hearth - No Summer Emissions							
Landscape	0.25	0.04	3.09	0.00	0.01	0.01	5.62
Consumer Products	0.00						
Architectural Coatings	2.03						
TOTALS (lbs/day, unmitigated)	2.52	3.29	5.82	0.00	0.02	0.02	3,903.06

## Area Source Changes to Defaults

## Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Hotel	7.87	11.73	74.96	0.07	5.68	1.36	6,884.51
Casino	106.95	211.60	1,348.97	1.22	102.57	24.59	124,164.54
TOTALS (lbs/day, unmitigated)	114.82	223.33	1,423.93	1.29	108.25	25.95	131,049.05

## Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 85 Season: Summer

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Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		3.00	rooms	200.00	600.00	6,437.34
Casino		43.80	1000 sq ft	247.18	10,826.48	116,156.26
					11,426.48	122,593.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.4	1.2	98.6	0.2
Light Truck < 3750 lbs	12.1	2.5	90.9	6.6
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	7.7	15.4	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	64.1	35.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

	<u>Travel Conditions</u>				
	<u>Residential</u>		<u>Commercial</u>		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work
Urban Trip Length (miles)	12.6	12.6	12.6	12.6	12.6
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1		
% of Trips - Commercial (by land use)					
Hotel				5.0	2.5
Casino				2.0	1.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work urban trip length changed from 10.8 miles to 12.6 miles

Home-based work rural trip length changed from 16.8 miles to 12.6 miles

Home-based shop urban trip length changed from 7.3 miles to 12.6 miles

Home-based shop rural trip length changed from 7.1 miles to 12.6 miles

Home-based other urban trip length changed from 7.5 miles to 12.6 miles

Home-based other rural trip length changed from 7.9 miles to 12.6 miles

Commercial-based commute urban trip length changed from 9.5 miles to 12.6 miles

Commercial-based commute rural trip length changed from 14.7 miles to 12.6 miles

Commercial-based non-work urban trip length changed from 7.35 miles to 12.6 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 12.6 miles

Commercial-based customer urban trip length changed from 7.35 miles to 12.6 miles

Operational Changes to Defaults

Commercial-based customer rural trip length changed from 6.6 miles to 12.6 miles



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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. B Near-Term.urb924

Project Name: Northfork Alt. A Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	1.14	5.30	3.89	0.00	2.13	0.32	2.44	0.44	0.29	0.74	609.28
2010 TOTALS (tons/year mitigated)	0.84	4.54	3.89	0.00	0.16	0.03	0.19	0.03	0.03	0.06	609.28
Percent Reduction	26.19	14.32	0.00	0.00	92.67	89.59	92.27	92.48	89.68	91.37	0.00
2011 TOTALS (tons/year unmitigated)	2.28	3.65	2.99	0.00	0.01	0.25	0.26	0.00	0.23	0.23	466.74
2011 TOTALS (tons/year mitigated)	1.85	3.14	2.99	0.00	0.01	0.03	0.03	0.00	0.03	0.03	466.74
Percent Reduction	18.91	13.92	0.00	0.00	0.00	88.47	86.36	0.00	88.57	87.74	0.00

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.23	0.23	0.33	0.00	0.00	0.00	277.64

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OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	16.26	33.54	194.84	0.16	14.39	3.45	16,725.01

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	16.49	33.77	195.17	0.16	14.39	3.45	17,002.65

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. B Near-Term.urb924

Project Name: Northfork Alt. A Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (lbs/day unmitigated)	35.10	66.68	46.39	0.02	80.01	3.65	83.18	16.71	3.36	19.62	6,993.52
2010 TOTALS (lbs/day mitigated)	13.08	56.70	46.39	0.02	5.66	0.41	5.90	1.18	0.38	1.41	6,993.52
2011 TOTALS (lbs/day unmitigated)	37.31	68.52	55.43	0.02	0.11	4.75	4.87	0.04	4.37	4.41	8,622.53
2011 TOTALS (lbs/day mitigated)	30.64	59.01	55.43	0.02	0.11	0.55	0.67	0.04	0.50	0.54	8,622.53

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1.32	1.29	2.61	0.00	0.01	0.01	1,522.73

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	82.21	162.64	1,036.86	0.93	78.84	18.90	95,436.61

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	83.53	163.93	1,039.47	0.93	78.85	18.91	96,959.34

Construction Unmitigated Detail Report:

## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 6/1/2010-7/15/2010 Active Days: 39	7.92	<u>66.68</u>	35.62	0.00	<u>80.01</u>	3.16	<u>83.18</u>	<u>16.71</u>	2.91	<u>19.62</u>	6,265.21
Mass Grading 06/01/2010- 07/15/2010	7.92	66.68	35.62	0.00	80.01	3.16	83.18	16.71	2.91	19.62	6,265.21
Mass Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Mass Grading Off Road Diesel	7.82	66.51	32.47	0.00	0.00	3.15	3.15	0.00	2.90	2.90	5,968.72
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.17	3.15	0.00	0.01	0.01	0.02	0.01	0.01	0.01	296.49
Time Slice 7/16/2010-7/31/2010 Active Days: 14	5.57	46.96	25.12	0.00	80.01	2.22	82.23	16.71	2.04	18.75	4,415.65
Fine Grading 07/16/2010- 08/01/2010	5.57	46.96	25.12	0.00	80.01	2.22	82.23	16.71	2.04	18.75	4,415.65
Fine Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Fine Grading Off Road Diesel	5.51	46.83	22.91	0.00	0.00	2.21	2.21	0.00	2.04	2.04	4,208.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54
Time Slice 8/2/2010-11/30/2010 Active Days: 104	9.00	56.02	46.00	0.02	0.09	3.65	3.74	0.03	3.36	3.39	6,957.41
Building 08/02/2010-05/15/2011	9.00	56.02	46.00	0.02	0.09	3.65	3.74	0.03	3.36	3.39	6,957.41
Building Off Road Diesel	8.32	52.40	28.32	0.00	0.00	3.50	3.50	0.00	3.22	3.22	4,990.93
Building Vendor Trips	0.22	2.78	2.39	0.00	0.02	0.11	0.13	0.01	0.10	0.11	524.42
Building Worker Trips	0.47	0.84	15.30	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,442.06

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Phase Assumptions

Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

3 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

Acres to be Paved: 10

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

Off-Road Equipment:

- 2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 4 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
- 2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 2 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130
- Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
- Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

COG	NOX	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
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Time Slice 6/1/2010-7/15/2010 Active Days: 39	7.92	56.70	35.62	0.00	5.66	0.24	5.90	1.18	0.22	1.41	6,265.21
Mass Grading 06/01/2010- 07/15/2010	7.92	56.70	35.62	0.00	5.66	0.24	5.90	1.18	0.22	1.41	6,265.21
Mass Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	5.64	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	7.82	56.53	32.47	0.00	0.00	0.24	0.24	0.00	0.22	0.22	5,968.72
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.17	3.15	0.00	0.01	0.01	0.02	0.01	0.01	0.01	296.49
Time Slice 7/16/2010-7/31/2010 Active Days: 14	5.57	39.93	25.12	0.00	5.65	0.17	5.83	1.18	0.16	1.34	4,415.65
Fine Grading 07/16/2010- 08/01/2010	5.57	39.93	25.12	0.00	5.65	0.17	5.83	1.18	0.16	1.34	4,415.65
Fine Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	5.64	1.18	0.00	1.18	0.00
Fine Grading Off Road Diesel	5.51	39.81	22.91	0.00	0.00	0.17	0.17	0.00	0.15	0.15	4,208.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54
Time Slice 8/2/2010-11/30/2010 Active Days: 104	9.00	48.16	46.00	0.02	0.09	0.41	0.50	0.03	0.37	0.41	6,957.41
Building 08/02/2010-05/15/2011	9.00	48.16	46.00	0.02	0.09	0.41	0.50	0.03	0.37	0.41	6,957.41
Building Off Road Diesel	8.32	44.54	28.32	0.00	0.00	0.26	0.26	0.00	0.24	0.24	4,990.93
Building Vendor Trips	0.22	2.78	2.39	0.00	0.02	0.11	0.13	0.01	0.10	0.11	524.42
Building Worker Trips	0.47	0.84	15.30	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,442.06

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Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description  
For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

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For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:



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PM10: 85% PM25: 85%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Concrete/Industrial Saws, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Concrete/Industrial Saws, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rough Terrain Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rough Terrain Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Loaders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Loaders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.09	1.27	1.06	0.00	0.00	0.00	1,519.92
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	1.11						
TOTALS (lbs/day, unmitigated)	1.32	1.29	2.61	0.00	0.01	0.01	1,522.73

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Casino	82.21	162.64	1,036.86	0.93	78.84	18.90	95,436.61
TOTALS (lbs/day, unmitigated)	82.21	162.64	1,036.86	0.93	78.84	18.90	95,436.61

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Casino		43.80	1000 sq ft	189.99	8,321.56	89,281.21
					8,321.56	89,281.21

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.4	1.2	98.6	0.2
Light Truck < 3750 lbs	12.1	2.5	90.9	6.6
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	7.7	15.4	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	64.1	35.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Casino

2.0

1.0

97.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work urban trip length changed from 10.8 miles to 12.6 miles

Home-based work rural trip length changed from 16.8 miles to 12.6 miles

Home-based shop urban trip length changed from 7.3 miles to 12.6 miles

Home-based shop rural trip length changed from 7.1 miles to 12.6 miles

Home-based other urban trip length changed from 7.5 miles to 12.6 miles

Home-based other rural trip length changed from 7.9 miles to 12.6 miles

Commercial-based commute urban trip length changed from 9.5 miles to 12.6 miles

Commercial-based commute rural trip length changed from 14.7 miles to 12.6 miles

Commercial-based non-work urban trip length changed from 7.35 miles to 12.6 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 12.6 miles

Commercial-based customer urban trip length changed from 7.35 miles to 12.6 miles

Commercial-based customer rural trip length changed from 6.6 miles to 12.6 miles

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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. B Cumulative.urb924

Project Name: Northfork Alt. A Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.23	0.23	0.33	0.00	0.00	0.00	277.64

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	5.97	7.32	61.80	0.16	13.89	3.00	16,589.05

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	6.20	7.55	62.13	0.16	13.89	3.00	16,866.69

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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. C Near-Term.urb924

Project Name: Northfork Alt. C Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	1.30	5.47	4.34	0.00	2.01	0.34	0.42	0.32	0.74	650.65
2010 TOTALS (tons/year mitigated)	0.93	4.69	4.34	0.00	0.15	0.04	0.03	0.03	0.07	650.65
Percent Reduction	28.50	14.18	0.00	0.00	92.59	89.19	92.34	89.29	91.03	0.00
2011 TOTALS (tons/year unmitigated)	2.78	4.04	3.50	0.00	0.01	0.28	0.00	0.26	0.26	529.60
2011 TOTALS (tons/year mitigated)	2.25	3.48	3.50	0.00	0.01	0.03	0.00	0.03	0.03	529.60
Percent Reduction	19.29	13.85	0.00	0.00	0.00	88.29	0.00	88.40	87.51	0.00

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.32	0.43	0.91	0.00	0.00	0.00	502.74
TOTALS (tons/year, mitigated)	0.31	0.34	0.84	0.00	0.00	0.00	402.39
Percent Reduction	3.13	20.93	7.69	NaN	NaN	NaN	19.96



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## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	21.58	39.05	231.60	0.18	16.41	3.95	19,153.59
TOTALS (tons/year, mitigated)	21.58	39.05	231.60	0.18	16.41	3.95	19,153.59
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	21.90	39.48	232.51	0.18	16.41	3.95	19,656.33
TOTALS (tons/year, mitigated)	21.89	39.39	232.44	0.18	16.41	3.95	19,555.98
Percent Reduction	0.05	0.23	0.03	0.00	0.00	0.00	0.51

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Urbemis 2007 Version 9.2.4

## Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. C Near-Term.urb924

Project Name: Northfork Alt. C Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (lbs/day unmitigated)	43.28	63.22	55.69	0.02	80.01	4.26	82.70	16.71	3.92	19.19	8,085.43
2010 TOTALS (lbs/day mitigated)	15.80	54.42	55.69	0.02	5.65	0.49	5.86	1.18	0.45	1.37	8,085.43
2011 TOTALS (lbs/day unmitigated)	45.35	75.33	64.27	0.03	0.14	5.33	5.46	0.05	4.90	4.94	9,714.64
2011 TOTALS (lbs/day mitigated)	37.02	64.92	64.27	0.03	0.14	0.63	0.76	0.05	0.57	0.62	9,714.64

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	2.05	2.37	8.10	0.00	0.02	0.02	2,760.44
TOTALS (lbs/day, mitigated)	2.01	1.91	7.72	0.00	0.02	0.02	2,210.60
Percent Reduction	1.95	19.41	4.69	NaN	0.00	0.00	19.92

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## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	108.30	189.41	1,220.81	1.07	89.92	21.61	109,273.92
TOTALS (lbs/day, mitigated)	108.30	189.41	1,220.81	1.07	89.92	21.61	109,273.92
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	110.35	191.78	1,228.91	1.07	89.94	21.63	112,034.36
TOTALS (lbs/day, mitigated)	110.31	191.32	1,228.53	1.07	89.94	21.63	111,484.52
Percent Reduction	0.04	0.24	0.03	0.00	0.00	0.00	0.49

## Construction Unmitigated Detail Report

## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 6/1/2010-7/15/2010 Active Days: 39	6.62	54.98	29.86	0.00	<u>80.01</u>	2.69	<u>82.70</u>	<u>16.71</u>	2.48	<u>19.19</u>	5,082.37
Mass Grading 06/01/2010- 07/15/2010	6.62	54.98	29.86	0.00	80.01	2.69	82.70	16.71	2.48	19.19	5,082.37
Mass Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Mass Grading Off Road Diesel	6.55	54.86	27.66	0.00	0.00	2.69	2.69	0.00	2.47	2.47	4,874.83
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54

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Time Slice 5/16/2011-5/31/2011 Active Days: 14	35.42	16.05	11.51	0.01	0.02	1.31	1.33	0.01	1.20	1.21	1,673.27
Asphalt 03/01/2011-05/31/2011	2.86	16.03	11.07	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,628.21
Paving Off-Gas	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.12	1.73	0.59	0.00	0.01	0.07	0.07	0.00	0.06	0.06	258.99
Paving Worker Trips	0.07	0.12	2.31	0.00	0.01	0.01	0.02	0.00	0.01	0.01	237.30
Coating 12/01/2010-05/31/2011	32.56	0.02	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.06
Architectural Coating	32.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.06

Phase Assumptions

Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

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20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

Acres to be Paved: 10

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

Off-Road Equipment:

- 2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day
- 4 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
- 2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 2 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130



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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130  
 Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250  
 Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

## Construction Mitigated Detail Report:

## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO <sub>2</sub>	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO <sub>2</sub>
Time Slice 6/1/2010-7/15/2010 Active Days: 39	6.62	46.76	29.86	0.00	5.65	0.21	5.86	1.18	0.19	1.37	5,082.37
Mass Grading 06/01/2010- 07/15/2010	6.62	46.76	29.86	0.00	5.65	0.21	5.86	1.18	0.19	1.37	5,082.37
Mass Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	5.64	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	6.55	46.63	27.66	0.00	0.00	0.20	0.20	0.00	0.19	0.19	4,874.83
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54
Time Slice 7/16/2010-7/30/2010 Active Days: 11	5.57	39.93	25.12	0.00	5.65	0.17	5.83	1.18	0.16	1.34	4,415.65
Fine Grading 07/16/2010- 08/01/2010	5.57	39.93	25.12	0.00	5.65	0.17	5.83	1.18	0.16	1.34	4,415.65
Fine Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	5.64	1.18	0.00	1.18	0.00
Fine Grading Off Road Diesel	5.51	39.81	22.91	0.00	0.00	0.17	0.17	0.00	0.15	0.15	4,208.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	2.20	0.00	0.01	0.01	0.02	0.00	0.00	0.01	207.54

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Time Slice 3/1/2011-5/14/2011  
Active Days: 65

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Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description  
For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

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For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

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PM10: 85% PM25: 85%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Concrete/Industrial Saws, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Concrete/Industrial Saws, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rough Terrain Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rough Terrain Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Loaders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Loaders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%



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## Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM<sub>10</sub></u>	<u>PM<sub>2.5</sub></u>	<u>CO<sub>2</sub></u>
Natural Gas	0.17	2.29	1.92	0.00	0.00	0.00	2,749.20
Hearth - No Summer Emissions							
Landscape	0.49	0.08	6.18	0.00	0.02	0.02	11.24
Consumer Products	0.00						
Architectural Coatings	1.39						
TOTALS (lbs/day, unmitigated)	2.05	2.37	8.10	0.00	0.02	0.02	2,760.44

## Area Source Mitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM<sub>10</sub></u>	<u>PM<sub>2.5</sub></u>	<u>CO<sub>2</sub></u>
Natural Gas	0.13	1.83	1.54	0.00	0.00	0.00	2,199.36
Hearth - No Summer Emissions							
Landscape	0.49	0.08	6.18	0.00	0.02	0.02	11.24
Consumer Products	0.00						
Architectural Coatings	1.39						
TOTALS (lbs/day, mitigated)	2.01	1.91	7.72	0.00	0.02	0.02	2,210.60

## Area Source Mitigation Measures Selected

Mitigation DescriptionPercent Reduction

Commercial Increase Energy Efficiency Beyond Title 24

20.00

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	7.82	11.29	74.48	0.06	5.14	1.24	6,301.63
Fast food rest. w/ drive thru	12.00	21.05	136.20	0.12	9.96	2.40	12,117.02
Free-standing discount superstore	52.59	93.52	601.43	0.53	44.55	10.70	54,095.44
Discount club	35.89	63.55	408.70	0.36	30.27	7.27	36,759.83
TOTALS (lbs/day, unmitigated)	108.30	189.41	1,220.81	1.07	89.92	21.61	109,273.92

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Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	7.82	11.29	74.48	0.06	5.14	1.24	6,301.63
Fast food rest. w/ drive thru	12.00	21.05	136.20	0.12	9.96	2.40	12,117.02
Free-standing discount superstore	52.59	93.52	601.43	0.53	44.55	10.70	54,095.44
Discount club	35.89	63.55	408.70	0.36	30.27	7.27	36,759.83
TOTALS (lbs/day, mitigated)	108.30	189.41	1,220.81	1.07	89.92	21.61	109,273.92

Operational Mitigation Options Selected

Residential Mitigation Measures

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

The Presence of Local-Serving Retail checkbox was selected.

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
High turnover (sit-down) rest.		127.15	1000 sq ft	9.00	1,144.35	5,810.78
Fast food rest. w/ drive thru		496.12	1000 sq ft	3.00	1,488.36	11,270.76
Free-standing discount superstore		49.21	1000 sq ft	125.00	6,151.25	50,417.49
Discount club		41.80	1000 sq ft	100.00	4,180.00	34,260.53
					12,963.96	101,759.56

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.4	1.2	98.6	0.2
Light Truck < 3750 lbs	12.1	2.5	90.9	6.6
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	7.7	15.4	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	64.1	35.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

High turnover (sit-down) rest.

Fast food rest. w/ drive thru

Free-standing discount superstore

Discount club

	5.0	2.5	92.5
	5.0	2.5	92.5
	2.0	1.0	97.0
	2.0	1.0	97.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work urban trip length changed from 10.8 miles to 12.6 miles

Home-based work rural trip length changed from 16.8 miles to 12.6 miles

Home-based shop urban trip length changed from 7.3 miles to 12.6 miles

Home-based shop rural trip length changed from 7.1 miles to 12.6 miles

Home-based other urban trip length changed from 7.5 miles to 12.6 miles

Home-based other rural trip length changed from 7.9 miles to 12.6 miles

Commercial-based commute urban trip length changed from 9.5 miles to 12.6 miles

Commercial-based commute rural trip length changed from 14.7 miles to 12.6 miles

Commercial-based non-work urban trip length changed from 7.35 miles to 12.6 miles

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Operational Changes to Defaults

Commercial-based non-work rural trip length changed from 6.6 miles to 12.6 miles

Commercial-based customer urban trip length changed from 7.35 miles to 12.6 miles

Commercial-based customer rural trip length changed from 6.6 miles to 12.6 miles

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. D Near-Term.urb924

Project Name: Northfork Alt. D Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	0.21	1.30	0.84	0.00	2.12	0.07	2.19	0.44	0.07	0.51	138.91
2010 TOTALS (tons/year mitigated)	0.17	1.11	0.84	0.00	0.15	0.01	0.16	0.03	0.01	0.04	138.91
Percent Reduction	19.01	14.60	0.00	0.00	92.90	90.68	92.83	92.87	90.74	92.59	0.00
2011 TOTALS (tons/year unmitigated)	0.41	1.15	0.84	0.00	0.00	0.08	0.09	0.00	0.08	0.08	131.48
2011 TOTALS (tons/year mitigated)	0.35	0.99	0.84	0.00	0.00	0.01	0.01	0.00	0.01	0.01	131.48
Percent Reduction	14.28	13.70	0.00	0.00	0.00	88.14	86.55	0.00	88.21	87.60	0.00

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.04	0.03	0.17	0.00	0.00	0.00	38.21



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OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	2.22	4.59	26.66	0.02	1.97	0.47	2,288.81

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	2.26	4.62	26.83	0.02	1.97	0.47	2,327.02

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Urbemis 2007 Version 9.2.4

## Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. D Near-Term.urb924

Project Name: Northfork Alt. D Near-Term

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Construction Unmitigated Detail Report:

## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 6/1/2010-7/15/2010 Active Days: 39	3.04	<b>25.06</b>	<b>13.72</b>	0.00	<b>80.01</b>	<b>1.25</b>	<b>81.26</b>	<b>16.71</b>	<b>1.15</b>	<b>17.86</b>	<b>2,365.91</b>
Mass Grading 06/01/2010- 07/15/2010	3.04	25.06	13.72	0.00	80.01	1.25	81.26	16.71	1.15	17.86	2,365.91
Mass Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.04	0.07	1.26	0.00	0.01	0.00	0.01	0.00	0.00	0.00	118.60

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Time Slice 5/16/2011-5/31/2011  
Active Days: 14

Asphalt 03/01/2011-05/31/2011	2.86	16.03	11.12	0.00	0.02	1.31	1.33	0.01	1.20	1.21	1,633.15
Paving Off-Gas	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.12	1.73	0.59	0.00	0.01	0.07	0.07	0.00	0.06	0.06	258.99
Paving Worker Trips	0.07	0.12	2.31	0.00	0.01	0.01	0.02	0.00	0.01	0.01	237.30
Coating 12/01/2010-05/31/2011	3.57	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.94
Architectural Coating	3.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.94

Phase Assumptions

Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

Total Acres Disturbed: 44

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

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20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

Acres to be Paved: 10

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 6/1/2010-7/15/2010 Active Days: 39	3.04	21.31	13.72	0.00	5.65	0.10	1.18	0.09	1.27	2,365.91
Mass Grading 06/01/2010-07/15/2010	3.04	21.31	13.72	0.00	5.65	0.10	1.18	0.09	1.27	2,365.91
Mass Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	3.00	21.24	12.46	0.00	0.00	0.09	0.00	0.09	0.09	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.04	0.07	1.26	0.00	0.01	0.00	0.00	0.00	0.00	118.60
Time Slice 7/16/2010-7/31/2010 Active Days: 14	3.04	21.31	13.72	0.00	5.65	0.10	1.18	0.09	1.27	2,365.91
Fine Grading 07/16/2010-08/01/2010	3.04	21.31	13.72	0.00	5.65	0.10	1.18	0.09	1.27	2,365.91
Fine Grading Dust	0.00	0.00	0.00	0.00	5.64	0.00	1.18	0.00	1.18	0.00
Fine Grading Off Road Diesel	3.00	21.24	12.46	0.00	0.00	0.09	0.00	0.09	0.09	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.07	1.26	0.00	0.01	0.00	0.00	0.00	0.00	118.60
Time Slice 8/2/2010-11/30/2010 Active Days: 104	1.30	8.29	7.23	0.00	0.01	0.06	0.00	0.06	0.06	1,162.50
Building 08/02/2010-05/15/2011	1.30	8.29	7.23	0.00	0.01	0.06	0.00	0.06	0.06	1,162.50
Building Off Road Diesel	1.21	7.79	4.81	0.00	0.00	0.04	0.00	0.04	0.04	893.39
Building Vendor Trips	0.03	0.38	0.33	0.00	0.00	0.01	0.00	0.01	0.01	71.77
Building Worker Trips	0.06	0.11	2.09	0.00	0.01	0.01	0.00	0.00	0.01	197.34



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Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 7/16/2010 - 8/1/2010 - Default Fine Site Grading Description  
For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Mass Grading 6/1/2010 - 7/15/2010 - Type Your Description Here

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For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Paving 3/1/2011 - 5/31/2011 - Default Paving Description

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

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PM10: 85% PM25: 85%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Building Construction 8/2/2010 - 5/15/2011 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 15% PM10: 50% PM25: 50%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2010 - 5/31/2011 - Default Architectural Coating Description

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

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ROG: 10%

## Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Natural Gas	0.01	0.17	0.15	0.00	0.00	0.00	208.00
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.15						
TOTALS (lbs/day, unmitigated)	0.28	0.19	1.70	0.00	0.01	0.01	210.81

## Area Source Changes to Defaults

## Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>25</sub>	CO <sub>2</sub>
Casino	11.25	22.26	141.89	0.13	10.79	2.59	13,060.43
TOTALS (lbs/day, unmitigated)	11.25	22.26	141.89	0.13	10.79	2.59	13,060.43

## Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 85 Season: Summer

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Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Casino		43.80	1000 sq ft	26.00	1,138.80	12,218.07
					1,138.80	12,218.07

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.4	1.2	98.6	0.2
Light Truck < 3750 lbs	12.1	2.5	90.9	6.6
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	7.7	15.4	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	64.1	35.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Vehicle Fleet Mix



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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Casino

2.0 1.0 97.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work urban trip length changed from 10.8 miles to 12.6 miles

Home-based work rural trip length changed from 16.8 miles to 12.6 miles

Home-based shop urban trip length changed from 7.3 miles to 12.6 miles

Home-based shop rural trip length changed from 7.1 miles to 12.6 miles

Home-based other urban trip length changed from 7.5 miles to 12.6 miles

Home-based other rural trip length changed from 7.9 miles to 12.6 miles

Commercial-based commute urban trip length changed from 9.5 miles to 12.6 miles

Commercial-based commute rural trip length changed from 14.7 miles to 12.6 miles

Commercial-based non-work urban trip length changed from 7.35 miles to 12.6 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 12.6 miles

Commercial-based customer urban trip length changed from 7.35 miles to 12.6 miles

Commercial-based customer rural trip length changed from 6.6 miles to 12.6 miles

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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. A Cumulative.urb924

Project Name: Northfork Alt. A Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.43	0.59	0.78	0.00	0.00	0.00	711.79

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	8.30	10.05	84.88	0.22	19.07	4.12	22,779.33

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	8.73	10.64	85.66	0.22	19.07	4.12	23,491.12

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Urbemis 2007 Version 9.2.4

## Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. A Cumulative.urb924

Project Name: Northfork Alt. A Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## Summary Report

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	2.52	3.29	5.82	0.00	0.02	0.02	3,903.06

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	43.11	48.25	459.07	1.27	104.49	22.55	130,325.98

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	45.63	51.54	464.89	1.27	104.51	22.57	134,229.04

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Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM<sub>10</sub></u>	<u>PM<sub>2.5</sub></u>	<u>CO<sub>2</sub></u>
Natural Gas	0.24	3.25	2.73	0.00	0.01	0.01	3,897.44
Hearth - No Summer Emissions							
Landscape	0.25	0.04	3.09	0.00	0.01	0.01	5.62
Consumer Products	0.00						
Architectural Coatings	2.03						
TOTALS (lbs/day, unmitigated)	2.52	3.29	5.82	0.00	0.02	0.02	3,903.06

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM<sub>10</sub></u>	<u>PM<sub>25</sub></u>	<u>CO<sub>2</sub></u>
Hotel	3.04	2.53	24.16	0.07	5.49	1.18	6,846.54
Casino	40.07	45.72	434.91	1.20	99.00	21.37	123,479.44
TOTALS (lbs/day, unmitigated)	43.11	48.25	459.07	1.27	104.49	22.55	130,325.98

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 85 Season: Summer

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		3.00	rooms	200.00	600.00	6,437.34
Casino		43.80	1000 sq ft	247.18	10,826.48	116,156.26
					11,426.48	122,593.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.0	100.0	0.0
Light Truck < 3750 lbs	12.1	0.0	99.2	0.8
Light Truck 3751-5750 lbs	21.3	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.9	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	79.2	20.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Hotel	5.0	2.5	92.5
Casino	2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. B Cumulative.urb924

Project Name: Northfork Alt. B Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.23	0.23	0.33	0.00	0.00	0.00	277.64

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	5.97	7.32	61.80	0.16	13.89	3.00	16,589.05

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	6.20	7.55	62.13	0.16	13.89	3.00	16,866.69



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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. B Cumulative.urb924

Project Name: Northfork Alt. B Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1.32	1.29	2.61	0.00	0.01	0.01	1,522.73

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	30.80	35.14	334.28	0.92	76.10	16.42	94,910.03

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	32.12	36.43	336.89	0.92	76.11	16.43	96,432.76

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## Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.09	1.27	1.06	0.00	0.00	0.00	1,519.92
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	1.11						
TOTALS (lbs/day, unmitigated)	1.32	1.29	2.61	0.00	0.01	0.01	1,522.73

Area Source Changes to Defaults

## Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Casino	30.80	35.14	334.28	0.92	76.10	16.42	94,910.03
TOTALS (lbs/day, unmitigated)	30.80	35.14	334.28	0.92	76.10	16.42	94,910.03

## Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Land Use Type	Acreage	Trp Rate	Unit Type	No. Units	Total Trips	Total VMT
Casino		43.80	1000 sq ft	189.99	8,321.56	89,281.21
					8,321.56	89,281.21

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.0	100.0	0.0
Light Truck < 3750 lbs	12.1	0.0	99.2	0.8
Light Truck 3751-5750 lbs	21.3	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.9	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	79.2	20.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Urban Trip Length (miles)	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
0-1	12.6	12.6	12.6	12.6	12.6	12.6

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	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Casino				2.0	1.0	97.0

Off-Road Vehicle Emissions Based on: OFFROAD2007

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.32	0.43	0.91	0.00	0.00	0.00	502.74
TOTALS (tons/year, mitigated)	0.31	0.34	0.84	0.00	0.00	0.00	402.39
Percent Reduction	3.13	20.93	7.69	NaN	NaN	NaN	19.96

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	8.19	8.98	74.05	0.18	15.84	3.43	19,498.13
TOTALS (tons/year, mitigated)	8.18	8.89	73.98	0.18	15.84	3.43	19,397.78
Percent Reduction	0.12	1.00	0.09	0.00	0.00	0.00	0.51

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. C Cumulative.urb924

Project Name: Northfork Alt. C Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	2.05	2.37	8.10	0.00	0.02	0.02	2,760.44
TOTALS (lbs/day, mitigated)	2.01	1.91	7.72	0.00	0.02	0.02	2,210.60
Percent Reduction	1.95	19.41	4.69	NaN	0.00	0.00	19.92

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	40.19	41.10	392.25	1.06	86.80	18.78	108,656.00
TOTALS (lbs/day, mitigated)	40.19	41.10	392.25	1.06	86.80	18.78	108,656.00
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	42.24	43.47	400.35	1.06	86.82	18.80	111,416.44
TOTALS (lbs/day, mitigated)	42.20	43.01	399.97	1.06	86.82	18.80	110,866.60
Percent Reduction	0.09	1.06	0.09	0.00	0.00	0.00	0.49



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## Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM<sub>10</sub></u>	<u>PM<sub>2.5</sub></u>	<u>CO<sub>2</sub></u>
Natural Gas	0.17	2.29	1.92	0.00	0.00	0.00	2,749.20
Hearth - No Summer Emissions							
Landscape	0.49	0.08	6.18	0.00	0.02	0.02	11.24
Consumer Products	0.00						
Architectural Coatings	1.39						
TOTALS (lbs/day, unmitigated)	2.05	2.37	8.10	0.00	0.02	0.02	2,760.44

## Area Source Mitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM<sub>10</sub></u>	<u>PM<sub>2.5</sub></u>	<u>CO<sub>2</sub></u>
Natural Gas	0.13	1.83	1.54	0.00	0.00	0.00	2,199.36
Hearth - No Summer Emissions							
Landscape	0.49	0.08	6.18	0.00	0.02	0.02	11.24
Consumer Products	0.00						
Architectural Coatings	1.39						
TOTALS (lbs/day, mitigated)	2.01	1.91	7.72	0.00	0.02	0.02	2,210.60

[Area Source Changes to Defaults](#)

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## Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	2.86	2.47	23.78	0.06	4.96	1.08	6,264.29
Fast food rest. w/ drive thru	4.43	4.57	43.73	0.12	9.62	2.08	12,048.32
Free-standing discount superstore	19.55	20.28	193.35	0.52	43.00	9.30	53,790.66
Discount club	13.35	13.78	131.39	0.36	29.22	6.32	36,552.73
TOTALS (lbs/day, unmitigated)	40.19	41.10	392.25	1.06	86.80	18.78	108,656.00

## Operational Mitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
High turnover (sit-down) rest.	2.86	2.47	23.78	0.06	4.96	1.08	6,264.29
Fast food rest. w/ drive thru	4.43	4.57	43.73	0.12	9.62	2.08	12,048.32
Free-standing discount superstore	19.55	20.28	193.35	0.52	43.00	9.30	53,790.66
Discount club	13.35	13.78	131.39	0.36	29.22	6.32	36,552.73
TOTALS (lbs/day, mitigated)	40.19	41.10	392.25	1.06	86.80	18.78	108,656.00

## Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
High turnover (sit-down) rest.		127.15	1000 sq ft	9.00	1,144.35	5,810.78
Fast food rest. w/ drive thru		496.12	1000 sq ft	3.00	1,488.36	11,270.76
Free-standing discount superstore		49.21	1000 sq ft	125.00	6,151.25	50,417.49
Discount club		41.80	1000 sq ft	100.00	4,180.00	34,260.53
					12,963.96	101,759.56

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.0	100.0	0.0
Light Truck < 3750 lbs	12.1	0.0	99.2	0.8
Light Truck 3751-5750 lbs	21.3	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.9	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	79.2	20.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
High turnover (sit-down) rest.				5.0	2.5	92.5
Fast food rest. w/ drive thru				5.0	2.5	92.5
Free-standing discount superstore				2.0	1.0	97.0
Discount club				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

## Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. D Cumulative.urb924

Project Name: Northfork Alt. D Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.04	0.03	0.17	0.00	0.00	0.00	38.21

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.82	1.00	8.46	0.02	1.90	0.41	2,270.20

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.86	1.03	8.63	0.02	1.90	0.41	2,308.41

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\equinn\Application Data\Urbemis\Version9a\Projects\Northfork\Northfork Alt. D Cumulative.urb924

Project Name: Northfork Alt. D Cumulative

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report: 10/20/2008 3:19:03 PM

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.28	0.19	1.70	0.00	0.01	0.01	210.81

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	4.21	4.81	45.75	0.13	10.41	2.25	12,988.37

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	4.49	5.00	47.45	0.13	10.42	2.26	13,199.18

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## Area Source Unmitigated Detail Report:

## AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.01	0.17	0.15	0.00	0.00	0.00	208.00
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.15						
TOTALS (lbs/day, unmitigated)	0.28	0.19	1.70	0.00	0.01	0.01	210.81

Area Source Changes to Defaults

## Operational Unmitigated Detail Report:

## OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Casino	4.21	4.81	45.75	0.13	10.41	2.25	12,988.37
TOTALS (lbs/day, unmitigated)	4.21	4.81	45.75	0.13	10.41	2.25	12,988.37

## Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

10/20/2008 3:19:03 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Casino		43.80	1000 sq ft	26.00	1,138.80	12,218.07
					1,138.80	12,218.07
Vehicle Fleet Mix						
Vehicle Type	Percent Type	Non-Catalyst			Catalyst	Diesel
Light Auto	42.5	0.0			100.0	0.0
Light Truck < 3750 lbs	12.1	0.0			99.2	0.8
Light Truck 3751-5750 lbs	21.3	0.0			100.0	0.0
Med Truck 5751-8500 lbs	11.9	0.0			100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0			79.2	20.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0			55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0			23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.5	0.0			0.0	100.0
Other Bus	0.1	0.0			0.0	100.0
Urban Bus	0.0	0.0			0.0	0.0
Motorcycle	3.9	33.3			66.7	0.0
School Bus	0.1	0.0			0.0	100.0
Motor Home	1.0	0.0			90.0	10.0
Travel Conditions						
Residential						
Home-Work	12.6	Home-Shop	12.6	Home-Other	Commute	Non-Work
Urban Trip Length (miles)						Customer
						12.6
						12.6



	<u>Travel Conditions</u>				
	Residential			Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work
Rural Trip Length (miles)	12.6	12.6	12.6	12.6	12.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1		
% of Trips - Commercial (by land use)					
Casino				2.0	1.0
					97.0

# **APPENDIX T**

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## *Construction Emissions Mitigation Plan*

## **Construction Emissions Mitigation Plan**

### **North Fork Construction Project**

#### ***INTRODUCTION***

The following mitigation measures are for the construction phase of development on the Madera Site or North Fork Site (as defined in the Environmental Impact Statement (EIS) prepared by the BIA). These measures will be included in the Record of Decision (ROD) issued by the Bureau of Indian Affairs (BIA) and all contracts with construction contractors and subcontractors.

The mitigation measures address reduction of oxides of nitrogen (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), reactive organic gas (ROG), carbon monoxide (CO), and Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) emissions from heavy equipment, also PM<sub>10</sub> and PM<sub>2.5</sub> emissions from fugitive dust. Adoption of these mitigations will reduce the construction air quality impacts of the construction project.

Prior to contracting with any construction contractor or subcontractor for construction on either the Madera or North Fork Sites; the Tribe shall include the following measures in the contract terms:

#### ***CONTROL MEASURES FOR FUGITIVE DUST***

- During construction, the Tribe shall comply with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII (Fugitive Dust Rules).
- Prior to the start of any construction activity on the site, the Tribe shall create a Dust Control Plan pursuant to SJVAPCD Rule 8021. Implementation of SVAPCD Rule 8021 would limit visible dust emissions to 20 percent opacity.
- In addition to full compliance with all applicable Regulation VIII requirements, the Tribe shall implement the following dust control practices, drawn from Tables 6-2 and 6-3 of SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), during construction:
  - All disturbed areas, including soil stockpiles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
  - All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
  - All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor soil stockpiles, piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Limit traffic speeds on unpaved roads to 15 mph; and
- Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

#### ***CONTROL MEASURES FOR EMISSIONS FROM EQUIPMENT AND VEHICLES***

- The Tribe shall prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. Control technologies such as particle traps control approximately 80 percent of diesel particulate matter. Specialized catalytic converters (oxidation catalysts) control approximately 20 percent of diesel particulate matter, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions.
- The Tribe shall ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use.
- The Tribe shall prohibit engine tampering to increase horsepower, except when meeting manufacturer's recommendations.
- The Tribe shall locate diesel engines, motors, and equipment staging areas as far as possible from the closest residences.
- The Tribe shall require the use of low sulfur diesel fuel (<15 parts per million sulfur) for diesel construction equipment, if available.
- The Tribe shall reduce construction-related trips of workers and equipment, including trucks. Construction traffic and parking management plan shall be developed that minimizes traffic interference and maintains traffic flow.
- The Tribe shall lease or buy newer, cleaner equipment (1996 or newer model), using a minimum of 75 percent of the equipment's total horsepower.

- The Tribe shall use lower-emitting engines and fuels, including electric, liquefied gas, hydrogen fuel cells, and/or alternative diesel formulations.

The above mitigation measure reflects measures from both the USEPA and the SJVAPCD and should be considered a comprehensive mitigation plan for the construction phase of a casino/hotel.

# **APPENDIX U**

---

*Madera County Resolution in Support of Proposed Project*

BEFORE  
THE BOARD OF SUPERVISORS  
OF THE COUNTY OF MADERA  
STATE OF CALIFORNIA

In the Matter of

NORTH FORK RANCHERIA  
OF MONO INDIANS OF  
CALIFORNIA

) Resolution No.: 2005- 169

) A RESOLUTION SUPPORTING THE  
) CONCEPT OF THE PROPOSED  
) INDIAN GAMING FACILITY ON 305  
) ACRES LOCATED NORTH OF  
) AVENUE 17, COUNTY OF MADERA

**WHEREAS**, the Board of Supervisors approved a Memorandum of Understanding (MOU) between the County of Madera (County) and the North Fork Rancheria of Mono Indians of California (Tribe) on August 16, 2004; and

**WHEREAS**, the MOU contemplates the construction of an Indian gaming facility and hotel on a 305 acre site selected by the Tribe (project); and

**WHEREAS**, the MOU provides in excess of \$87,000,000.00 in mitigations and funding for various charitable foundations, public schools and facilities over a twenty year period; and

**WHEREAS**, numerous community organizations, including, but not limited to, chambers of commerce, economic and job development organizations and public entities have voiced support for the project as sited by the Tribe, and

**WHEREAS**, the project will produce in excess of twelve hundred new jobs, paying a substantial wage and benefits, at least one-half of which must be awarded to residents of the County of Madera.

///

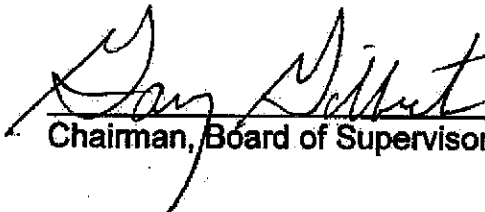
///

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Supervisors of the County of Madera, a political subdivision of the State of California, that it supports the concept of the proposed Indian gaming facility on the site selected by the Tribe, 305 acres located north of Avenue 17 in the County of Madera.

\* \* \* \* \*

The foregoing Resolution was adopted this 16<sup>th</sup> day of August, 2005, by the following vote:

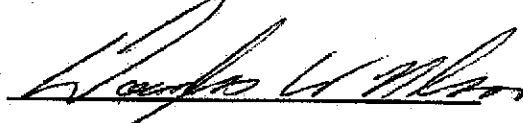
Supervisor Bigelow voted:	<u>yes</u>
Supervisor Moss voted:	<u>No</u>
Supervisor Dominici voted:	<u>yes</u>
Supervisor Rodriguez voted:	<u>yes</u>
Supervisor Gilbert voted:	<u>yes</u>

  
Chairman, Board of Supervisors

ATTEST:

  
Clerk, Board of Supervisors

Approved as to Legal Form:  
COUNTY COUNSEL

By 



# **APPENDIX V**

---

*Federal Aviation Administration "Determination of No Hazard  
to Air Navigation"*



Federal Aviation Administration  
Air Traffic Airspace Branch, ASW-520  
2601 Meacham Blvd.  
Fort Worth, TX 76137-0520

Aeronautical Study No.  
2007-AWP-62-OE

Issued Date: 01/18/2007

North Fork Mono Rancheria  
Elaine Bethel Fink  
P.O. Box 929  
Sacramento, CA 95825

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Hotel/Casino point #1
Location:	Madera, CA
Latitude:	37-0-18.86 N NAD 83
Longitude:	120-7-4.80 W
Heights:	72 feet above ground level (AGL) 324 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1 70/7460-1K.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 07/18/2008 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (310)725-6557. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2007-AWP-62-OE.

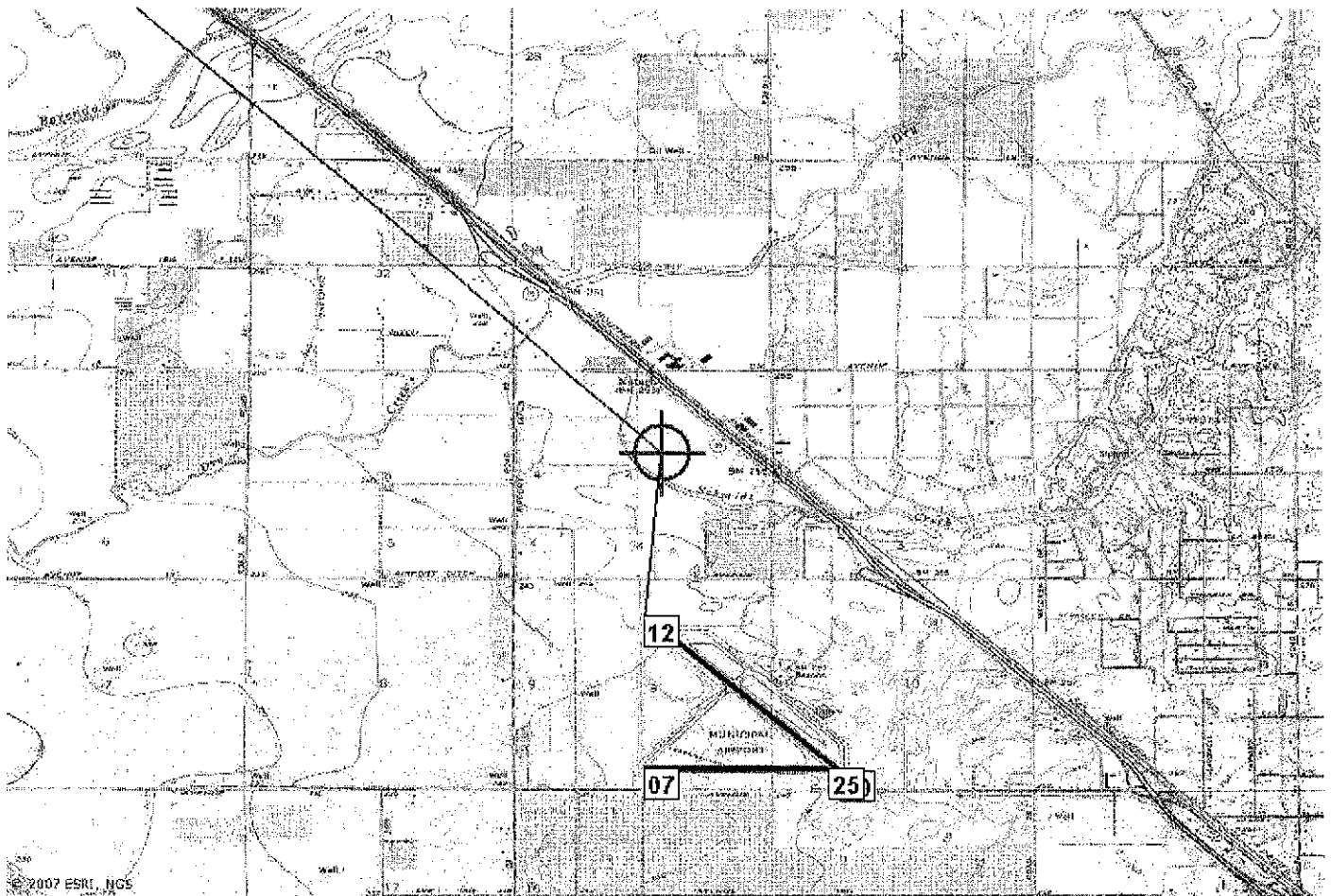
**Signature Control No: 498341-521241**

(DNE)

Karen McDonald  
Specialist

Map

Map for ASN 2007-AWP-62-OE





Federal Aviation Administration  
Air Traffic Airspace Branch, ASW-520  
2601 Meacham Blvd.  
Fort Worth, TX 76137-0520

Aeronautical Study No.  
2007-AWP-63-OE

Issued Date: 01/18/2007

North Fork Mono Rancheria  
Elaine Bethel Fink  
P.O. Box 929  
Sacramento, CA 95825

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Hotel/Casino point #2
Location:	Madera, CA
Latitude:	37-0-26.67 N NAD 83
Longitude:	120-7-1.88 W
Heights:	72 feet above ground level (AGL) 325 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1 70/7460-1K.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 07/18/2008 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (310)725-6557. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2007-AWP-63-OE.

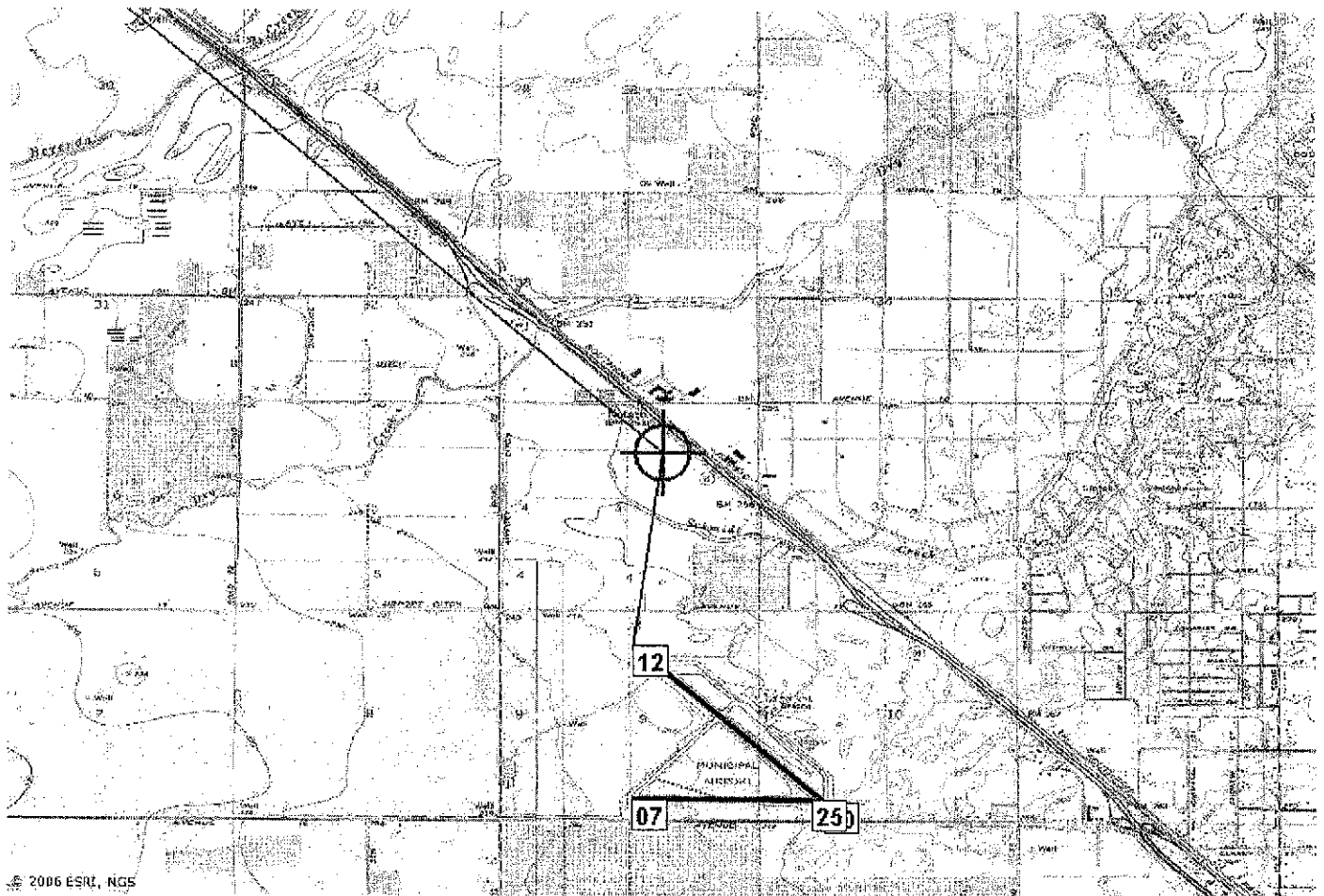
**Signature Control No: 498342-521242**

(DNE)

Karen McDonald  
Specialist

Map

Map for ASN 2007-AWP-63-OE





Federal Aviation Administration  
Air Traffic Airspace Branch, ASW-520  
2601 Meacham Blvd.  
Fort Worth, TX 76137-0520

Aeronautical Study No.  
2007-AWP-64-OE

Issued Date: 01/18/2007

North Fork Mono Rancheria  
Elaine Bethel Fink  
P.O. Box 929  
Sacramento, CA 95825

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Hotel/Casino point #3
Location:	Madera, CA
Latitude:	37-0-28.80 N NAD 83
Longitude:	120-7-10.59 W
Heights:	72 feet above ground level (AGL) 325 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1 70/7460-1K.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 07/18/2008 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.



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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (310)725-6557. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2007-AWP-64-OE.

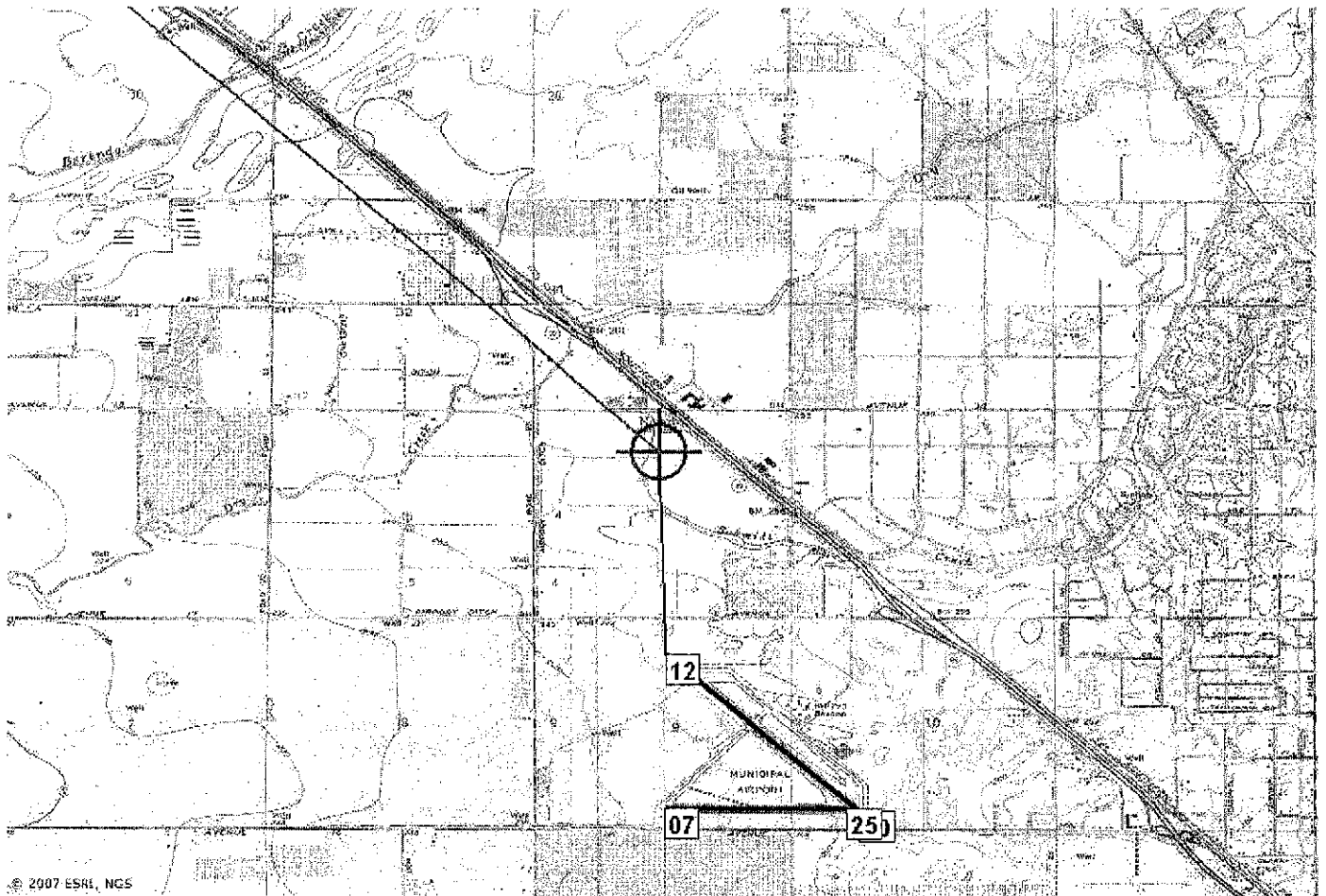
**Signature Control No: 498343-521243**

(DNE)

Karen McDonald  
Specialist

Map

Map for ASN 2007-AWP-64-OE





Federal Aviation Administration  
Air Traffic Airspace Branch, ASW-520  
2601 Meacham Blvd.  
Fort Worth, TX 76137-0520

Aeronautical Study No.  
2007-AWP-65-OE

Issued Date: 01/18/2007

North Fork Mono Rancheria  
Elaine Bethel Fink  
P.O. Box 929  
Sacramento, CA 95825

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Hotel/Casino point #4
Location:	Madera, CA
Latitude:	37-0-20.95 N NAD 83
Longitude:	120-7-13.54 W
Heights:	72 feet above ground level (AGL) 325 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1 70/7460-1K.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 07/18/2008 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (310)725-6557. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2007-AWP-65-OE.

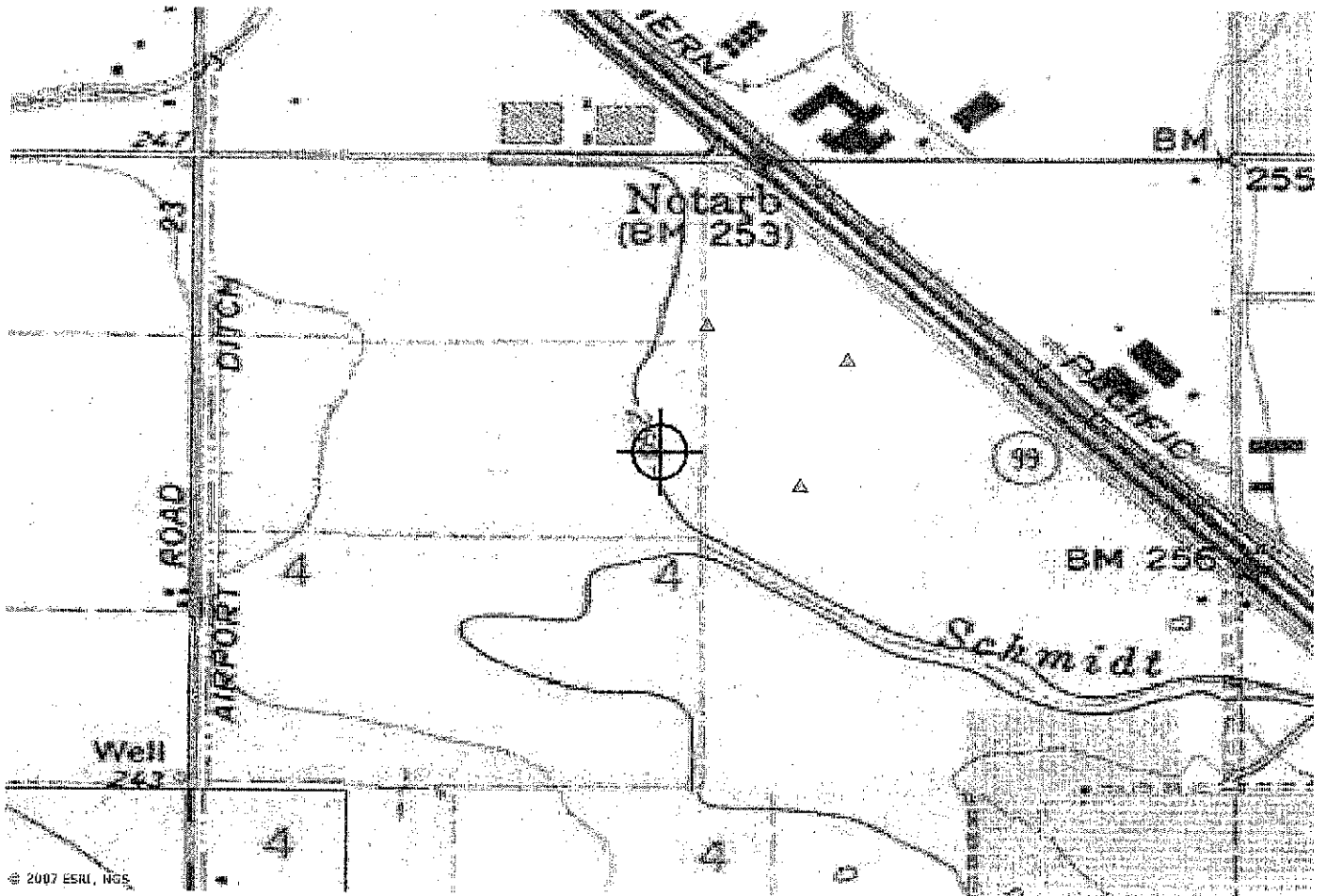
**Signature Control No: 498344-521244**

(DNE)

Karen McDonald  
Specialist

Map

Map for ASN 2007-AWP-65-OE



# **APPENDIX W**

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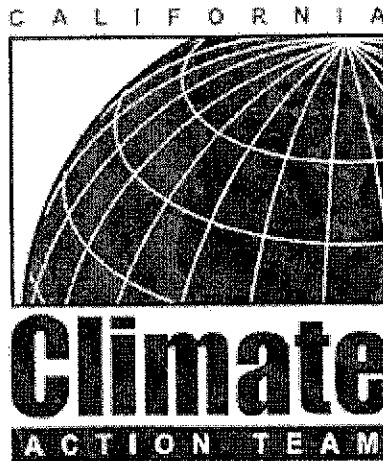
## ***CAT and CARB GHG Strategy and Early Action Measures Reports***



California Environmental Protection Agency

# **CLIMATE ACTION TEAM PROPOSED EARLY ACTIONS TO MITIGATE CLIMATE CHANGE IN CALIFORNIA**

## **Draft for Public Review**



## **INTRODUCTION: Climate Action Team Early Actions**

The California Air Resources Board, under the California Global Warming Solutions Act of 2006 (Section 38560.5 of the Health and Safety Code) has the primary responsibility for reducing Greenhouse Gas Emissions. However, actions by many other state agencies are essential to meeting the emission reduction requirements of the Act. A substantial portion of the GHG emission reductions proposed in the 2006 Climate Action Team Report to reach 1990 emission levels by 2020 are strategies to be taken by agencies other than CARB.

By July 1, 2007 the statute calls for ARB to submit a list of early action measures that can be adopted and implemented by January 1, 2010. This report supplements the ARB report on early actions and is a status report on early actions being taken by the participating departments and agencies of the Climate Action Team.

The Climate Action Team (CAT) was created and is chaired by the Secretary of the California Environmental Protection Agency. Members include: the California Environmental Protection Agency (Cal/EPA), Business Transportation and Housing Agency (BTH), California Department of Food and Agriculture (CDFA), State and Consumer Services Agency (SCSA), Air Resources Board, California Department of Forestry and Fire Protection (CalFire), California Energy Commission (CEC), Department of General Services (DGS), Department of Water Resources (DWR), Integrated Waste Management Board (IWMB) and the California Public Utilities Commission (CPUC).

All members of the CAT contributed to this report which describes ongoing and expected efforts to reduce and mitigate GHG emissions in the near term. In describing the items listed under Group 1 as "Discrete Early Actions", the CAT members considered the definition provided by the Global Warming Solutions Act of 2006. It should be noted however that only the ARB has a legal responsibility to enumerate early actions under this statute. The Group 1 items in this report are those where there is a reasonable belief that regulations would be in place by January 1, 2010. It should be noted that the Group 1 strategies of all CAT members except for ARB account for GHG emissions reductions of over 17 million metric tons of CO<sub>2</sub> equivalent by 2020 (emissions reductions for several strategies have not yet been determined).

Action items included in Group 2 are those for which a regulatory deadline of January 1, 2010 is not appropriate or achievable but where there are ongoing or expected efforts focused on GHG emissions reductions. Group 2 is titled: "Additional Early Action Measures to Reduce GHGs Already Underway or to be Initiated by CAT Members in 2007-2009". These items include many of the strategies outlined in the 2006 Climate Action Team report, additional strategies that have been formulated in the intervening months or strategies proposed by stakeholders in the development of the CARB's early action measures. The Group 2 strategies of all CAT members except for ARB account



for GHG emissions reductions of over 60 million metric tons of CO<sub>2</sub> equivalent by 2020 (emissions reductions for several strategies have not yet been determined).

There are several other items which comprise actions which, although not directly focused on GHG emission reductions, have significant co-benefits for climate change mitigation efforts. These Group 3 actions are described as: "Regulations for 2007-2009 Adoption with Potential GHG Reductions or Other Climate Co-Benefits".

### **GROUP 1: Discrete Early Action Measures:**

In describing the items listed under Group 1 as "Discrete Early Actions", the CAT members have used the definition provided by the Global Warming Solutions Act of 2006. It should be noted however that only the ARB has a legal responsibility to enumerate early actions under this statute. The Group 1 items in this report are those where there is a reasonable belief that regulations would be in place by January 1, 2010 (although there is no requirement in the law that any CAT member other than the ARB adhere to this deadline).

#### **Business, Transportation, and Housing**

- Cement Manufacture: Caltrans has changed its cement specification to allow 2.5 percent interground limestone concrete mix in cement use. This will result in a GHG emissions reduction of <1 million metric tons of CO<sub>2</sub> equivalent (MMT CO<sub>2</sub>E) per year, based on 2004 production levels. Investigations are being conducted to examine the use of concrete blends containing 5 percent interground limestone.

#### **California Department of Food & Agriculture**

- Hydrogen Fuel Standards: The CDFA Division of Measurement Standards, under SB 76 of 2005, is developing hydrogen fuel standards for use in combustion systems and fuel cells. These standards are to be completed by 2008.

#### **Air Resources Board**

- (for details see ARB report: "Early Actions for Climate Change Mitigation in California")

#### **California Energy Commission**

- SB1368 (Regulation of greenhouse gases from load serving entities): In response to SB 1368, the CEC and the CPUC have been collaborating on utility procurement practices to address ways to transition away from carbon-intensive electricity sources. The CPUC adopted its regulations for the investor-owned utilities in January, 2007. The CEC intends to adopt regulations by June, 2007

requiring municipal utilities to transition away from carbon-intensive generation. These strategies implemented by the CEC and CPUC under SB1368 are expected to result in a combined GHG emissions reduction of over 15 MMTCO<sub>2</sub>E by 2020.

- Energy Efficient Building Standards: The CEC has been actively engaged in its "Building Energy Efficiency Standards in Progress" effort. The next phase of the project is to conduct public workshops on mark-ups of the "Express Terms" of the Standards, plus the supporting technical rules for software developers and the extensive technical data appendices that are required for showing compliance. The CEC intends to adopt these regulations in 2008. The GHG emissions reductions from this strategy are still to be determined. (The GHG emissions reductions associated with ongoing energy efficient building standards are expected to be 3 MMTCO<sub>2</sub>E by 2020.)
- Energy Efficient Appliance Standards: (Specific mention of lighting standards). CEC has the authority to regulate light bulb efficiency. The California Energy Commission is considering options for light bulb standards and anticipates adopting standards by January 1, 2010. The GHG emissions reductions from this strategy are still to be determined. (The GHG emissions reductions associated with other ongoing energy efficient appliance standards are expected to be 7 MMTCO<sub>2</sub>E by 2020.)
- Tire Efficiency: Implementation of California's tire efficiency law, Chapter 8.7 Division 15 of the Public Resources Code. The CEC, in consultation with the California Integrated Waste Management Board, will implement a replacement tire efficiency program of statewide applicability for replacement tires for passenger cars and light-duty trucks, to ensure that replacement tires sold in the state are at least as energy efficient, on average, as the tires sold in the state as original equipment on these vehicles. This strategy is expected to result in GHG emissions reduction of <1 MMTCO<sub>2</sub>E by 2020.
- New Solar Homes Partnership: In late 2006, the Energy Commission approved implementation rules for new residential solar installations. Effective in January 2007, approved solar systems will receive incentive funds based on system performance above building standards. This program will result in 400 MW of new, emissions-free generating capacity. The GHG emissions reductions from this strategy are still to be determined.

## **Department of Water Resources**

- Water Use Efficiency: DWR will adopt standards for projects and programs funded through water bonds that would require consideration of water use efficiency in construction and operation. This strategy is expected to result in GHG emissions reduction of 1 MMTCO<sub>2</sub>E by 2020.
- State Water Project: DWR will evaluate the State Water Project (SWP) energy resources and include feasible and cost-effective renewable energy in the SWP's portfolio. As DWR completes a GHG assessment through membership with the Climate Action Registry, and investigations of cleaner energy sources to replace reliance on the Reid Gardner power plant (see below), the SWP will be able to

significantly reduce its GHG emissions. The GHG emissions reductions from this strategy are still to be determined.

- Cleaner Energy for Water Supply: In renewing energy supply contracts for the State Water Project, it is DWR's goal not to renew contracts supplied by conventional coal power generation. One specific example of this is DWR's ownership interest in the Reid Gardner power plant near Las Vegas, Nevada. Upon expiration of the contract in 2013, DWR will not extend its ownership interest in the Reid Gardner plant. The GHG emissions reductions from this action are still to be determined.

### **Integrated Waste Management Board**

- Landfill Gas Recovery: The IWMB is jointly developing a regulatory measure that will be implemented by ARB and will require landfill gas recovery systems on the few dozen small to medium landfills that do not have them and upgrade the requirements at landfills with existing systems to represent best capture and destruction efficiencies. Going forward this will be considered as an ARB measure. The GHG emissions reductions from these strategies are expected to be 2-4 MMTCO<sub>2</sub>E by 2020.

### **California Public Utilities Commission**

- SB1368 (Regulation of greenhouse gases from load serving entities): Please see this heading under CEC.
- IOU Energy Efficiency Programs: Planning has begun for 2009-2011 energy efficiency portfolios. In 2007, CPUC is evaluating the design of a risk/reward incentive mechanism for utilities to encourage additional investment in energy efficiency. Also in 2007, CPUC will develop new aggressive targets for efficiency between 2007 and 2020. In developing 2009-2011 portfolios, CPUC will evaluate new technologies and new measures that could deliver additional energy savings through these programs; new ideas include new options for encouraging compact fluorescent lighting in residential and commercial buildings. This strategy is expected to result in GHG emissions reduction of 4 MMTCO<sub>2</sub>E by 2020.

### **GROUP 2: Additional Early Action Measures To Reduce GHGs Already Underway or to be Initiated by CAT members in 2007-2009**

Action items included in Group 2 are those for which a regulatory deadline of January 1, 2010 is not appropriate or achievable but where there are ongoing or expected efforts focused on GHG emissions reductions. Group 2 is titled: "Additional Early Action Measures To Reduce GHGs Already Underway or to be Initiated by CAT members in 2007-2009". These items include many of the strategies outline in the 2006 Climate

Action Team report as well as additional strategies that have been formulated in the intervening months.

### **Business, Transportation, and Housing (BTH)**

- Transportation Efficiency (2006 CAT Report strategy): The Department of Transportation (Caltrans) will reduce congestion, improve travel time in congested corridors, and promote coordinated, integrated land use-transportation decisions through desired regional growth plans and smart land use measures. Caltrans will implement the Strategic Growth plan and infrastructure investment Plan, Regional Blueprint Planning, and the Caltrans Climate Action Program. This strategy is expected to result in GHG emissions reduction of 9 MMTCO<sub>2</sub>E by 2020.
- Smart Land Use and Intelligent Transportation (2006 CAT Report strategy): Caltrans will integrate consideration of GHG reduction measures and energy efficiency factors into planning, project development, etc. Caltrans is developing a Director's Policy on Climate Change and GHG emissions analysis will be integrated into transportation plans and projects. Caltrans will work with the California Transportation Commission (CTC) to include GHG emissions criteria into regional transportation planning guidelines. BTH intends to join the California Climate Action Registry which will complement efforts to determine GHG emissions from transportation. This strategy is expected to result in GHG emissions reduction of approximately 10 MMTCO<sub>2</sub>E by 2020.

### **California Department of Food & Agriculture**

- Conservation Tillage and Enteric Fermentation (2006 CAT Report strategy): With funding from ARB, CDFA will develop and implement actions to quantify and reduce enteric fermentation emissions from livestock and sequester soil carbon using cover crops and conservation tillage. This strategy is expected to result in GHG emissions reduction of 1 MMTCO<sub>2</sub>E by 2020.
- Dairy Digesters (2006 CAT Report strategy): CDFA is participating in the CCAR process to develop a dairy digester protocol to document GHG emission reductions from these facilities. The GHG emissions reductions from this action are still to be determined.

### **State and Consumer Service Agency (Department of General Services)**

#### Green Building Initiative and Other Related Efforts (2006 CAT Report strategy)

- Retro-commissioning: There are 27 retro-commissioning projects underway or completed that will yield an 8 percent to 10 percent reduction in energy usage and corresponding GHG emission reductions for each building. At least 21 more buildings will be retro-commissioned during calendar year 2007. DGS is putting substantial efforts into retro-commissioning state buildings owned and operated by DGS and other departments including: Corrections and Rehabilitation, Motor

Vehicles, Transportation, Developmental Services, Veterans Affairs, Technology Services, Parks and Recreation, Health Services, Food and Agriculture, the California Highway Patrol and the California State Lottery. This work is ongoing and will yield substantial energy savings and GHG emissions reductions in the next 18 months.

- **Development of a Tool for Automating Data Collection of Energy Usage and GHG Emissions:** The Department of General Services and the California Energy Commission have been working with US EPA Energy Star<sup>TM</sup> and the California Investor Owned Utilities to determine how to automate the uploading of utility generated energy usage data into the Energy Star<sup>TM</sup> Portfolio Manager benchmarking database. Most of the 1600 state owned buildings waiting benchmarking will have their energy usage data uploaded in this manner. Additional coordination with the Climate Action Registry will determine how to convert this information to GHG emission reductions
- **Solar Generation:** Within the last year, the State has implemented over 3 megawatts of clean solar power generation, with another 1 megawatt coming on line this year. The second round of solar generation implementation is anticipated to total 10 additional megawatts and may include UC/CSU campuses and state fairgrounds.
- **Energy Efficiency Benchmarking:** The DGS has benchmarked its 52 state-owned buildings for energy efficiency and is leading an effort to support other state agencies in benchmarking the remainder of 1,600 state-owned facilities by June 1, 2007.
- **Desktop Power Management:** The DGS has implemented server-based desktop power management software that will reduce electricity use by desktop computers by up to 40 percent. The California Environmental Protection Agency, Department of Motor Vehicles and Department of Transportation are implementing the software as well.
- **LEED Certification:** The State now has 9 buildings that are certified by the Leadership in Energy and Environmental Design (LEED) program, totaling more than 2 million square feet. LEED buildings have lower energy usage and lower GHG emissions. LEED certification is being pursued on 85 additional new and renovated buildings totaling over 5.4 million square feet, as well as eight existing buildings totaling over 2.6 million square feet. Additionally, all smaller buildings less than 50,000 square feet in size are being designed and constructed to meet LEED standards.
- **Hydrogen Fuel Cells:** Initiatives are underway to incorporate clean hydrogen fuel cells in stationary applications at State facilities and as back-up generation for emergency services radios.
- **High Performance Schools:** The State has adopted new guidelines for energy and resource efficient schools and is currently processing the first applications for up to \$100 million in bond money for construction of sustainable, high performance schools.
- **Contracting for Environmentally Preferable Products:** New State contracts have been or are being created for more energy and resource efficient IT goods, copiers, low mercury florescent lamps, the California Gold Carpet Standard, and

office furniture all of which lower GHG emissions due to environmentally preferable design and manufacturing standards  
These combined strategies are expected to result in GHG emissions reduction of 2 MMTCO<sub>2</sub>E by 2020.

#### Transportation Policy Implementation (2006 CAT Report strategy)

- **Ultra Low Emission Vehicles:** A new long-term commercial rental contract was released in March 2007 requiring a minimum Ultra Low Emission Vehicle (ULEV) standard for gasoline vehicles and require alternative fuel and hybrid-electric vehicles.
- **Flex Fuel Vehicles:** The DGS fleet purchased 1,134 flex-fuel, E-85 vehicles last year. DGS will replace 800 additional vehicles this year with new, more efficient vehicles, reducing GHG emissions by 370 metric tons of CO<sub>2</sub>, .85 metric tons of Methane, and 1.14 metric tons of Nitrous Oxide. DGS has committed to purchasing at least 50 percent of new vehicles as flex-fuel vehicles by 2010.
- **Climate Registry:** The Department of General Services joined the Climate Registry on February 9, 2007. This includes the benchmarking and reduction of GHG emissions for 55 state-owned buildings totaling 15 million square feet, 100 leased buildings totaling 1 million square feet, and over 7,000 light duty vehicles. The GHG emissions reductions from these combined strategies are still to be determined.

#### **Air Resources Board**

- (for details see ARB report: "Early Actions for Climate Change Mitigation in California")

#### **California Department of Forestry & Fire Protection**

- Urban Forestry (2006 CAT Report Strategy): CalFire is working with the U.S. Forest Service's Center for Urban Forestry Research (CUFR), CCAR and others to develop a new forestry protocol for urban forestry. An initial draft protocol outline for measuring Urban Forestry emission reductions has been completed and is being reviewed by the task group assigned. Partnering with local government and private sector entities the objective of this strategy is to expand efforts with the end result of five million additional trees in urban areas by 2020. This strategy is expected to result in GHG emissions reduction of 1 MMTCO<sub>2</sub>E by 2020.
- Fuels Management/Biomass (2006 CAT Report Strategy): CalFire is working with the Tahoe Conservancy and the California Conservation Corps on the Lake Tahoe program. Placer County is also participating to provide biomass from forest fuel treatments to existing biomass utilization facilities. This strategy is expected to result in GHG emissions reduction of 3 MMTCO<sub>2</sub>E by 2020.
- Forest Conservation and Forest Management (2006 CAT Report Strategy): CalFire is participating with the Wildlife Conservation Board and stakeholders in

discussions that include looking at opportunities for carbon sequestration in the Prop 84 forest land conservation program to conserve an additional 75,000 acres of forest landscape by 2010. CalFire is working with the U.S. Forest Service on the Lake Tahoe program, and has met to discuss other opportunities for contributing to CAT forestry goals, particularly those related to fuels management and reforestation. These combined strategies are expected to result in GHG emissions reduction of 10 MMTCO<sub>2</sub>E by 2020.

- Afforestation/Reforestation (2006 CAT Report Strategy): CalFire has met several times with the ARB to discuss carbon protocols for reforestation that have been approved by CCAR. PG&E has an accepted voluntary tariff to subsidize tree planting. Southern California Edison has contacted CalFire to discuss carbon sequestration opportunities through voluntary forest projects. This strategy is expected to result in GHG emissions reduction of 2 MMTCO<sub>2</sub>E by 2020.
- WESTCARB Activities: CalFire is working with West Coast Regional Carbon Sequestration Partnership (WESTCARB) to evaluate fuels management and biomass use. CalFire continues to work with WESTCARB to evaluate terrestrial carbon sequestration opportunities by looking at reforestation and forest conservation management at its LaTour State Forest.

## California Energy Commission

- Municipal Utilities Electricity Sector Carbon Policy (2006 CAT Report Strategy): The CPUC and the CEC have initiated a joint proceeding to provide a set of GHG emissions cap policy guidelines to the ARB for California's electricity sector as a whole (IOUs and POU's). The ARB is actively involved in this proceeding. The GHG emissions reductions from this strategy are included in the numbers associated with the efforts on SB1368, enumerated in Group 1.
- Appliance Energy Efficiency Standards in Place (2006 CAT Report Strategy): The CEC will be updating its appliance regulations to re-institute appliance and equipment efficiency certification and data collection after successfully defending California's right to require such data in federal appellate courts. This strategy is expected to result in GHG emissions reduction of 7 MMTCO<sub>2</sub>E by 2020.
- Alternative Fuels: Non-Petroleum Fuels (2006 CAT Report Strategy): The CEC is will complete, by June 30, 2007, a state plan to increase the use of alternative fuels for transportation. The plan will also evaluate alternative fuels on a full fuel-cycle assessment, set goals for 2012, 2017, and 2022 for increased alternative fuel use, and recommend policies to ensure goals are attained. The GHG emissions reductions from this strategy are still to be determined.
- Land Use/Smart Growth. CEC will be leading the Land Use/Smart Growth subgroup of the CAT. This group will investigate potential strategies related to smart growth that will be included in the 2008 CAT report. This will include examining programs such as the California Regional Blueprint Program, the Local Development / Intergovernmental Review process and transportation planning grants. The GHG emissions reductions from this strategy are still to be

determined but some portion of the reduction will fall under the BTH Smart Land use strategy enumerated above.

### **Department of Water Resources**

- Water Delivery Planning: DWR has begun a five year analysis and modeling effort to determine the impacts of climate change on California's water systems. The GHG emissions reductions from this strategy are still to be determined.
- Water-Energy Nexus: DWR will consider options that would compel local agencies to incorporate climate change adaptation into regional water planning. Such options would ensure that local agencies consider water-energy nexus in Integrated Regional Water Management Plans and construction and operation of facilities. DWR expects to include consideration of GHG emissions as a part of the application criteria for future water management plan Proposal Solicitation Processes. The GHG emissions reductions from this strategy are still to be determined.

### **Integrated Waste Management Board**

- Zero Waste/High Recycling Strategy (2006 CAT Report strategy): Building off of the successful 50% Statewide Recycling Goal, efforts to move toward zero waste through high level recycling and waste prevention are projected to provide an additional 3 MMTCO<sub>2</sub>e by 2020. In January 2007, the IWMB approved a Scope of Work for a Lifecycle Assessment and Economic Analysis to help identify which materials to focus diversion efforts to achieve both maximum diversion and GHG reduction at the lowest possible cost. This strategy is expected to result in GHG emissions reduction of 5 MMTCO<sub>2</sub>E by 2020.
- Landfill Methane Capture Strategy (2006 CAT Report strategy): The IWMB is analyzing increasing the efficiency of existing landfill methane systems and examining the implementation of earlier placement of final cover. The IWMB is collaborating with the CEC on a study to obtain field data and improve the estimates for the proposed strategy. The IWMB is conducting an emissions inventory that will be crucial in quantifying the GHG emissions reductions associated with this strategy. The GHG emissions reductions from this strategy are included in the Landfill Gas Recovery item enumerated above in Group 1.
- Organic Materials Management: IWMB will develop a market incentive program to encourage the organic materials management industry to increase organics diversion to the agricultural industry. The GHG emissions reductions from this strategy are still to be determined.
- Landfill Gas Energy: IWMB is providing funding for demonstration grants for Landfill Gas to Energy & LNG/biofuels projects. The GHG emissions reductions from this strategy are still to be determined.
- Target Recycling: IWMB is focusing on industry/public sectors with high GHG components to implement targeted commodity recycling programs. The GHG emissions reductions from this strategy are still to be determined.



## California Public Utilities Commission

- Accelerated Renewable Portfolio Standard (RPS) (2006 CAT Report Strategy): In 2006, the PUC approved the IOUs' procurement and solicitation proposals, streamlined the market price benchmark calculation used to evaluate renewable projects, and adopted RPS participation criteria for non-utility load-serving entities. In 2007, the PUC will also examine RPS long-term planning as part of utility overall procurement planning, review and act on utility RPS contracts submitted for approval, and address the use of tradable renewable energy credits for RPS compliance. The GHG emissions reductions from this strategy are included in the efforts related to SB 1368 item enumerated above in Group 1.
- California Solar Initiative. (2006 CAT Report Strategy): In late 2006, the PUC finalized implementation rules. The Initiative is designed to deliver approximately 2,000 megawatts of clean, emissions-free energy to the California grid by 2016. Beginning in January 2007, solar systems will receive incentive funds based on system performance. This strategy is expected to result in GHG emissions reduction of 1 MMTCO<sub>2</sub>E by 2020.
- Transmission Infrastructure:: The PUC will consider approval of over \$3 billion in utility transmission investment in 2007 that will help facilitate renewable goals. The Tehachapi Renewable Transmission Project is currently under review. The GHG emissions reductions from this strategy are still to be determined.
- Water Energy Issues: CPUC required energy utilities to file pilot program proposals in January 2007 to partner with water utilities to deliver energy efficiency programs. The CPUC is evaluating proposals now. New programs should encourage additional energy savings through augmentation of water conservation measures. CPUC is also considering adoption of a methodology to evaluate level of additional energy savings generated through water conservation measures. The GHG emissions reductions from this strategy are still to be determined.
- Water Conservation: CPUC adopted a Water Action Plan in December 2005. The Plan includes a number of initiatives to encourage water conservation, including: rate design reform, conservation program investment by water utilities, and partnering with energy utilities. CPUC is also acting as participating agency in the DWR Water Plan development. The GHG emissions reductions from this strategy are still to be determined.
- Additional RPS: The CPUC is evaluating options for RPS requirements beyond 20% (including 33%). CPUC is evaluating the use of renewable energy certificates (RECs) for RPS compliance. CPUC is evaluating interaction between RPS program requirements and greenhouse gas emissions cap. This is a strategy that may be amenable to a market based approach. This strategy is expected to result in GHG emissions reduction of 11 MMTCO<sub>2</sub>E by 2020.

## GROUP 3: Regulations for 2007-2009 Adoption With Potential GHG Reductions or

### **Other Climate Co-Benefits**

There are several other action items noted which comprise actions which, although not directly focused on GHG emission reductions, have significant co-benefits for climate change mitigation efforts. These Group 3 actions are described as: "Regulations for 2007-2009 Adoption with Potential GHG Reductions or Other Climate Co-Benefits".

#### **California Department of Food & Agriculture**

- Salt Recapture: The Proposition 204, Drainage Water Source Reduction, Reuse and Salt Utilization Program, will improve water use efficiency, produce salt tolerant energy crops and recapture salt from drainage as a possible energy source. This program is funded through 2011 and is also pursuing options for growing salt tolerant bio-energy crops.
- Rice Straw: The Rice Straw Tax Credit Program provides \$15 per ton of rice straw used off-field, reducing open-field burning of rice straw and methane emissions from rice straw decomposition in the field. This program is slated to sunset at the end of 2008 but CDFA is supporting current legislation to extend and expand this program.
- Dairy Management Practices: CDFA is leading the effort to develop a strategic plan for dairy research and demonstration for on-farm management practices that protect water quality and air quality. These practices go well beyond just digesters and will have ancillary global warming benefits.
- Photovoltaic Installation: The CDFA Division of Fairs and Expositions directly funds about 90% of the operating budget of the Joint Powers Authority (the Ca Construction Authority) that installs photovoltaic systems at county and agricultural fairgrounds. Over 5 MW has been installed in is operating to date, with another 3 MW that are in construction to be completed this summer.

#### **California Energy Commission**

- Report to the Legislature on AB1007 (Increased use of alternative fuels): The CEC will adopt policy recommendations based on the results of all technical analyses performed in response to AB 1007, and submit those adopted recommendations to the ARB for its use in fulfilling the requirements of AB 32. Expected reductions of GHG emissions resulting from these recommendations will be provided in the third quarter report for 2007.

#### **California Department of Forestry & Fire Protection**

- Wildfire Control Program: CalFire has developed a comprehensive program to control wildfires with the objective to control 95 percent of fires at ten acres or less through firefighting and forest management. It is estimated that every acre consumed by wildfire emits between 35 and 75 tons of carbon dioxide. Additional analysis will determine the full GHG emission reduction from this objective.

- Biomass Energy: CalFire promotes the use of wood to diversify energy supplies and is working with the CEC and CPUC on obtaining energy from forest residue (biomass). The Department is working toward the development of two small (1 megawatt) wood-to-electricity plants to demonstrate how renewable forest residue can generate energy.

#### **Department of Water Resources**

- Urban Best Management Practices: DWR will promote the implementation of Urban Best Management Practices that are locally cost-effective.

#### **Integrated Waste Management Board**

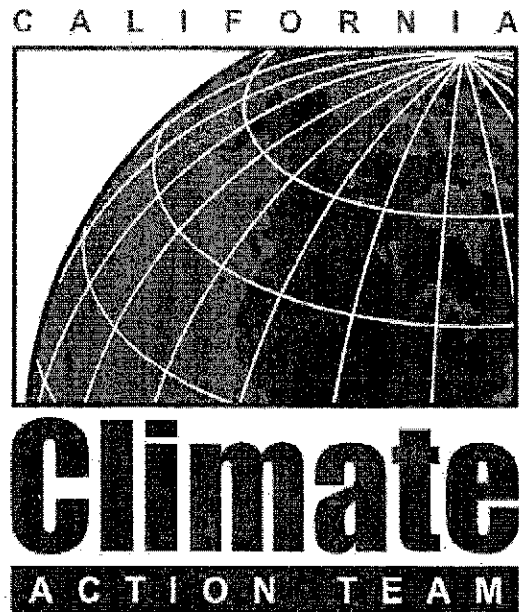
- Commercial Recycling: Focus local government efforts to require commercial recycling.
- Multi-Family Recycling: Focus local government efforts to require multi-family recycling.

#### **California Public Utilities Commission**

- Carbon Capture and Sequestration: Several proposals for power plants with integrated gasification combined cycle (IGCC) and/or carbon capture are expected in the next 18 months. If projects proposed to sell to California IOUs, CPUC would need to approve the contracts. This item falls under the auspices of SB1368. The project approval process will be handled on a case by case basis as it relates to reaching the GHG emissions goals of SB 1368.

**CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY**

**Climate Action Team Report to  
Governor Schwarzenegger and the Legislature**



**March 2006**

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## **1 INTRODUCTION**

California has a long history of environmental leadership. Motivated by the stunning natural beauty of our coastline, inland valleys, forests and mountains, as well as by the public health and environmental challenges brought on by increasing levels of pollution, California's citizens have repeatedly called for and supported measures to protect California's environmental heritage. Our political leadership and governmental institutions have responded with a variety of initiatives that restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality. Often these California initiatives have provided a benchmark and template for further action both nationally and internationally.

This tradition of environmental leadership continues to this day. In 2005, recognizing that global warming will impose compelling and extraordinary impacts on California, the Governor signed Executive Order S-3-05 which established climate change emission reduction targets for the state and set in motion a process to ensure the targets are met. This Executive Order also recognized the importance of preparedness in that it directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to lead an effort to evaluate the impacts of climate change on California and to examine adaptation measures that would best prepare the state to respond to the adverse consequences of climate change.

### **1.1 Organization of the Report**

The report begins (Section 2) with an overview of the scientific evidence regarding climate change and its potential effects in California. Section 3 outlines the long history of previous actions that California has taken to understand and address the threat of climate change. Section 4 provides an overview of the scenario analysis that was done to evaluate the impacts of climate change on California, potential adaptation measures that can be taken to best respond to those impacts, and an economic assessment of the impacts. Section 5 presents the Climate Action Team recommendations regarding strategies the state should pursue to reduce climate change emissions.

Section 6 outlines market-based options for the state and includes a discussion of design choices that need to be further evaluated prior to adoption of a market-based program for the state. Section 7 discusses all possible emission reduction implementation options that were considered by the Climate Action Team, including market-based options. Section 8 covers a broad assessment of the economic implications of state actions to reduce climate change emissions. Section 9 looks specifically at potential impacts on minority and low-income communities. Section 10 contains the Climate Action Team's recommendations to the Governor and the Legislature.

## **2 CLIMATE CHANGE OVERVIEW**

The Earth's climate has always evolved—the extremes of the 100,000-year ice-age cycles in both climate and climate change emissions over the last half million years are well documented. The period of the last 10,000 years has been warm and stable, and the last millennium, over which current societies have developed, has been one of the most stable climates observed. Yet, during the 20th century, we have observed a rapid change in the climate and climate change pollutants that is attributable to human activities.

These recent changes in climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.

It is true that levels of natural climate change pollutants have fluctuated in the past. However, there are several reasons for attributing the rise in climate change pollutants to anthropogenic, rather than natural emissions. The first indicator comes from comparing the current increase with changes that have occurred in the past.

At the end of the last ice age, the concentration of CO<sub>2</sub> increased by around 100 ppm (parts per million) over about 8,000 years, or approximately 1.25 ppm per century. Since the start of the industrial revolution, the rate of increase has accelerated markedly. The rate of CO<sub>2</sub> accumulation currently stands at around 150 ppm/century—more than 200 times faster than the background rate for the past 15,000 years.

The heat-trapping property of climate change pollutants is undisputed. Although there is uncertainty about exactly how and when the Earth's climate will respond to increasing concentrations of climate change pollutants, combining observations with climate models indicates that detectable changes are underway. There most likely are and will continue to be changes beyond global mean warming, such as changes in regional temperature extremes, precipitation, soil moisture, and sea level, all of which could have significant adverse effects on many ecological systems, as well as on human health and the economy.

This section first presents the causes and projections for climate change, then discusses climate change pollutants. It includes a definition of global warming potentials and climate change pollutants. The section concludes with a brief discussion of abrupt climate change.

### **2.1 Climate Change Causes and Projections**

Climate change is a shift in the "average weather" that a given region experiences. This is measured by changes in the features that we associate with weather, such as temperature, wind patterns, precipitation, and storms. Global climate change means change in the climate of the Earth as a whole. The Earth's natural climate has always been, and still is, constantly changing. The

climate change we are seeing today, however, differs from previous climate change in both its rate and its magnitude.

The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Naturally occurring climate change pollutants, primarily water vapor, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, absorb heat radiated from the Earth's surface. As the atmosphere warms, it in turn radiates heat back to the surface to create the greenhouse effect. The Earth's surface temperature would be about 34°C (61°F) colder than it is now if it were not for the natural heat trapping effect of climate change pollutants like CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and water vapor.

Human activities are exerting a major and growing influence on some of the key factors that govern climate by changing the composition of the atmosphere and by modifying the land surface. The concentration of CO<sub>2</sub> in the atmosphere has risen about 30 percent since the late 1800s (National Assessment Synthesis Team [NAST], 2001). This increase has resulted from the burning of coal, oil, and natural gas, and the destruction of forests around the world to provide space for agriculture and other human activities.

Global projections of population growth and assumptions about energy use indicate that the CO<sub>2</sub> concentration will continue to rise, likely reaching between two and three times its late-19th-century level by 2100. Figure 2-1 shows the atmospheric CO<sub>2</sub> concentration from year 1000 to year 2000 from ice core data and from direct atmospheric measurements during the past few decades. Projections of CO<sub>2</sub> concentrations for the period 2000 to 2100 are based on model predictions.

Figure 2-1: Past and future CO<sub>2</sub> atmospheric concentrations. (Source: IPCC 2001 Synthesis report)

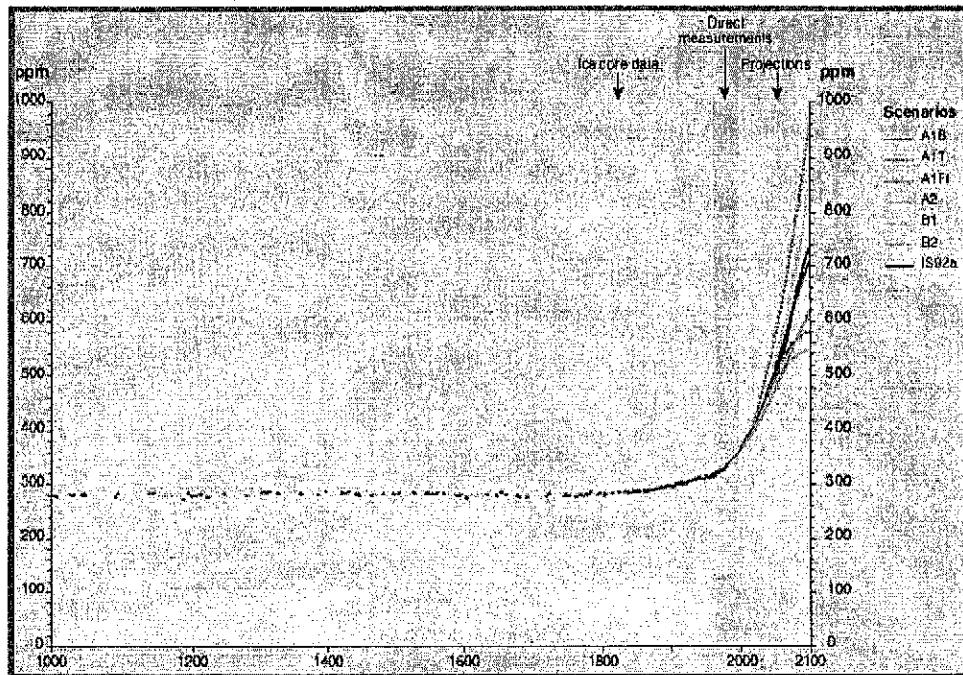
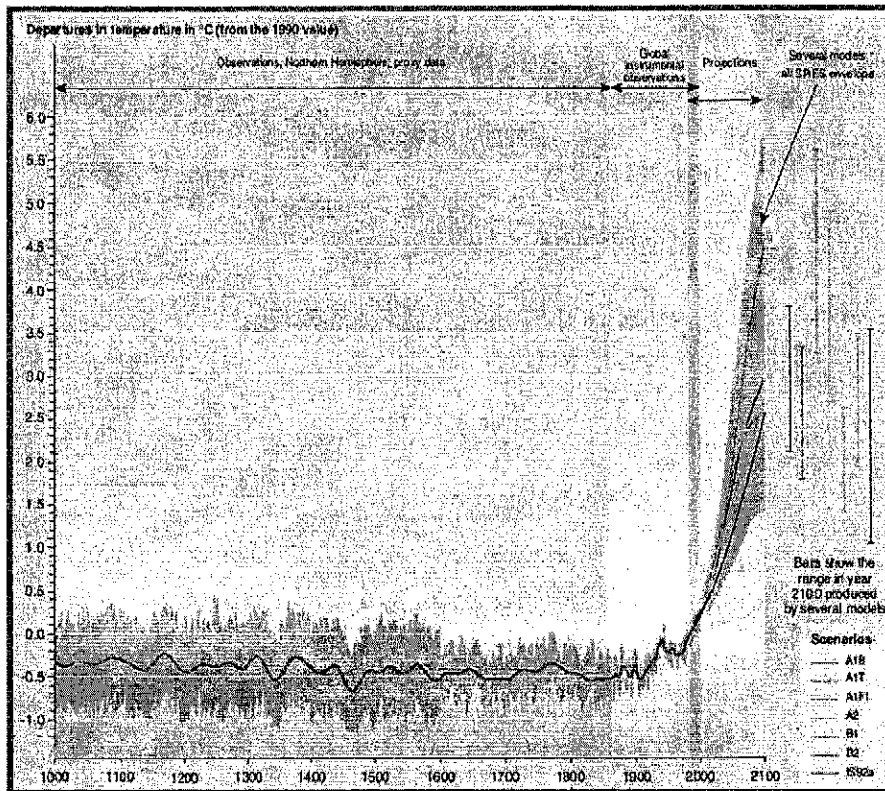


Figure 2-2 shows variations of the Earth's surface temperature for years 1000 to 2100. From year 1000 to year 1860 variations in average surface temperature of the Northern Hemisphere are reconstructed from proxy data (tree rings, corals, ice cores, and historical records). The line shows the 50-year average; the gray region, the 95 percent confidence limit in the annual data.

For the period 1860 to 2000, the figure shows variations in observations of globally and annually averaged surface temperature from the instrumental record; the line shows the decadal average. For 2000 to 2100, projections of globally averaged surface temperature are shown for several model scenarios using a global climate model.

The Third Assessment Report of the International Panel on Climate Change (IPCC, Synthesis Report, 2001) and the National Research Council of the National Academies (NRC, 2001) conclude that the global climate is changing at a rate unmatched in the past 1,000 years. The IPCC assessment cites new and stronger evidence that most of the global warming observed over the last 50 years is attributable to human activities and that anthropogenic climate change will persist for many centuries.

**Figure 2-2. Variations of the Earth's surface temperature: years 1000 to 2100**  
(Source: IPCC 2001 Synthesis report)



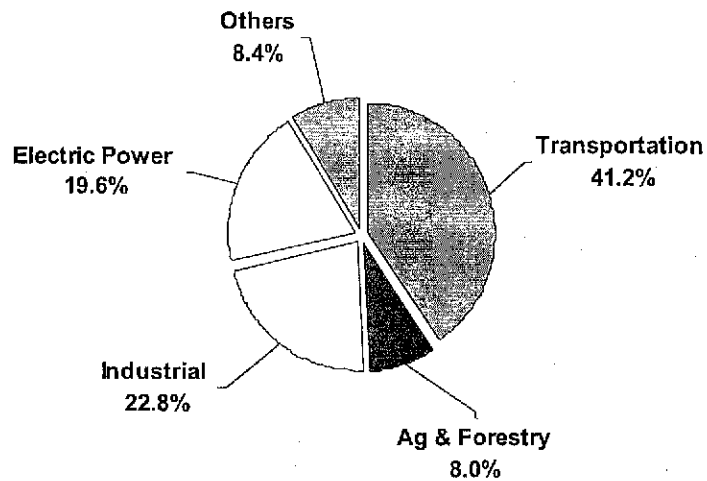
Many sources of data indicate that the Earth is warming faster than at any time in the previous 1,000 years. The global mean surface temperature has increased by 1.1°F since the 19th century (IPCC Synthesis report, 2001). The 10 warmest years of the last century all occurred within the last 15 years.

For example, 2002 and 2003 are tied as the second warmest years on record, according to a year-end review of climate data by the National Oceanic and Atmospheric Administration. Both the IPCC (2001) and the NAST (2001) reports project that warming in the 21st century will be significantly larger than in the 20th century. Scenarios examined in these assessments indicate that temperatures in the U.S. will rise by about 5° to 9°F (3° to 5°C) on average in the next 100 years.

## **2.2 Climate Change Emission Sources and Pollutants**

As shown in Figure 2-3, fossil fuel consumption in the transportation sector was the single largest source of California's climate change emissions in 2002, with the industrial sector as the second-largest source. Electricity production, from both in-state and out-of-state sources, was the third-largest source. Agriculture, forestry, commercial, and residential activities comprised the balance of California's climate change emissions (CEC, 2005).

**Figure 2-3: Sources of California's Climate Change Emissions, 2002 Expressed in Terms of CO<sub>2</sub> Equivalence (adapted from CEC, 2005).**

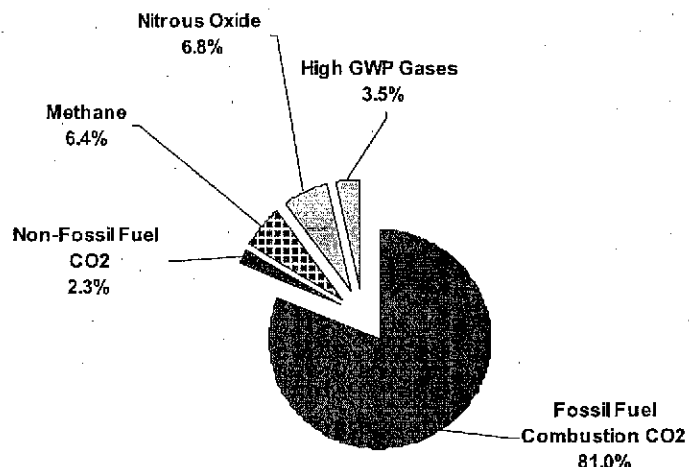


As previously indicated, human activities are altering the chemical composition of the Earth's atmosphere through the release and build-up of climate change emissions. However, climate change pollutants such as water vapor, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and O<sub>3</sub> can also be associated with natural sources. Conversely, several classes of halogenated substances that contain fluorine, chlorine, or bromine are also climate change emissions, but they are, for the most part, solely a product of industrial activities.

Figure 2-4 provides a distribution of California anthropogenic climate change pollutants by gas in 2002, expressed in terms of CO<sub>2</sub> equivalence. In addition, there are a number of other pollutants such as carbon monoxide, nitrogen oxides, and aerosols that have direct or indirect effects on terrestrial or solar radiation absorption. Individual climate change species are briefly discussed in the following section.



**Figure 2-4: California Composition of Gross Climate Change Pollutants, 2002 Expressed in Terms of CO<sub>2</sub> Equivalence (adapted from CEC, 2005).**



#### Carbon Dioxide (CO<sub>2</sub>)

In the atmosphere, carbon generally exists in its oxidized form, as CO<sub>2</sub>. Increased CO<sub>2</sub> concentrations in the atmosphere have been primarily linked to increased combustion of fossil fuels. Fossil fuel combustion accounted for 98 percent of gross California CO<sub>2</sub> emissions. California's total CO<sub>2</sub> emissions from fossil fuel combustion in 2002 were 360 million metric tons CO<sub>2</sub>, which accounts for approximately 7 percent of the U.S. emissions from this source. The transportation sector accounted for the largest portion of CO<sub>2</sub> emissions with gasoline consumption accounting for the greatest portion of emissions.

#### Methane (CH<sub>4</sub>)

Methane accounted for approximately 6 percent of gross 2002 climate change emissions in California (CO<sub>2</sub> equivalent). Methane is produced during anaerobic decomposition of organic matter in biological systems. Decomposition occurring in landfills accounts for the majority of anthropogenic CH<sub>4</sub> emissions in California and in the United States as a whole. Agricultural processes such as enteric fermentation, manure management, and rice cultivation are also significant sources of CH<sub>4</sub> in California.

#### Nitrous Oxide (N<sub>2</sub>O)

Nitrous oxide emissions accounted for nearly 7 percent of climate change emissions (CO<sub>2</sub> equivalent) in California in 2002. The primary sources of anthropogenic N<sub>2</sub>O emissions in California are agricultural soil management and fossil fuel combustion in mobile sources.

Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit  $\text{N}_2\text{O}$ , and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. U.S.EPA estimates from 2003 suggest that in 2001,  $\text{N}_2\text{O}$  emissions from mobile combustion were 13 percent of U.S.  $\text{N}_2\text{O}$  emissions, while stationary combustion accounted for 3 percent.

#### Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride ( $\text{SF}_6$ )

HFCs, PFCs and  $\text{SF}_6$  accounted for about 3.5 percent of gross 2002 climate change emissions in California ( $\text{CO}_2$  equivalent). HFCs are primarily used as substitutes for ozone-depleting substances (ODS) regulated under the Montreal Protocol. PFCs and  $\text{SF}_6$  are generally emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs.

#### Other Radiatively Important Gases

In addition, there are a number of man-made pollutants, emitted primarily as by-products of combustion (both of fossil fuels and of biomass), that have indirect effects on terrestrial or solar radiation absorption by influencing the formation or destruction of other climate change emissions. These include carbon monoxide ( $\text{CO}$ ), nitrogen oxides ( $\text{NO}_x$ ), nonmethane volatile organic compounds (NMVOCs), and sulfur dioxide ( $\text{SO}_2$ ).

These compounds, regulated in the U.S. and California pursuant to the Clean Air Act, are often referred to as "criteria pollutants." The criteria pollutants are reactive compounds, and they tend to remain in the atmosphere for a much shorter time (typically hours to months) than the previously discussed gases. As shown in Table 2-1,  $\text{CO}_2$ ,  $\text{N}_2\text{O}$ ,  $\text{CH}_4$ , and HFC-134a have atmospheric lifetimes ranging from a century to 10 years.

The sequence of reactions that removes  $\text{CO}$ ,  $\text{NO}_x$ , and NMVOCs from the atmosphere, however, tends to promote the formation of tropospheric  $\text{O}_3$  which is also a potent climate change emission. At present, there is large scientific uncertainty in estimating the radiative forcing effects of criteria pollutants.

#### Aerosols

Aerosols are extremely small particles or liquid droplets found in the atmosphere. Various categories of aerosols include naturally produced aerosols (e.g., soil dust, sea salt, biogenic aerosols, and volcanic aerosols), and anthropogenic aerosols (e.g., sulfates, ammonium nitrate, industrial dust, and carbonaceous aerosols including black carbon and organic carbon). Anthropogenic aerosols are derived directly or indirectly from transportation, coal combustion, cement manufacturing, waste incineration, and biomass burning.

Aerosols affect radiative forcing in both direct and indirect ways: directly by scattering and absorbing solar and thermal infrared radiation; and indirectly by altering the cloud properties and atmospheric heating rates that in turn modify the formation, precipitation efficiency, and radiative properties of clouds. The effect of aerosols on regional and global climate is complex: in general, sulfate aerosols enhance the reflection of sunlight and cool the Earth, while black carbon aerosols enhance the absorption of sunlight and warm the Earth.

Understanding the role of aerosols in climate change requires inclusion of realistic representations of aerosols and their radiative forcings in climate models. However, uncertainty in aerosol radiative forcing arises because neither emissions, atmospheric abundance, optical properties, nor indirect effects are well characterized. The IPCC (2001) and the NACIP (2002) have identified the total (direct and indirect) radiative forcing due to aerosols, and in particular light absorbing aerosols, as one of the most uncertain components of climate change models.

### Water Vapor

It should be noted that just because water vapor is the most important contributor to the natural greenhouse effect does not mean that human-made climate change emissions are unimportant. However, human activities do not seem to be appreciably changing the atmospheric concentration of water vapor in any direct way on the global average.

A simple comparison of the relative greenhouse efficiencies of water vapor and CO<sub>2</sub> quickly becomes problematic because water vapor enters the climate system mostly as a "feedback" gas. Further, water stays in the atmosphere for a few days, while other climate change emissions linger for decades or centuries. The overall impact of water vapor with respect to global climate change is not well understood as it can lead to both warming (absorption of long-wave radiation from Earth) and cooling (cloud formation/reflection of solar radiation).

## **2.3 Global Warming Potentials**

Radiative forcing is often defined as a net imbalance in energy flux in the atmosphere, and is expressed in watts per square meter (W/m<sup>2</sup>), i.e. heat per area of the Earth's surface. Radiative forcing of the surface-troposphere system, resulting, for example, from a change in climate change pollutant concentrations, is the change in the balance between radiation coming into the atmosphere and radiation going out. A positive radiative forcing tends, on average, to warm the surface of the Earth, and negative forcing tends, on average, to cool the surface.

The impact of a climate change pollutant upon the atmosphere is related not only to radiative properties of the gas and its initial abundance, but also to the length of time the climate change pollutants remain in the atmosphere. Radiative properties control the absorption of radiation per kilogram of gas present at any instant, but the lifetime of the gas controls how long an emitted kilogram remains

in the atmosphere and hence its cumulative impact on the atmosphere's thermal budget.

Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself is a climate change pollutant. Indirect radiative forcing occurs when chemical transformations of the original gas produce other climate change pollutants, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., cloud formation).

The concept of a Global Warming Potential (GWP) has been developed in parallel to the concept of ozone depletion potential developed under the Montreal Protocol to compare the ability of each climate change pollutant to trap heat in the atmosphere relative to another gas.

Carbon dioxide, as the primary anthropogenic climate change pollutant, has been chosen as the reference gas. GWP is defined as the ratio of the time-integrated radiative forcing from the release of 1 kilogram of a trace substance relative to that of 1 kg of CO<sub>2</sub> (IPCC 2001). While any length of integration can be selected, the 100-year GWPs are recommended by the IPCC and will be employed for policy-making and reporting purposes.

GWP values allow a comparison of the impacts of emission changes (reductions or increases) of different gases. According to the IPCC (2001), GWPs typically have an uncertainty of  $\pm 35$  percent. In addition to communicating climate change pollutants in units of mass, we have also chosen to use GWPs to reflect their inventories in CO<sub>2</sub>-equivalent terms because it effectively places all of the climate change pollutants on the same comparative scale.

Table 2-1 lists GWPs for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFC-134a for the 20-, 100-, and 500-year time horizons. It should be noted that when the lifetime of the species in question differs substantially from the response time of CO<sub>2</sub> (nominally about 150 years), then the GWP becomes very sensitive to the choice of time horizon. The GWP concept is only relevant for compounds that have sufficiently long lifetimes to become globally well-mixed. Therefore, short-lived gases and aerosols with varying atmospheric distributions and lifetimes pose a problem in the simple GWP framework.

**Table 2-1. Numerical Estimates of Global Warming Potentials Compared with CO<sub>2</sub> (Kilograms of Gas Per Kilogram of CO<sub>2</sub> adapted from IPCC 2001).**

Climate Change Pollutants	Lifetime (years)	Global Warming Potential		
		20 years	100 years	500 years
CO <sub>2</sub>	~150	1	1	1
CH <sub>4</sub>	12	62	23	7
N <sub>2</sub> O	114	275	296	156
HFC-134a	14	3,300	1,300	400

## 2.4 Abrupt Climate Change

When most people think about climate change, they imagine gradual increases in temperature and only marginal changes in other climatic conditions, continuing indefinitely or even leveling off at some time in the future. It is assumed that human societies can adapt to gradual climate change. However, recent climate change research has uncovered a disturbing feature of the Earth's climate system: it is capable of sudden, violent shifts. This is a critically important realization.

Climate change will not necessarily be gradual, as assumed in most climate change projections, but may instead involve relatively sudden jumps between very different states. A mounting body of evidence suggests that continued increasing climate change emissions may push the oceans past a critical threshold and into a drastically different future.

Abrupt climate change is the subject of reports commissioned by the National Academy of Science (NRC 2002) and the U.S. Department of Defense (Schwartz and Randall, 2003). Thus, in addition to the gradual (albeit accelerated) climate changes projected by current climate models, Californians need to be aware of the possibility of much more sudden climate shifts.

## 2.5 Summary

There is little doubt that climate change is happening today, that human-caused increases in the atmospheric abundance of climate change pollutants are a large cause of that change, and the 21st century climate change will be greater than that we have experienced in the 20th century. Much of that projected climate change is as yet unrealized warming from the climate change pollutants in the atmosphere today. Nevertheless, actions taken to reduce climate change emissions today can reduce the magnitude and rate of climate change this century.

There is no scientific uncertainty about the fact that human activities have increased the atmospheric abundance of climate change pollutants. The uncertainties center on predicting exactly what the climate changes will be in various local areas of the Earth and what the effects of clouds will be in determining the rate at which the mean temperature will increase.

There are also uncertainties associated with characterizing the timing and magnitude of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the impact of these effects on human health and the economy.

### **3 CALIFORNIA ACTIONS TO ADDRESS CLIMATE CHANGE**

The State of California has traditionally been a pioneer in efforts to reduce air pollution, dating back to 1963 when the California New Motor Vehicle Pollution Control Board adopted the nation's first motor vehicle emission standards. California likewise has a long history of actions undertaken in response to the threat posed by climate change.

Beginning in 1988, legislation was enacted that directed the California Energy Commission, in consultation with the Air Resources Board and other agencies, to study the implications of global warming on California's environment, economy, and water supply.

This effort continued with Governor Schwarzenegger's June 2005 Executive Order creating climate change emission reduction targets for the state. The Order requested a report that specifically addresses the impacts of climate change on the state and includes adaptation measures the state can implement to best respond. California state government has consistently recognized the necessity for state action on climate change to protect California's interests.

#### **3.1 Summary of California Activities Underway**

California has a long history of environmental leadership and has continued that leadership in the efforts to reduce climate change emissions. Table 3-1 indicates those strategies that are underway in California.

Section 2.1 asserted that the transportation sector is the largest source of emissions in California. The motor vehicle standards of the Air Resources Board (ARB) provide significant emission reductions in this sector in the 2020 time frame. Two other key strategies in the state are the Renewable Portfolio Standard and the Energy Efficiency Programs. These strategies have been instrumental in California's efforts to provide energy security for the state and have also provided significant climate change emission reductions. The state's Energy Efficiency Programs have resulted in a stable per-capita energy use in the state even while California's economy has soared.

It is important to note that these strategies, though underway, will require continuing efforts by the responsible agencies as well as strong leadership to ensure they remain in place. Governor Schwarzenegger has pledged his support of the ARB's motor vehicle regulations and the acceleration of the Renewable Portfolio Standard. The Governor's support and the continuing support of the Legislature will be essential as the state implements these strategies successfully.

**Table 3-1 Emission Reduction Strategies Underway in California**

Agency Responsible	Climate Change Emission Reductions (Million Tons CO <sub>2</sub> Equivalent)	
	2010	2020
Strategies		
<b>Air Resources Board</b>		
Vehicle Climate Change Standards	1	30
Diesel Anti-idling	1	1.2
<b>Public Utilities Commission</b>		
Accelerated Renewable Portfolio Std to 33% by 2020 (including load-serving entities [LSE])	5	11
California Solar Initiative	0.4	3
Investor Owned Utility Energy Efficiency Programs(including LSEs)	4	8.8
<b>Integrated Waste Management Board</b>		
Achieve 50% Statewide Recycling Goal	3	3
<b>Energy Commission</b>		
Building Energy Efficiency Standards	1	2
Appliance Energy Efficiency Standards	3	5
Fuel-efficient Replacement Tires & Inflation Programs	1.5	1.5
<b>State and Consumer Services and Cal/EPA</b>		
Green Buildings Initiative	0.5	1.8
<b>Air Resources Board and Cal/EPA</b>		
Hydrogen Highway	Included*	
<b>Total Potential Emission Reductions</b>	<b>22</b>	<b>68</b>

\* The benefits of the Hydrogen Highway have been captured in other programs such as the motor vehicle regulations and green buildings initiative.

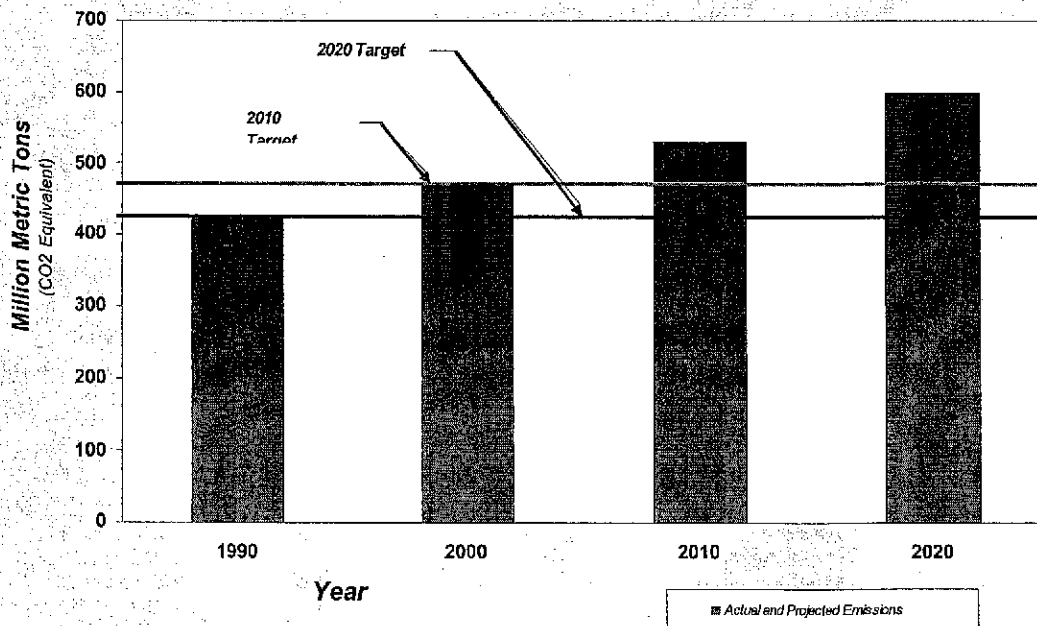
### 3.2 Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger signed Executive Order S-3-05 (EO) during the United Nations World Environment Day event in San Francisco. The EO established climate change emission reduction targets for California and was heralded in the nation and around the world as a landmark event signaling that California is taking a leadership role in the United States in addressing the issue of climate change. The Governor said in his remarks preceding the signing of the EO, "...the debate is over. We know the science. We see the threat. And we know the time for action is now."

This quote appeared in the media throughout the world. Internationally the developed nations agree that the issue of climate change must be addressed. It is no exaggeration to say that the world had been waiting for a strong signal that the state which has led a nation on so many public health and environmental issues would continue that leadership in addressing climate change.

The targets established by the EO are shown in Figure 3-1. The 2010 and 2020 targets are based on an ambitious estimate of how much the state can reduce emissions with strong top-down leadership and a coordinated effort amongst various state agencies. Cal/EPA worked with the ARB, CEC and Tellus, a technical contractor, to develop the targets in the 2010 and 2020 timeframes. The 2050 target is based on emission reductions the science indicates will be necessary from all developed nations to ensure protection of the planet in the 100-year time frame.

**Figure 3-1. California's Climate Change Emissions and Targets**





In addition to setting targets for the state, the EO placed Cal/EPA in the lead to coordinate efforts to meet these targets among the following agencies: Business, Transportation and Housing Agency (BT&H), Department of Food and Agriculture (CDFA), Energy Commission (CEC), Resources Agency, and Public Utilities Commission (PUC). A coordinated effort is essential to success in climate change emission reduction strategies. Programmatic, incentive-based, or market-based strategies will require the efforts of agencies whose purview stretches across all sectors of the economy, from transportation to energy to agriculture to waste management.

Finally, the EO directed Cal/EPA to lead an evaluation of the impacts of climate change in California, mitigation strategies to reduce emissions, and adaptation measures that can be taken by the state to best respond to the adverse impacts of climate change. This effort is built upon the work of the CEC under the Public Interest Energy Research plan.

The CEC is currently about half way through a five-year plan that responds to many of the same directives included in the EO. Cal/EPA worked with CEC and other agencies to incorporate a broader scope and provide the Governor and Legislature with a mid-point estimate of what California can expect as a result of climate change and how the state can best respond to the adverse consequences.

### **3.3 Climate Action Team**

In response to the EO, the Secretary of Cal/EPA created the Climate Action Team (CAT). The CAT includes knowledgeable representatives from Air Resources Board; Business, Transportation, & Housing; Department of Food and Agriculture; Energy Commission; California Integrated Waste Management Board (CIWMB), Resources Agency, and Public Utilities Commission (PUC). The CAT has prepared a recommended list of strategies for the state to pursue to reduce climate change emissions in the state. This list is described in detail in Section 0. The CAT has also contributed to and reviewed the scenario analysis described in Section 4.

There are two subgroups of the CAT, the market-based options subgroup and the scenario analysis subgroup. Both subgroups are made up of representatives appointed by the CAT and experts as appropriate. The market-based options subgroup was created by the Secretary of Cal/EPA because of the cross-cutting nature of a market-based program for the state. The scenario analysis subgroup addressed the directive in the EO to evaluate the impacts of climate change on the state and adaptation measures that can be taken by the state to best prepare for the adverse consequences of climate change.

## **4 SCENARIO ANALYSIS**

In California and throughout western North America, signs of a changing climate are evident. Over the last 50 years, observations reveal trends toward warmer

winter and spring temperatures, a smaller fraction of precipitation falling as snow instead of rain, a decrease in the amount of spring snow accumulation in lower and middle elevation mountain zones, an advance in snowmelt of 5 to 30 days earlier in the spring, and a similar shift in the timing of spring flower blooms.

These changes are consistent with much broader scale global measures. From 1900 through 1970, the average global temperature rose by about 0.1°F (0.06 °C) per decade, but since then the rate of warming has increased markedly, to about 0.5°F (0.3°C) per decade. During the last 1,000 years, available observations suggest that the 10 warmest years all occurred after 1990. Much of the warming during the last four decades is attributable to the increasing atmospheric concentrations of climate change emissions due to human activities.<sup>1</sup>

It is now evident that even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes, and the inertia of the Earth's climate system could produce as much as 1.1°F (0.6°C) of additional warming.<sup>2</sup> As a result, some impacts from climate change are now unavoidable.

For example, studies show that some unique ecosystems, such as coral reefs, and those in arctic and alpine regions, have been or will be severely damaged or lost as a result of climate changes already underway.<sup>3</sup> However, depending on the amount of climate change emissions emitted over the next few decades, an opportunity remains to avoid the most severe impacts that are expected with greater rises in temperature.

The scientific community is striving to determine how vulnerable human society and the earth systems on which it depends are to future climate changes. Although no consensus has been reached as to what constitutes "dangerous" climate change, there has been increasing warning about the impacts of global average temperatures rising over 3.6°F (2°C). These include a rapid increase in global hunger, health risks, and water shortages<sup>1</sup>. Temperature rises above

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<sup>1</sup> Hare, W.: 2003, 'Assessment of Knowledge on Impacts of Climate Change – Contribution to the Specification of Art. 2 of the UNFCCC'. Potsdam, Berlin, WBGU - German Advisory Council on Global Change.  
[http://www.wbgu.de/wbgu\\_sn2003\\_ex01.pdf](http://www.wbgu.de/wbgu_sn2003_ex01.pdf)

3.6°F (2°C) also increase the risk of abrupt climatic changes such as rapid sea level rise from continental ice including the disintegration of the West Antarctic Ice Sheet.<sup>4</sup>

Linking specific temperature changes—such as the proposed 3.6°F (2°C) dangerous threshold—with particular levels of global warming emissions in the atmosphere, is complicated. Although all climate models project increased temperatures to result from higher concentrations of climate change pollutants, these models vary in their sensitivity of the global and regional temperatures and other climate measures to changes in climate change pollutant concentrations.

For example, temperature rises between 2.7°–8.1°F (1.5°–4.5°C) have been projected for a doubling of the atmospheric CO<sub>2</sub> concentration above pre-industrial levels. This wide range of temperature rise projections is the result of differences in the way the models represent key processes within the climate system, particularly in characterizing clouds which can lead to either damping or reinforcing of global warming.

Society can neither control nor precisely determine the sensitivity of the earth's climate system to rising climate change emission concentrations. As a result, it is critical to carefully consider implications of a range of climate sensitivities when evaluating the risks of climate change and devising policies to manage the one factor we can control: our own climate change emissions.

For example, the United Kingdom (UK) adopted a target to limit the maximum atmospheric CO<sub>2</sub> concentration to 550 parts per million (ppm) and determined that reaching this target would require the industrialized world to decrease emissions by approximately 60 percent by the year 2050.

However, because of the uncertainty in climate model sensitivity, it is unclear if this 550 ppm target will keep global temperatures below a 3.6°F (2°C) dangerous threshold. Although the Intergovernmental Panel on Climate Change (IPCC) suggests that the UK concentration target is consistent with several recent climate model simulations, the 3.6°F upper warming limit under the 550 ppm threshold holds up under the lower- but is exceeded under the higher-climate

sensitivity models. This suggests that a lower concentration target, and therefore greater emission reductions, could be needed.

This chapter summarizes findings of recent analyses that explore the implications of various climate change scenarios for California. The studies focus on comparing the implications of different scenarios of climate change emissions given a range of climate sensitivities. The projections reported are driven by three climate change emission scenarios—a lower emissions, medium-high emissions, and higher emissions scenario.

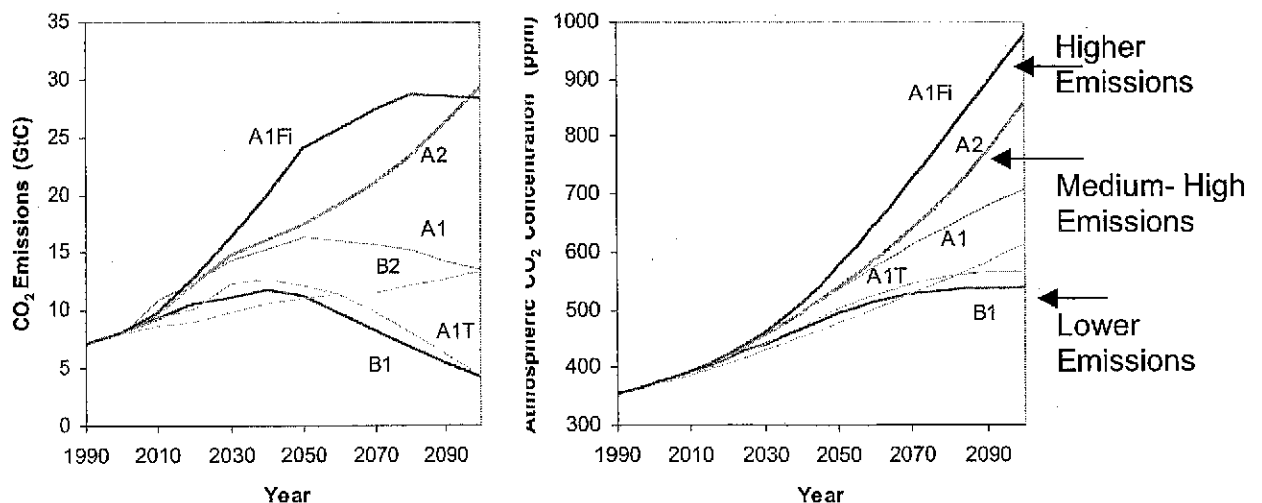
The sensitivity of the climate system to increasing atmospheric concentrations of climate change pollutants is explored by comparing the projected temperature rise from three different global climate models, each containing somewhat different representations of some crucial physical processes that result in levels of climate sensitivity.

The following section describes the global warming emission scenarios and climate projections reported in this chapter. Other sections report on the projected impacts of the specific climate projections across six sectors—coasts, water resources, agriculture, forests/fire, public health, and electricity. The chapter concludes with a discussion of the implications of these projections for mitigation and adaptation.

#### 4.1 Climate Change Scenarios<sup>5</sup>

The Intergovernmental Panel on Climate Change Special Report on Emissions Scenarios (SRES) developed a set of possible future emissions scenarios based on different assumptions about global development paths (Figure 4-1). This section relies upon the results from recent analysis for California of three SRES emission scenarios—a higher emissions scenario (A1Fi), a medium-high emission scenario (A2), and lower emission scenarios (B1).

Figure 4-1. Special Report on Emissions Scenarios



The higher emissions scenario (A1fi) represents a world of rapid fossil-fuel-intensive economic growth, global population that peaks mid-century then declines, and the introduction of new and more efficient technologies toward the end of the century. Global warming emissions grow rapidly, reaching about 25 gigatonnes per year (Gt/yr), more than 3 times the present rate of emissions, by 2050.

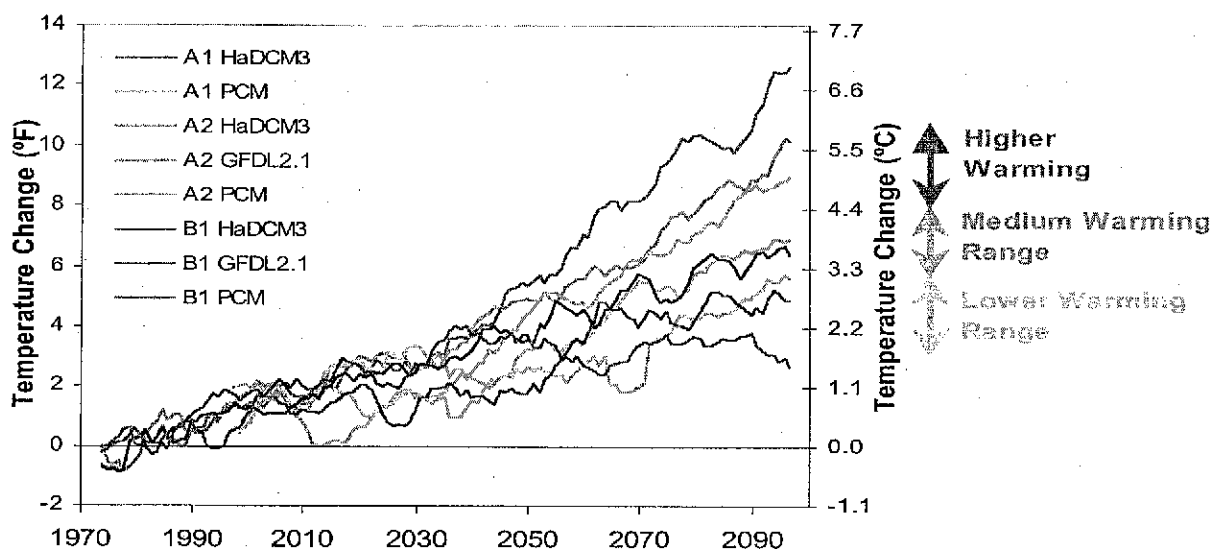
The medium-high emissions scenario (A2) projects continuous population growth with slower economic growth and technological change than in the other scenarios. In contrast, the lower emissions scenario (B1) characterizes a world with population growth similar to the highest emissions scenarios, but with rapid changes towards a service and information economy and with the introduction of clean and resource-efficient technologies. The B1 scenario has CO<sub>2</sub> emissions peaking just below 10 Gt/yr in mid-century before dropping below the current-day level of 7 Gt/yr by 2100. Under the B1 scenario, the CO<sub>2</sub> concentration would double, relative to its pre-industrial level, by the end of this century.<sup>6</sup> For the range of climate sensitivities reported on here, the B1 scenario leads to global temperature rises between 1.8-3.1 °C, capturing yet mostly rising above the "dangerous" threshold of 2°C described above. Importantly, in the B1 scenario simulations, while the upward trend of temperature tends to level off or slow down during the last few decades of the 21<sup>st</sup> Century, in the A2 and A1fi simulations the rising trend in temperature continues at a high rate, indicating that more warming would occur under these higher scenarios before an equilibrium is reached.

To capture a range of uncertainty among climate models, this chapter reports on projections from three state-of-the-art global climate models (GCMs)—a low-sensitivity model, the Parallel Climate Model (PCM1)<sup>7</sup> from the National Center for Atmospheric Research (NCAR) and the Department of Energy (DOE) groups; a medium-sensitivity model, the Geophysical Fluids Dynamic Laboratory (GFDL) CM2.1 (NOAA Geophysical Dynamics Laboratory, Princeton NJ)<sup>8</sup> model; and the slightly higher-sensitivity U.K. Met Office Hadley Centre Climate Model, version 3 (HadCM3)<sup>9</sup>.

Temperatures are projected to rise significantly over the 21<sup>st</sup> century. The magnitude of projected warming varies between models and the emission scenarios. The temperature rise (2000 to 2100) projections are from approximately 1.7°C to 3.0°C (3.0°F-5.4°F) in the lower range of projected warming, 3.1°C-4.3°C (5.5°F-7.8°F) in the medium range, and 4.4°C to 5.8°C (8.0°F-10.4°F) in the higher range. To comprehend the magnitude of these projected temperature changes, over the next century, the lower range of projected temperature rise is slightly larger than the difference in annual mean temperature between Monterey and Salinas, and the upper range of project warming is greater than the temperature difference between San Francisco and San Jose, respectively (Figure 4-2). There is no clear trend in precipitation

projections for California over the next century. However the consensus of the recent IPCC model projections, including several models that were not selected for the present study, is for relatively little change in total precipitation, with a tendency toward a slightly greater winter and lower spring precipitation.

**Figure 4-2. Change in California Annual Average Daily Mean Temperature Relative to 1961-1990**



Change in California annual mean temperature (°F and °C) by year from 1961 to 2100 relative to 1961–1990 average—7-year running mean.

HadCM3 = Hadley Climate Model version 3

PCM = Parallel Climate Model

GFDL2.1 = Geophysical Fluid Dynamics Laboratory model 2.1

A1, A2, and B1 refer to global emission scenarios explained in Section 4. They are higher (A1), medium-high (A2), and lower (B1) emission scenarios.

## 4.2 Public Health Impacts<sup>10</sup>

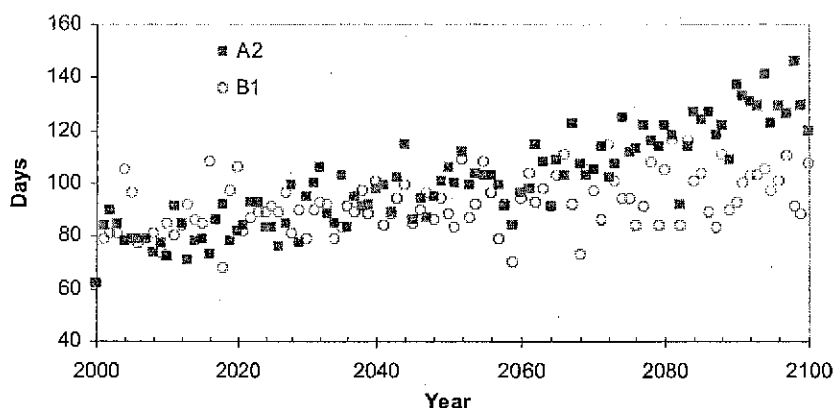
Climate change will affect the health of Californians due to increases in the frequency, duration, and intensity of conditions conducive to air pollution formation, oppressive heat, and wildfires. The primary concern is not the change in average climate, but rather the projected increase in extreme conditions that are responsible for the most serious health consequences.

Californians experience the worst air quality in the nation, with annual health and economic impacts estimated at 9,000 deaths and \$60 billion per year. Ozone and particulate matter (PM) are the pollutants of greatest concern, and the current control programs for motor vehicles and industrial sources cost about \$10 billion per year.

Maximum ozone levels are about double the current air quality standards. Climate change will slow progress toward attainment and increase control costs by boosting emissions, accelerating chemical processes, and raising inversion temperatures during summertime stagnation episodes. Results from statistical analyses indicate that the number of days meteorologically conducive to pollution formation may rise by 75 to 85 percent in the high ozone areas of Los Angeles (Riverside) and the San Joaquin Valley (Visalia) by the end of the century if

temperatures rise to the higher projected warming range, and by 25 to 35 percent if temperature increases stay within the lower warming range.

**Figure 4-3. Projected Days at Riverside Meteorologically Conducive to Exceedances of the 1-Hour California Ambient Air Quality Standard for Ozone of 0.09 Parts Per Million (ppm)**



Geophysical Fluid Dynamics Laboratory (GFDL). Source: Kleeman and Cayan, 2006

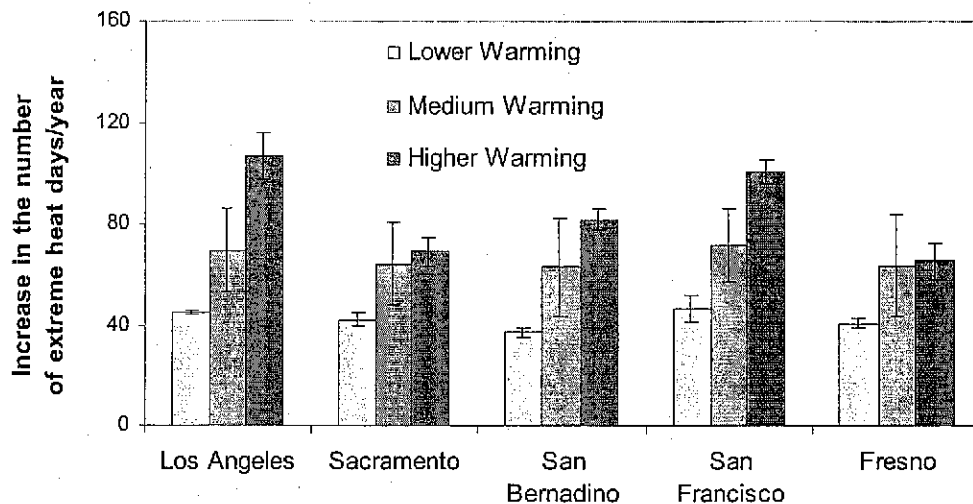
In addition, global background ozone (primarily formed from methane and nitrogen oxides from fuel combustion) is projected to increase by 4 to 10 percent (lower emissions scenario) to 25 percent (higher emissions scenario) by 2100. If background ozone increases by the amount projected for the higher scenario, the ozone targets would be impossible to attain in much of California, even with near-zero local emissions.

The future trend for PM is not as clear, as increasing temperatures reduce some particle types while others show no change or increase slightly. In general, increased temperatures tend to reduce atmospheric nitrate, an important contributor to levels of PM<sub>2.5</sub> (particles less than 2.5 microns) in California. However, a preliminary study by Kleeman and Cayan (2006) suggests that if global background ozone levels double, there would be an increase in PM<sub>2.5</sub> levels despite the corresponding increase in temperature. Rainy days, wildfires, global dust storms, humidity, and other factors also affect PM and are the subject of ongoing study.

Analyses of various climate change scenarios project that the future will have a greater number of extremely hot days and fewer extremely cold days, with large increases in heat-related deaths predicted for the five cities studied.



**Figure 4-4. Projected increase in extreme heat days relative to 1961–1990.** “Extreme heat” defined as by the average temperature which is exceeded less than 10% of the days during the historical period (1961–1990), or approximately 36 days a year.



Source: Drechsler et al., 2006

For the higher warming range, the number of days with temperatures above 90°F in Los Angeles and higher than 95°F in Sacramento will increase to about 100 days by the end of the century, almost twice the increase projected if the temperatures stay within the lower warming range. Individuals likely to be the most affected include the elderly, already ill, and poor. On peak demand summer days in 2100, California would need at least 10 percent more electricity, compared to total generation capacity today, for air conditioning alone. Ongoing studies are investigating the relative contribution of air pollution to heat-related death, and refining the air conditioning demand estimates.

Climate change could affect asthma prevalence and attacks, but this is difficult to predict for several reasons. The most common asthma triggers are dust mites and molds, both of which are higher indoors than outdoors and require a relatively humid environment for survival. Consequently, if the climate becomes drier, these triggers will become less important, but they respond to higher humidity with increased growth. Many asthmatics are allergic to various plant pollens. Plants and trees typically have pollination seasons that last a few weeks per year. To the extent that pollen seasons lengthen or become more intense in response to climate change, increased asthma exacerbation could result.

Climate change has the potential to influence the incidence of infectious disease spread by mosquitoes, ticks, fleas, rodents, and food. More study is needed as research to date has focused on short-term changes in weather patterns (primarily in ambient temperature and rainfall), rather than long-term trends.

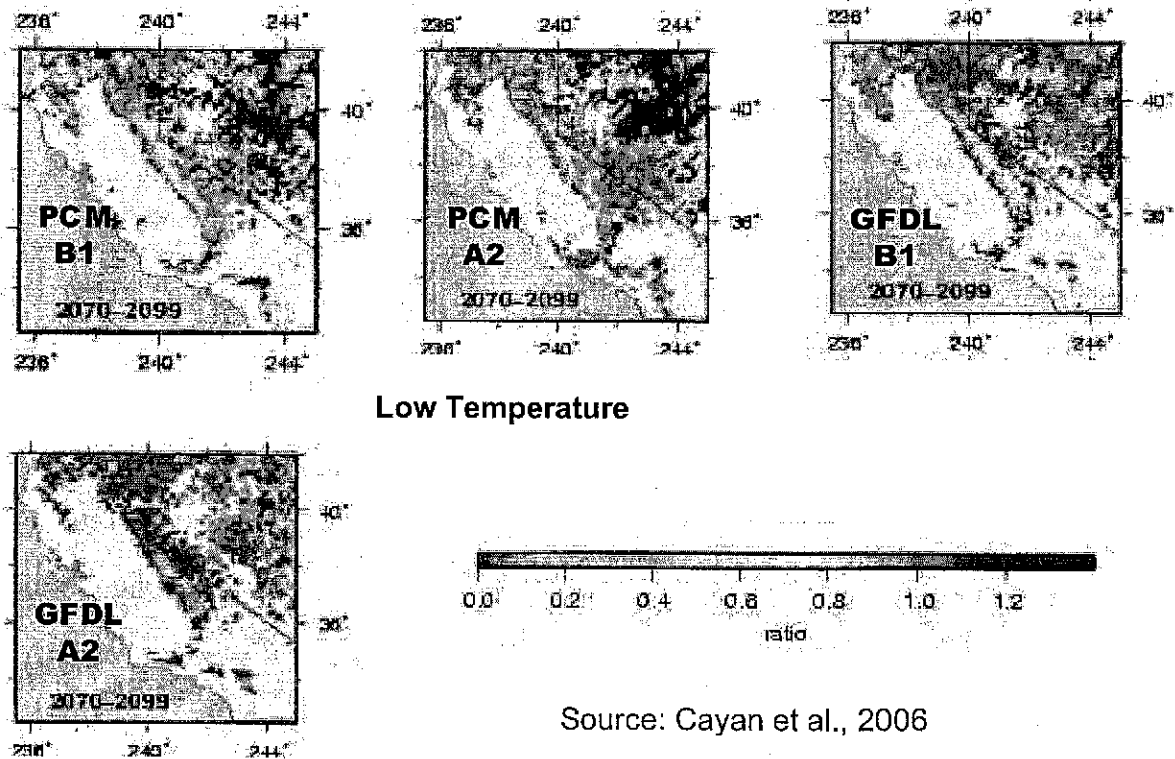
### 4.3 Water Resources Impacts<sup>11</sup>

Although precipitation is projected to change only modestly over this century, rising temperatures are expected to diminish snow accumulation in the Sierra Nevada and other mountain catchments in California. Higher temperatures will result in more precipitation as rain instead of snow and earlier melt of the snow that does fall. Reductions in snow accumulation and earlier snowmelt will have cascading effects on water supplies, natural ecosystems, and winter recreation.

#### Snowpack

The projected losses in snowpack increase with temperature. Each of the simulations shows losses of spring snow accumulation, largely over the Sierra Nevada, to become progressively larger during the 21<sup>st</sup> century. By the 2035–2064 period, snowpack in the Sierra Nevada could decrease 10 to 40 percent depending on the amount of warming and precipitation patterns. By the end of century, snowpack could decrease by as much as 90 percent if temperatures rise to the higher warming range, almost double the loss is expected if temperature rises stay within the lower warming range.

Figure 4-5. April 1 Snow water equivalent 2070-2099 fraction of 1961–1990



equal to about half the storage capacity in California's major man-made reservoirs. The snowpack holds the winter precipitation in the form of snow and, historically, has released it in the spring and early summer as the snow melts. This loss in storage could mean more water shortages in the future. However, the full effect of this storage loss will depend in part on whether reservoirs can be managed to capture the earlier snowmelt while losing flood control capacity.

Under most scenarios stream flows are projected to decrease slightly by mid-century with more dramatic changes by the end of the century. Flows into the major Sierra Nevada reservoirs could decline between 25 to 30 percent if temperatures rise to the medium warming range and precipitation decreases by approximately 20%. This is almost double the decrease projected if temperatures are confined to within the lower warming range. However, in one model run, projections suggest a slight increase in precipitation and a corresponding rise in projected stream flows.

After mid-century, the change in the volume and timing of runoff reduces the ability of the major projects to deliver water to agricultural users south of the Delta. The projected changes in water supply may be further exacerbated by increasing demand. By the end of century, increasing temperatures are expected to increase the crop demand for water between 2 and 13 percent in the lower and medium warming ranges, respectively.

#### Winter Recreation

Declines in Sierra snowpack will also have widespread implications for winter tourism. Toward the end of the century, in lower temperature scenarios the ski season could shorten by as much as a month while projected climatic changes under the higher temperature scenario suggest that the minimum snow conditions for ski resort operation might be eliminated entirely. Many resorts would be forced to rely on snowmaking or move their operations.

#### **4.4 Agriculture Impacts<sup>12</sup>**

Agriculture, along with forestry, is the sector of the California economy that is most likely to be affected by a change in climate. California agriculture is a \$68 billion industry.<sup>13</sup> California is the largest agricultural producer in the nation and accounts for 13 percent of all U.S. agricultural sales, including half of the nation's total fruits and vegetables.

Regional analyses of climate trends in agricultural regions of California suggest that climate change is already in motion. During the period 1951 to 2000, the growing season has lengthened by about a day per decade, and warming temperatures have resulted in an increase of 30 to 70 growing degree days per decade, with much of the increase occurring in the spring. Climate change affects agriculture directly through increasing temperatures and rising CO<sub>2</sub> concentrations and indirectly through changes in water availability and pests.

The agriculture sector is likely to bear a disproportionate share of any water scarcity due to any reduced water availability from climate change. A preliminary

analysis suggests that a drier climate would impose significant costs on agricultural production in the Central Valley.

### Temperature

Temperature influences crop growth through its impact on photosynthesis and respiration, as well as growing season length and water use. Temperature also serves as a controlling factor for developmental processes, such as flowering and fruit maturation, which may be threatened if lengthening of the growing season introduces asynchrony between the timing of flowering and the life cycle of important insect pollinators.

In general, a warming from a low to a higher temperature raises yield at first but then becomes harmful. Possible effects of excessively high temperature include decreased fruit size and quality for stone fruits, premature ripening and possible quality reduction for grapes, reduced fruit yield for tomatoes, increased incidence of tip burn for lettuce, and similar forms of burn for other crops.

As temperatures rise toward the medium warming range, by the end of this century, the local winter climate is expected to approach critical chill-hour thresholds for many species of fruit trees. (Chill hour is the number of hours below a critical temperature.)

### Carbon Dioxide (CO<sub>2</sub>)

From a variety of studies in the literature, photosynthesis increases when a plant is exposed to a doubling of CO<sub>2</sub>. However, whether this translates into increased yield of economically valuable plant product is uncertain and highly variable. Also, elevated CO<sub>2</sub> levels are associated with decreased concentrations of mineral nutrients in plant tissues, especially a decrease in plant nitrogen, which plays a central role in plant metabolism.

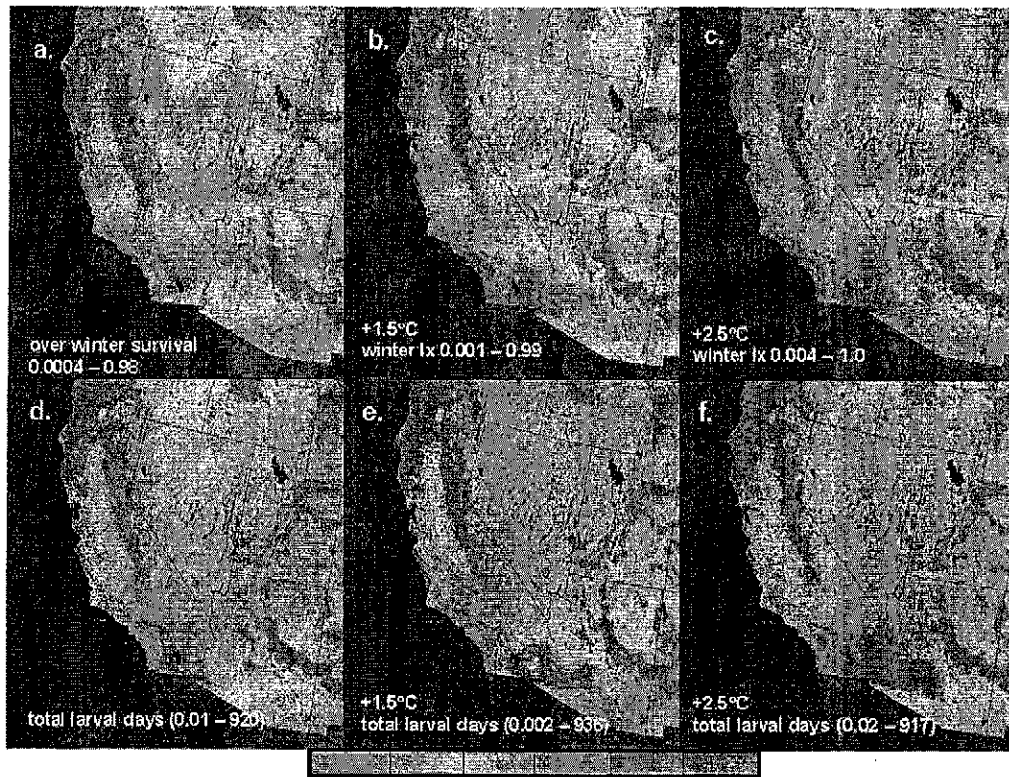
Some crops may benefit in quality from an increase in CO<sub>2</sub>; for example, the fruit flavor of strawberries improves. Some crops are harmed by an increase in CO<sub>2</sub>; for example grain protein in crops decreases and, in the case of wheat, bread-making quality decreases.

### Pests and Weeds<sup>14</sup>

Growth rates of weeds, insect pests, and pathogens are also likely to increase with elevated temperatures, and their ranges may expand. A relatively new area of research involves the use of physiologically-based dynamic models to fully understand the effects of weather (e.g., temperature, rainfall, solar radiation, etc.) on species dynamics.

One of these models was used to estimate the potential impacts of a pest (pink bollworm, or PBW) on cotton cultivation in the state. At the present time this pest is of importance only in the southern desert valleys (e.g., Imperial and Coachella Valleys) because winter frost restricts the invasion of PBW to the million acres of cotton grown in the San Joaquin Valley. However, if winter temperatures rise by 3.6°–4.5°F (2°–2.5°C), the range of PBW of this pest would likely expand northward.

**Figure 4-6. Cotton/pink bollworm (PBW): Predicting areas favored by PBW**



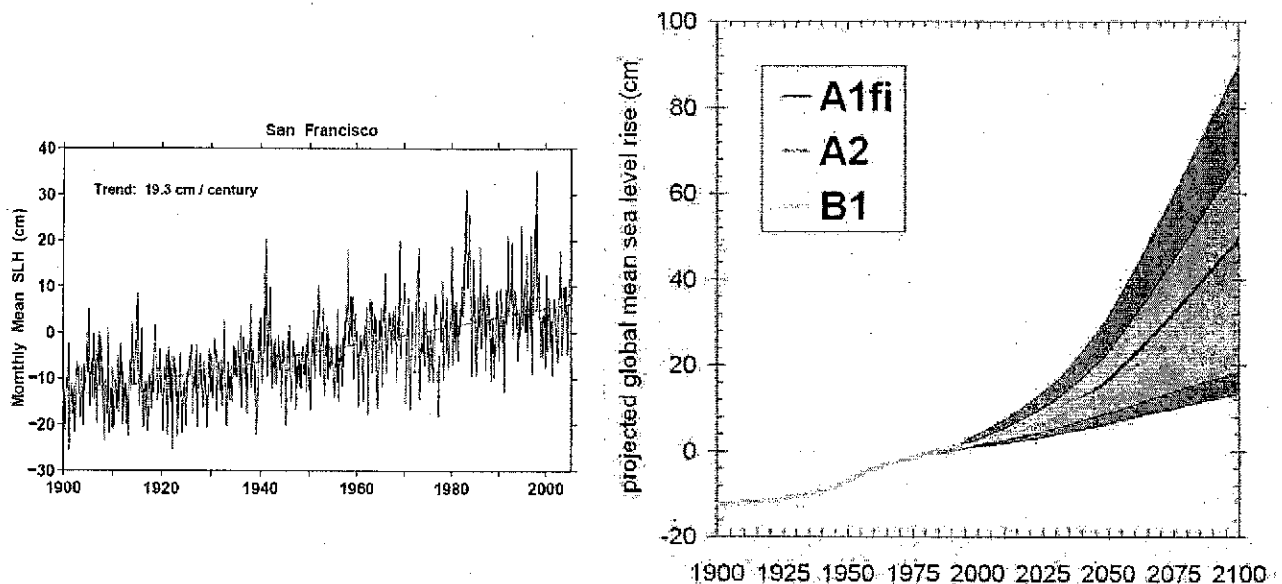
The effects on winter survival (a-c) and total seasonal pest PBW larval densities (larval days, d-e) under current weather (a,d) and with 1.5°C (b,e) and 2.5°C (c,f) increases in daily temperatures respectively (Gutierrez et al. in press).

#### **4.5 Coastal Sea Level Impacts<sup>15</sup>**

California's coastal observations and global model projections indicate that California's open coast and estuaries will experience increasing sea levels during the next century. These changes could amplify the sea level rise which has historically affected much of the coast of California, including the Southern California coast, the Central California open coast, and the San Francisco Bay and upper estuary. These trends, quantified from a small set of long-duration California tide gages, show rises of about 2 mm/year (Figure 4-6). They are very similar to trends estimated for global sea level.

In addition to long-term trends, sea levels along the California coast undergo shorter period variability above or below predicted tide levels. Highest sea levels have usually occurred when winter storms and Pacific climate disturbances such as El Niño<sup>2</sup> have coincided with high astronomical tides. So far, there is little evidence that the rate of global sea level rise has accelerated (the rate of rise at California tide gages has actually flattened during the last several years), but climate models suggest strongly that this may change.

**Figure 4-7. Observed Change in Sea Level in San Francisco during the last century and Projections of Global Mean Sea Level during next century.**



Source: Cayan et al., 2006

Global sea level rise is projected to range from 4 to 33 inches during the 2000 to 2100 period. This compares to a rate of approximately 7.6 inches (19 cm) per

<sup>2</sup> El Niño: A phenomenon in the equatorial Pacific Ocean characterized by a positive sea surface temperature departure from normal. Water in the eastern Pacific Ocean close to the equator gets warmer than normal, which results in changes in weather patterns. In some cases, El Niño results in significant increases in precipitation in California. For example the 1982-1983 El Niño event.)

century observed at San Francisco and San Diego during the last 100 years. Superimposed on these rising sea levels will be astronomically-driven tides, and fluctuations from weather, El Niño and other influences, so that, the occurrence of extreme events will increase as sea level rises.

The frequency that sea level exceeds a stationary threshold, as projected over future decades for locations such as the San Francisco tide gage, increases markedly as the mean sea level increases. Thus, historical coastal structure design criteria may be exceeded, the duration of events will increase, and these events will become increasingly frequent as sea level rise continues. On the open coast, impacts during these events will continue to be exacerbated by high surf from wind, waves, and, in the Sacramento/San Joaquin Delta of the San Francisco Bay estuary, by floods that may further jeopardize levees and other structures.

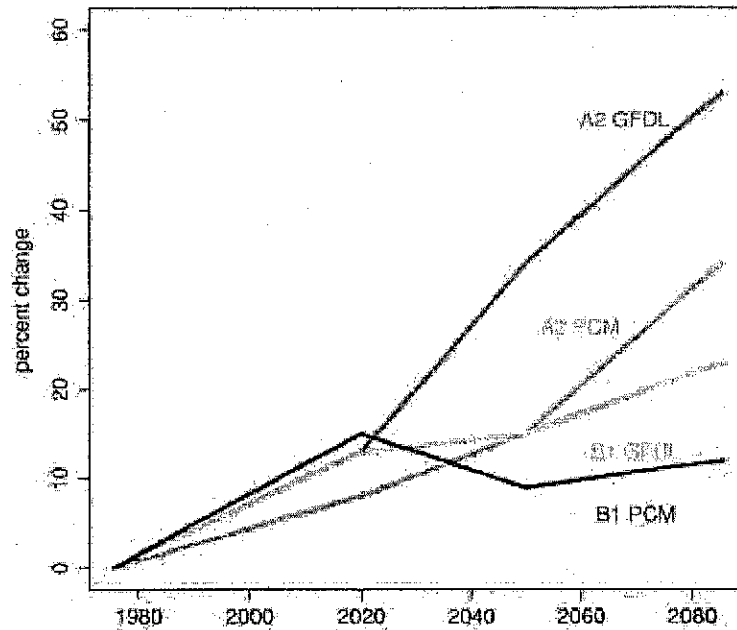
#### **4.6 Forests and Natural Landscapes Impacts<sup>16</sup>**

Climate changes and increased CO<sub>2</sub> concentrations are expected to alter the extent and character of forest and other ecosystems. The distribution of species is expected to shift, the risk of climate-related disturbance such as wildfires, disease, and drought is expected to rise, and forest productivity is projected to increase or decrease depending on species and region. The ecosystems most susceptible to temperature rise are the alpine and sub-alpine forest cover. In addition, changes in fire frequency are expected to lead to an increase in grasslands, largely at the expense of woodland and shrub-land ecosystems.

##### Wildfires<sup>17</sup>

The changing climate may modify the natural fire regimes in ways that could have social, economic and ecological consequences. The most recent analysis, which is a conservative estimate that does not include the effects of extreme fire weather, indicates that wildfire will increase, especially as warming intensifies. These projections suggest that the risk of large wildfires statewide may rise almost 35 percent by mid-century, 55 percent by the end of the century under a medium-high emissions scenario, and almost twice that expected under lower emissions scenarios.

**Figure 4-8. Percent change in the expected minimum number of large fires per year in California**



Source: Westerling et al., 2006

These increases in fire season severity could lead to more “bad air” days as well as increased damage costs of approximately 30 percent above current annual damage

Although society has developed a number of ways to adapt to wildfires, climate change, along with the multiplying impacts of other stresses such as population growth and land-use change, may be pushing California outside of its coping range.

However, in the short-term, California can take actions to improve its ability to live within the state's fire-prone landscapes while maintaining the functioning and structure of the ecosystems upon which its residents depend. These include<sup>18</sup>: 1) the adoption of a risk-based framework for fire management; 2) the reintroduction of fire to fire-prone ecosystems (managing natural fires in some regions rather than suppression); 3) creation of new and flexible policies that are able to differentiate between the diverse ecosystems in California; and 4) a re-evaluation of urban planning and building in the wildland-urban interface.

#### Pests and Pathogens<sup>19</sup>

Historically, pests and disease have caused significant damage to California forests. The changing climate may exacerbate these effects by expanding the range and frequency of pest outbreaks. For example, the introduced pathogen, pine pitch canker (*Fusarium subglutinans* f. sp. *pini*), once limited to coastal



areas of California, has expanded to the El Dorado National Forest in the Sierra Nevada. Rising winter temperatures in the Sierra Nevada would make conditions more favorable for pitch canker and could result in increased disease severity and economic loss.

#### Forest Productivity<sup>20</sup>

Several studies have projected increases in forest productivity under future climate change. However, recent studies indicate that it is uncertain how trees will respond to elevated CO<sub>2</sub> concentrations, and that there will be increased risk and susceptibility to catastrophic loss. Thus, the implications for the forest productivity and the timber industry may be less optimistic.

The most recent assessment of the impact of climate change on the California forest sector used an industry standard planning tool to forecast 30-year tree growth and timber yields for forest stands in El Dorado County under a high and medium temperature scenario.

Conifer tree growth was reduced under all climate change scenarios. If temperatures rise to the projected medium warming range, productivity in mature stands is expected to decline by 20 percent toward the end of the century. The reductions in yield were more severe (30 percent) for pine plantations. Projections further indicate that the reduced growth rates could lead to substantial decrease in tree survival rates.

#### **4.7 Electricity Sector Impacts**<sup>21</sup>

Changes in temperature and other meteorological variables will affect both the generation of and demand for electricity. This section discusses the potential effects of climate change on hydropower production and electricity demand in California.

##### Energy Supply—Hydropower

Changes in precipitation levels, should they occur, and patterns and timing of snowmelt would alter the amount of electricity that hydroelectric facilities could generate. It would also affect seasonal availability, with less water available for hydroelectric generation in the late spring and summer months when demand is the highest.

In addition, there is a high likelihood that changes in precipitation and runoff patterns would lead to changes in broader water policies and end-use priorities, such as water supply and flood control, which could impose further limitations on hydroelectric production. Currently, hydropower generation contributes about 15 percent of the in-state electricity production, with a range from 9 to 30 percent due to variations in climatic conditions.

Past studies have suggested that annual hydropower generation will increase or decrease with increasing or decreasing precipitation levels in California. The most recent study using an economic-engineering optimization model of the state water system suggests that under a medium range of temperature increase and decreased precipitation levels, annual generation by the end of this century

would decrease by about 30 percent and stream flows would decrease by 28 percent.

Another new study prepared by the Department of Water Resources (DWR) simulating the State Water and Central Valley Projects suggests reductions of approximately 7 percent in hydropower unit electricity generation for most scenarios by mid-century. However, one exception is the low temperature scenario in the less dry model, where electricity generation is projected to increase by approximately 4 percent.

It is important to emphasize that even relatively small changes in in-state hydropower generation results in substantial extra expenditures for energy generation, because losses in this "free" generation must be purchased from other sources.

For example, assuming a decrease of 10 percent from the current average in-state generation level from this renewable energy source, and assuming a price of about 10 cents per kilowatt-hour, this decrease would result in an additional \$0.35 billion per year in net expenditures to purchase sufficient electricity to replace the electricity that otherwise would be generated using hydroelectric resources.

#### Electricity Demand

Electricity demand is projected to rise between 3 to 20 percent by the end of this century. These results are based on correlation functions relating electricity demand with temperatures in key areas in California and future climate projections assuming current socio-economic conditions, including no change in present day population. In the next 20 years electricity demand would increase from 1 to 3 percent from the baseline, and peak electricity demand would increase at a faster rate.

Since annual expenditures of electricity demand in California represent about \$28 billion, even the relatively small increases in energy demand would result in substantial extra energy expenditures for energy services in the state. For example, assuming a linear increase in electricity expenditures from the historical period, a 3 percent increase in electricity demand by 2020 would translate to about \$1.2 billion a year in extra electricity expenditures.

#### Potential Coping Strategies

There are several options to reduce the negative effect of climate change on the electricity system. The use of modern probabilistic hydrological forecasts for the management of water reservoirs in the state is a promising option being studied. Some options needed to reduce climate change emissions can be seen as coping strategies. They include, for example, enhanced energy efficiency programs, increased penetration of photovoltaic systems, and the implementation of measures designed to reduce the heat island effect.

#### 4.8 Implications for Mitigation and Adaptation<sup>22</sup>

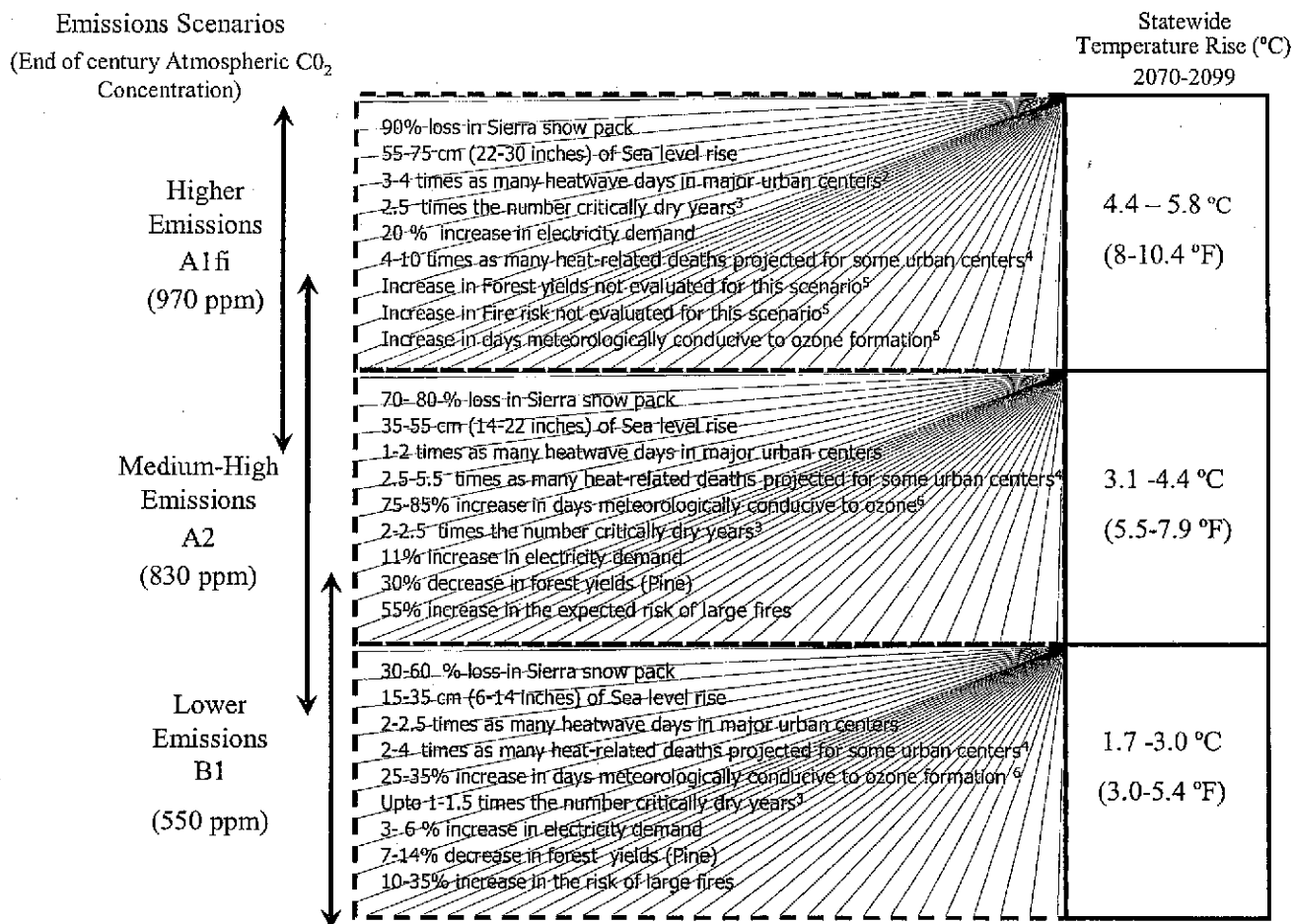
Continued climate change would have widespread impacts on California's economy, ecosystems, and the health of its citizens. However, analyses from the present study, summarized in Figure 17, suggest that many of the more severe impacts projected under the medium and higher warming ranges could be avoided by following the lower emissions pathway. It should be noted though, that, if the actual climate sensitivity to climate change emissions reaches the level of the more sensitive global climate models employed here, an even lower emissions path than the B1 scenario may be required to avoid the medium warming range. How much would climate change emissions have to be reduced to stay below the lower emissions pathway (B1) and insure against temperatures rising to the medium and higher warming ranges presented in this study? The Governor's Executive Order #S-3-05, calls for an 80% reduction in CLIMATE CHANGE emissions, relative to 1990 levels, by 2050. If the industrialized world were to follow California's lead and the industrializing nations transitioned to a lower emissions energy system as characterized by the B1 pathway, global emissions would remain below the lower emissions scenario (B1),<sup>3</sup> increasing the likelihood that California and the world would be on track to avoid the more severe impacts by preventing temperatures from rising to the medium warming ranging.<sup>4</sup> This estimate of the impact of an 80% reduction by the industrialized world on global emissions depends crucially on the development patterns of the Industrializing Nations. The SRES B1 scenario assumes development proceeds with a "high level of environmental and social consciousness" with a transition to "alternative energy systems" (Nakicenovic et al. 2000). Emission reductions targets such as the one set by the Governor's Executive Order could spur the innovation necessary to lead the World to a transition to alternative energy systems.

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<sup>3</sup>This was calculated as follows: 1) OECD population and total emissions were based on SRES B1 IMAGINE runs (Nakicenovic et al. 2000). OECD total emission in 1990 were 2.83 GtC; 2) 80% below this value is 566MtC; 3) Total global emissions was calculated by adding the 566 MtC to the total emissions for non-OECD countries, as projected by SRES B1. This value is approximately 10GtC; 4) This 10 GtC/yr was compared to the global emission projected in the B1 scenario (approximately 11 GtC/yr).

<sup>4</sup> As illustrated in figure 1, beyond 2050 global emissions will need to decrease substantially below 10 GtC/yr to stay on the B1 pathway out to the end of the century. The SRES B1 pathway assumes Global emissions decrease to 4.23 GtC/yr by 2100. However, stabilizing atmospheric concentrations will require even lower emissions as natural uptake is estimated between 0.7-2.9 GtC/yr (IPCC 2001).

**Figure 4-9. Projected Impacts End of Century**



1. Impacts presented relative to 1961–1990.
2. Los Angeles, San Bernardino, San Francisco, Sacramento, and Fresno.
3. Measures for the San Joaquin and Sacramento basins.
4. For Los Angeles, Riverside, and Sacramento.
5. Impacts expected to be more severe as temperatures rise. However, higher temperature scenarios were not assessed for the project.
6. Formation in Los Angeles and the San Joaquin Valley.

Climate projections show little difference between the emissions scenarios prior to 2035 due to the inertia of the climate system, indicating that even under the lower emissions path some further impacts from climate change are inevitable. Consequently, although it is not the solution to global warming, it is becoming clear that adaptation is an essential complementary strategy to manage some of the projected impacts of climate change. While there are many opportunities for California to increase its capacity to cope with the projected changes, these are often costly.

Furthermore, there are limits to adaptation, especially in addressing the threats of abrupt climate changes or in dealing with those impacts on natural, unmanaged species and ecosystems. These species may not be able to keep up with the increasingly rapid and severe climate change expected in future decades. Finally, the ability to cope and adapt is differentiated across populations, economic sectors, and regions within the state. As a result, without appropriate actions climate change will likely aggravate existing equity issues within California and the rest of the U.S.

For example, the most vulnerable populations to the health impacts of climate change are children, elderly people, and residents of minority and low-income communities—the same groups that already face the greatest health and environmental risks.

The Department of Water Resources and other State agencies have already started to include climate change considerations in their long-range plans. However, no cities in California have a heat emergency action plan; such plans are especially crucial to assist the elderly, especially those living in housing without air conditioning, who may be the most at risk from heat waves.

Thus, the Department of Health Services should develop heat emergency action plans for California (with a focus on protecting the economically disadvantaged) before the need arises. Existing air pollution control programs do not consider the effect of climate change on vulnerable populations; children and the elderly (especially those with pre-existing heart disease) are among the groups most vulnerable to air pollution episodes. Those that live closer to freeways and other emission sources (disproportionately in low-income and minority communities) are exposed to higher levels of pollution.

The Air Resources Board should work with the U.S. Environmental Protection Agency to begin to build climate change considerations into efforts to attain and maintain the health-based air quality standards over the long term.

Better monitoring of California's climate and sensitive climate related sectors will be crucial to detecting and understanding a complex chain of impacts. Finally, the State should continue to generate public discussion and build awareness of the need to manage climate change, develop enabling (or eliminating constraining) adaptation policies, and foster the political will necessary to critically assess and ultimately realize the State's significant adaptive potential.

## **5 RECOMMENDATIONS FOR EMISSION REDUCTION STRATEGIES**

The CAT evaluated a significant number of strategies that could be implemented in California to reduce climate change emissions. The strategies listed in the section represent the recommendations of the CAT regarding activities that should be undertaken in the state agencies to ensure the Governor's targets are met. Most of these strategies can be implemented with existing authority of the state agencies represented on the CAT.

## 5.1 Process for Strategy Selection

As a starting point for emission reduction strategy selection, the CAT relied upon information provided by the Tellus Institute, Center for Clean Air Policy, CEC's Integrated Energy Policy Report, and other existing evaluations of climate change emission reduction policies. The CAT agency representatives then went through a brainstorming exercise and each representative contributed to a larger list of potential emission reduction strategies that either their own agency or other agencies could implement.

The CAT as a whole discussed each strategy and reviewed work plans that included implementation steps, a timeline, and estimated potential emission reductions and costs. From these work plans it was determined which emission reduction strategies could be recommended to the Governor and Legislature at this time and which were either infeasible or would require further analysis.

The CAT then held two public workshops to review the strategies with the public. CAT representatives also met with representatives from low-income and minority communities, environmental organizations, industry representatives, and non-government organizations to review and discuss the list of strategies. Based on comment received at those workshops and meetings, the group made revisions and developed a final list of recommended strategies included in this document.

## 5.2 Strategies Cal/EPA Will Implement Over the Next Two Years

Table 5-1Table 5-2 lists all of the strategies that Cal/EPA will implement over the next two years. By 2020, the Air Resources Board's vehicle climate change emission standards will provide the largest emission reductions of any of the strategies being recommended by the Climate Action Team. The large auto manufacturers are currently challenging California's right to set climate change emission standards for vehicles. Governor Schwarzenegger has pledged his support in defending the State's right to require the sale of cleaner cars. The Integrated Waste Management Board will continue to pursue stringent waste reduction and recycling goals and is working towards better understanding of landfill gas emissions and best practices for capture and use of those emissions.

**Table 5-1. Environmental Protection Agency**

Climate Change Emission Reductions (Million Metric Tons CO <sub>2</sub> Equivalent)		
	2010	2020
Air Resources Board		
Vehicle Climate Change Standards	1	30
Diesel Anti-Idling	1	1.2
Other New Light Duty Vehicle Technology	0	4

Improvements		
HFC Reduction Strategies	2.7	8.5
Transport Refrigeration Units, Off-road Electrification, Port Electrification (ship to shore)	<1	<1
Manure Management	1	1
Semi Conductor Industry Targets (PFC Emissions)	2	2
Alternative Fuels: Biodiesel Blends	<1	<1
Alternative Fuels: Ethanol	<1	3.2
Heavy-Duty Vehicle Emission Reduction Measures	0	3
Reduced Venting and Leaks in Oil and Gas Systems	1	1
Hydrogen Highway	Included <sup>2</sup>	
Integrated Waste Management Board		
Achieve 50% Statewide Recycling Goal	3	3
Landfill Methane Capture	2	3
Zero Waste—High Recycling		3

<sup>1</sup> These estimates are based on best available current information and will be updated as needed.

<sup>2</sup> The benefits of the Hydrogen Highway have been captured in other programs such as the motor vehicle regulations and green buildings initiative.

A summary description of each of the strategies in Table 5-1 is included below:

#### Vehicle Climate Change Standards

With the passage of AB 1493, Pavley, Chapter 200, Statutes of 2002, California moved to the forefront of reducing vehicle climate change emissions. This bill required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.

The ARB analysis of this regulation indicates emissions savings of 1 million tons CO<sub>2</sub> equivalent (MMtCO<sub>2</sub>e) by 2010 and 30 million tons CO<sub>2</sub> equivalent by 2020<sup>23</sup>. This analysis also suggests that operating cost savings will more than offset the incremental costs of improved technologies, resulting in consumer savings of \$5 billion annually by 2020.

#### Diesel Anti-Idling

Reduced idling times and the electrification of truck stops can reduce diesel use in trucks by about 4 percent, with major air quality benefits. In July 2004 the ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.<sup>24</sup> ARB

analysis indicates that anti-idling measures could reduce climate change emissions by 1.2 MMtCO<sub>2</sub>e in 2020.<sup>25</sup> ARB also estimates that the proposed measures would provide savings of up to \$575 million (NPV through 2013) to California businesses as a result of fuel savings and reduced engine maintenance costs.

#### Other New Light Duty Vehicle Technology Improvements

In September 2004 the California Air Resources Board approved regulations to reduce climate change emissions from new motor vehicles. The regulations apply to new passenger vehicles and light duty trucks beginning with the 2009 model year. The standards adopted by the Board phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009–2012) standards will result in about a 22 percent reduction as compared to the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30 percent reduction.

New standards would be adopted to phase in beginning in the 2017 model year (following up on the existing mid-term standards that reach maximum stringency in 2016). Assuming that the new standards call for about a 50 percent reduction, phased in beginning in 2017, this measure would achieve about a 4 MMT reduction in 2020. The reduction achieved by this measure would significantly increase in subsequent years as clean new vehicles replace older vehicles in the fleet—staff estimates a 2030 reduction of about 27 MMT.

#### Hydrofluorocarbon Reduction Strategies

ARB staff has identified five possible measures to reduce HFC emissions from vehicular and commercial refrigeration systems:

1. *Ban the retail sale of hydrofluorocarbon (HFC) in small (mostly 12-oz.) cans.* This would end the loss of can “heels” (small amounts of HFCs remaining in the can after service is complete) and prevent do-it-yourself re-filling of vehicular air conditioning systems.
2. *Require that only low-GWP refrigerants be used in new vehicular systems.* For vehicles subject to the ARB motor vehicle climate change emission reduction regulations, this requirement would take effect in 2017 because the adopted regulations already specify standards and compliance options through 2016. For medium- and heavy-duty vehicles not subject to the AB 1493 regulation, the requirement would take effect in the 2010 timeframe.
3. *Adopt specifications for new commercial refrigeration.* Limit the global warming potential of refrigerants used in refrigerators in retail food stores, restaurants, and refrigerated transport vehicles (trucks and railcars) and/or require that centralized systems with large refrigerant charges and long distribution lines be avoided in favor of systems that use much less refrigerant and lack long distribution lines.
4. *Add refrigerant leak-tightness to the “pass” criteria for vehicular Inspection and Maintenance programs (all vehicles) and adopt an “inspect*



and repair” measure for commercial systems. Require that systems either be leak-free at smog-check or be empty and inoperable.

5. *Enforce the federal ban on releasing HFCs.* This measure would focus on reducing emissions during the servicing and dismantling of vehicular air conditioners and commercial refrigeration systems.

#### Transportation Refrigeration Units, Off-road Electrification, Port Electrification (ship to shore)

##### *Transportation Refrigeration Units*

Require all new transportation refrigeration units (TRU) to be equipped with electric standby.

Require cold storage facilities to install electric infrastructure to support electric standby TRUs.

The technologies to be employed in this measure include electric standby for TRUs and electric infrastructure at cold storage facilities.

Emission reduction estimates are about 0.14 MMT in 2020 assuming 50 percent electrification and TRU operation at a facility of about 30 percent.

##### *Off-road Electrification*

Off-road electrification would likely be achieved using a combination of regulatory and incentive approaches. ARB could conduct outreach to encourage replacement of diesel engines with electric motors to take advantage of the incentive rate structure and Moyer funding, and to comply with District and pending ARB regulations.

The in-use stationary diesel agricultural engine regulation currently under development at ARB will propose emission performance standards for engines rather than mandate electrification or any other specific technology. Staff believes that most engines will be replaced with new cleaner certified diesel engines or with electric motors. Retrofit and alternative fuels are other potential means of compliance.

##### *Port Electrification*

ARB would require phase-in of vessel modifications and infrastructure to support expanded use of shore-side power.

Technologies to be employed in this measure include vessel modifications and shore-side infrastructure.

Shore-side power could be used in 2 to 5 percent of ship visits in 2010 and 20 to 25 percent of ship visits in 2020. The reductions in CO<sub>2</sub> emissions are calculated as the difference between the CO<sub>2</sub> emissions resulting from the generation of shore-side power supplied by utility companies and the CO<sub>2</sub> emissions resulting from power generated by shipboard diesel generators.

2010

Goal: 5 percent of ship visits use shore-side power

Estimated CO<sub>2</sub> reduction: 0.016 MMT

2020

Goal: 25 percent of ship visits use shore-side power

Estimated CO<sub>2</sub> reductions: 0.18 MMT

#### Manure Management

Proposed San Joaquin Valley Rule 4570, Confined Animal Facilities, is intended to reduce volatile organic compounds (VOC) from confined animal facilities and is in the initial stages of development. Some general concepts that may appear in the rule include: (1) different requirements based on facility size; (2) specific control requirements included on a list of technologies; (3) a mix of control options selected from a list; and (4) a facility-wide control efficiency that will achieve a certain percentage reduction. Possible control options include management practices, manure handling practices, and lagoon/liquid waste control options.

Emission reduction estimates of approximately 1 million tons (MMT) could be achieved through the use of biogas digesters along with the production of electricity and/or heating applications. ARB estimates of climate change emission reductions through implementation of anaerobic digesters have yet to be determined.

#### Semi Conductor Industry Targets (PFC Emissions)

ARB could help target climate change emission reductions through development of a model rule to be considered for adoption by the districts. Based on the voluntary target outlined in the Memorandum of Understanding between the U.S. EPA and the Semiconductor Industry Association, emission reduction estimates of approximately 2 MMT for semiconductor operations in both 2010 and 2020 are possible.

#### Alternative Fuels: Biodiesel Blends

ARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel. A climate change emission reduction of about 0.4 MMT would be achieved in 2010 based on 2 percent displacement of diesel fuel. ARB and CEC staff estimate that biodiesel could likely provide up to a 4 percent displacement of diesel fuel by 2020. This would provide about 0.8 MMT of climate change emission reductions. It is important to note, however, that current supplies of biodiesel are limited in California. Thus this strategy presumes significant market expansion in addition to regulatory steps.

#### Alternative Fuels: Ethanol

More than 200,000 flexible fueled vehicles are present in California today that could use E-85 without any equipment modifications. This number will increase as manufacturers continue to produce additional new cars that are E-85 compatible. If E-85 became widely available at prices competitive with gasoline, a significant portion of the fleet could be fueled primarily with ethanol by 2015.

The percentage of ethanol used in gasoline could be increased to the maximum 10 percent (E-10) that is compatible with current vehicles. (The current gasoline supply contains 5.7 percent ethanol). However, significant permeation emissions caused by low percentage ethanol blends used in the summertime suggest that low percentage blends are best limited to wintertime use. In addition, other fuel properties may need to be adjusted to ensure that the use of E-10 does not increase emissions of smog forming compounds.

If ethanol used in California continues to be derived from corn or other similar grains, the climate change emission benefits due to increased use of E-85 would be negligible in 2010 and 2.7 MMT in 2020 (assumes that about 10 percent of the entire light duty vehicle fleet uses E-85 regularly.) Use of ethanol derived from biomass or waste material would more than double the climate change emission reduction benefit.

Using 10 percent ethanol content in gasoline during the wintertime (six months) would result in ethanol use roughly equivalent to the level required under the recently adopted federal energy bill, and thus produce no additional climate change emission reduction benefits.

#### Heavy-Duty Vehicle Emission Reduction Measures

Climate change emissions can be reduced with improved aerodynamics, climate engine-based improved efficiency, vehicle weight reduction, and rolling and inertia resistance improvements. ARB has also identified other possible measures, such as an education program for the heavy duty vehicle sector as well as the light and medium duty vehicle sectors that would educate drivers as to how to optimize vehicle operation.

Emission reduction estimates of about 0.2 MMT for 2010 and about 3 MMT for 2020 were derived assuming an efficiency improvement of 65 percent from 1990 levels is possible by 2030. These estimates were based on ARB/CEC estimates of fleet-wide diesel-use reductions achievable under a national approach based on DOE's 21<sup>st</sup> Century Truck Program.

#### Reduced Venting and Leaks in Oil and Gas Systems

A model rule would be developed to be considered for adoption by the Air Pollution Control Districts. This measure involves improved management practices and does not rely on the application of new technology.

Estimated potential climate change emission reductions of 1 MMt CO<sub>2</sub> equivalent were derived assuming reduced leak and venting in the production, processing, transport, and distribution of oil and natural gas in 2010 and 2020. This goal is based on U.S.EPA estimates that approximately 33 percent of emissions from oil and gas systems can be avoided cost-effectively.

#### Hydrogen Highway

The California Hydrogen Highway Network (CA H<sub>2</sub> Net) is a State initiative to promote the use of hydrogen as a means of diversifying the sources of transportation energy in order achieve a secure energy future, address

environmental, public health, and economic challenges, and work in partnership with other State programs to advance energy efficiency and renewable energy. The CA H2 Net mission is to assure that hydrogen infrastructure is in place as fuel cells and other hydrogen technologies reach commercial readiness.

Hydrogen can be derived from a variety of sources including petroleum based feedstock to a range of renewable resources. To assure that the production of hydrogen and operation of hydrogen fueled vehicles is environmentally beneficial the CA H2 Net has the clearly defined goals of utilizing at least 20 percent renewable resources in the production of hydrogen, reducing climate change emissions by at least 30 percent, and to not increase smog forming and toxic pollutants relative to fossil fuel vehicle use.

#### Achieve 50% Statewide Recycling Goal

Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. Currently a diversion rate of 48 percent has been achieved on a statewide basis. This strategy would result in achieving an additional 2% waste diversion of recyclables from landfills using existing authorities and mandates, collection infrastructures, and recycling processes.

#### Landfill Methane Capture

Methane production varies greatly from landfill to landfill depending on site-specific characteristics such as the quantity of waste in place, waste composition, moisture content, landfill design and operating practices, and climate. Unless captured first by a gas recovery system, methane generated by the landfill is emitted when it migrates through the landfill cover to the atmosphere and becomes a potent climate change emission.

Landfills can install direct gas use projects or electricity projects with backup flare systems to capture and use methane. The technical applicability of any mitigation option is dependent on the amount of landfill gas generated by landfills in a given size category.

#### Zero Waste—High Recycling

Additional recovery of recyclable materials from landfills will reduce the climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. Transforming organics/biomass and plastic waste into marketable products will also reduce the amount of material going to landfill, and therefore will further reduce climate change emissions. Currently, the State is mandated to divert 50 percent of waste going to landfills as established by the Integrated Waste Management Act of 1989. Efforts to exceed the 50 percent goal would allow for additional reductions in climate change emissions.

### 5.3 Strategies the Resources Agency will Implement over the Next Two Years

Table 5-2 lists all of the strategies that Resources Agency will implement over the next two years. The Forest management efforts promise not only climate change emission reductions but also protect biodiversity, water quality and habitat resources. For three decades the California Energy Commission has led the world with the most progressive new building and appliance efficiency standards. These efficiency standards have provided substantial climate change emission reductions and have saved consumers about \$1,000 per household in California. Finally, by reducing the energy used to transport and deliver water in the State and increasing water use efficiency California can both protect our water supply and reduce climate change emissions.

**Table 5-2. Resources Agency**

Climate Change Emission Reductions (Million Metric Tons CO <sub>2</sub> Equivalent)		
	2010	2020
<b>Department of Forestry</b>		
Forest Management	1-2	2-4
Forest Conservation	4.2	8.4
Fuels Management/Biomass	3.4	6.8
Urban Forestry	0	3.5
Afforestation/Reforestation	0	12.5
<b>Department of Water Resources</b>		
Water Use Efficiency	0.4	1.2
<b>Energy Commission</b>		
Building Energy Efficiency Standards in Place	1	2
Appliance Energy Efficiency Standards in Place	3	5
Fuel-Efficient Replacement Tires & Inflation Programs	1.5	1.5
Building Energy Efficiency Standards in Progress	TBD	TBD
Appliance Energy Efficiency Standards in Progress	TBD	TBD
Cement Manufacturing	<1	<1
Municipal Utility Energy Efficiency Programs/ Demand Response	1	5.9

Municipal Utility Renewable Portfolio Standard	<1	3.2
Municipal Utility Combined Heat and Power	0	<1
Municipal Utility Electricity Sector Carbon Policy	3	9
Alternative Fuels: Non-Petroleum Fuels	TBD	TBD

<sup>1</sup> These estimates are based on best available current information and will be updated as needed.

A summary description of each of the strategies in Table 5-2 is included below:

#### Forest Management

Strategies for storing more carbon through forest management activities can involve a range of management activities such as increasing either the growth of individual trees, the overall age of trees prior to harvest, or dedicating land to older aged trees. With roughly 4 million acres of private managed forestland in California, changes in forest management can produce significant amounts of climate change emission reduction benefits for the state.

Inclusion of the forest sector in climate mitigation policy can lead to additional local environmental benefits that may help the state's resources adapt to potential negative effects of climate change. Overall changes in forest management can enhance and protect biodiversity, water quality, and habitat resources that the state will increasingly seek to protect in the advent of climate change.

Forest management projects could be included in a broader multi-sector climate change emission market-based program or climate trust system. In a market-based program, forest management projects could provide offsets that would be purchased by capped entities. In a climate trust program, the state would fund forest management projects and recapture the costs by selling carbon credits to industries needing to reduce their climate change emissions.

The regulatory framework for timber harvesting requires landowners to secure permits from a large number of agencies to meet the requirements of the Forest Practice Act, Endangered Species Act, and Clean Water Act. Together the time and cost of obtaining these permits have led to conversions of timberlands to other uses and made it more difficult and time consuming to implement forest management activities that would increase carbon storage. Simplification of the permitting processes for forest management and timber harvesting would result in additional carbon being stored over a larger number of acres.

#### Forest Conservation

Conservation projects are designed to minimize/prevent the climate change emissions that are associated with the conversion of forestland to non-forest uses by adding incentives to maintain an undeveloped forest landscape.

California is losing forestland at increasing rates: 35,000 to 40,000 acres of private forestland is converted annually to non-forest uses (Bill Stewart, 2005),

which could contribute as much as 12 million tons of CO<sub>2</sub> emissions annually. Policies designed to minimize or prevent forestland conversion to non-forest uses could provide significant benefits by 1) preventing or minimizing climate change emissions that are associated with increasing forestland conversion in California and 2) maintaining the opportunity to increase forest carbon stocks on these lands through additional sequestration over time.

Forest conservation can also enhance and protect biodiversity, water quality, and habitat resources that the state will increasingly seek to protect from the negative effects of climate change. Finally, in contrast to the other forest sector strategies such as reforestation, the climate benefits of forest conservation are immediate.

Specific actions that can be taken include establishing a state forest conservation program that operates independently from the federal Forest Legacy program; increasing Forest Legacy Program Funding with an \$11 million annual investment that could prevent the conversion of 14,000 acres of forestland. Another step could include directing the Wildlife Conservation Board, the State Conservancies, and other state land acquisition and easement programs to consider climate benefits in evaluating and ranking projects to be funded. Finally, the state could include forestland conservation as an emission reduction project in a broader multi-sector climate change market-based program or climate trust system.

#### Fuels Management/Biomass

Large, episodic, unnaturally hot fires are an increasing trend on California's wild lands because of decades of fire suppression activities, sustained drought, and increasing insect, disease, and invasive plant infestations. Actions taken to reduce wildfire severity through fuel reduction and biomass development would reduce climate change emissions from wildfire, increase carbon sequestration, replace fossil fuels, and provide significant local economic development opportunities.

Fire management and biomass development projects could be accelerated by establishing a new state goal of thinning, removing, and treating 212,000 acres of public and privately owned forestland annually by 2010, and 275,000 acres by 2020. Such projects would: 1) reduce the intensity of wildfires and their associated climate change emissions; 2) increase the carbon stock of the remaining trees, 3) remove pests that create mortality of live stored carbon and reduce large damaging wildfires, 4) reduce state and local fire suppression costs; 5) provide a source of renewable alternative fuel; and 6) provide significant rural economic development opportunities.

#### Urban Forestry

This strategy would expand the State Urban Forestry Program. A new state-wide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs. At a cost of \$100 per tree, \$500 million would have to be invested by local urban forestry programs to meet this target.

This could be achieved by issuing an Executive Order to establish a new state-wide goal and directing the Board of Forestry and California Department of Forestry to launch an aggressive public assistance and outreach campaign to expand local urban forestry programs. The state could request that the California Climate Action Registry develop and adopt a protocol for the certification of climate change emission reductions from local urban forestry programs.

This strategy would develop new urban biomass programs. The California Department of Forestry would develop an urban biomass utilization program to provide technical advice, planning, education, and seed money for local government marketing centers for biomass waste.

#### Afforestation (Planting Trees)/Reforestation Projects

Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types. Recent studies have estimated that approximately 9 million acres of land in California could be reforested to increase carbon stocks and provide other benefits. Each of these acres has the potential to store between 150 to 230 tons of carbon.

Specific actions that could be taken include: establishing a new statewide goal of reforesting 500,000 acres of forestlands by 2020, including 250,000 acres on private lands and 250,000 acres on federal lands; seeking \$30 million annually, or \$300 million in bond funds to meet these targets; establishing a long-term loan program to fund private land reforestation; establishing a multisector market-based program where reforestation projects can be included as offsets in a broader, multi-sector climate change market-based program; and establishing a state-owned carbon bank, modeled after Oregon's Climate Trust, as part of a market-based program.

#### Water Use Efficiency

Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. The California Energy Commission (CEC) estimates 44 million tons of CO<sub>2</sub> emissions are expelled annually on average to provide the 44 million acre feet (MAF) of water used statewide.

The key to the reduction of climate change emissions through water use efficiency is strategic investment in measures tied to water energy intensity. When a unit of water is saved, so too is the energy required to convey, treat, affect local delivery, perform wastewater treatment and safely dispose of that unit of water. In short, saving water saves energy. Saving water that gets treated as wastewater saves more energy. Saving water that gets heated or additionally pressurized saves still more.

Region, elevation, water use sector, and energy source, among other factors, all influence water energy intensity. The statewide average for climate change emissions per acre foot is skewed by the wide local variation in the water energy intensity. Everything else being equal, a cooling tower condenser meter installed in an industrial plant in Northern California will save 2,920 kWh compared to



9,270 kWh saved annually in a comparable plant south of the Tehachapi Mountains.

Increased water use efficiency is the key element in the California Water Plan Update (Bulletin 160-05) plans to meet the state's needs for water in 2030 with a growing population. The plan calls for reducing urban water use by 1.1 to 2.3 MAF per year and agricultural water use by 0.5 to 2.0 MAF per year by 2030. Accelerating the investment to attain that water use savings by 2015 would result in an estimated additional climate change emission reductions of approximately 30 million tons cumulatively by 2030. Accelerating the investment to 2010 would result in a further cumulative reduction of 10 million tons.

The California Bay-Delta Authority's larger estimated potential for 3.0 MAF per year urban water use reduction requires a greater rate of local and state/federal investment in conservation. Incentive driven advances in water-saving technology over the next 25 years potentially could further push savings beyond the levels indicated.

A comprehensive program focused on the state's water and wastewater agencies and their customers would yield significant benefits to the state including: meeting the state's water plan, increasing energy system reliability and price stability, meeting the state's renewable portfolio standard goals and reducing the state's climate change emissions. Following are measures to include in this comprehensive program:

- Accelerate investment in water use efficiency: Accelerate implementation of best management practices and efficient water management practices (EWMP) and incentives. Coordinate this accelerated investment with the state's investments in energy efficiency. Start in the areas of the state with most energy-intensive water use cycles.
- Increase the energy efficiency of all water and wastewater treatment operations. Develop long-term programs to better mesh with the long-term investments in water and wastewater infrastructure.
- Improve price signals so that water-related energy use can be shifted off periods of peak energy demand.
- Increase water storage to increase operational flexibility throughout the water use cycle and reduce peak electric system energy requirements.
- Identify suitable locations for new pumped storage facilities. Construct facilities at these locations.
- Increase energy production by water and wastewater agencies from renewable sources such as in-conduit hydropower and biogas. Add generation from solar and wind resources.

#### Building Energy Efficiency Standards in Place

Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings). The

Energy Commission updates the standards at its discretion (i.e. three-year cycle for building standards). In addition to the long existing legislative mandates, recent policies have placed priority on and established specific goals for updating of the standards.

The Energy Action Plan and the Integrated Energy Policy Report both call for ongoing updating of the standards, including meeting energy efficiency goals, addressing demand response and promoting the combination of solar photovoltaics and high-energy efficiency buildings. The Energy Commission has also initiated work for the building standards that will go into effect in 2008 (i.e. the first of three update cycles that will occur prior to 2015).

#### Appliance Energy Efficiency Standards in Place

Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California). The Energy Commission updates the standards at its discretion. In addition to the long existing legislative mandates, recent policies have placed priority on and established specific goals for updating of the standards.

New standards for a variety of appliances were adopted in December 2004. Some standards under consideration in December were delayed to further consider manufacturer comments. Those standards are being developed by the Energy Commission at the present time. The estimates in Table 5-1 represent the expectation of full adoption of these standards.

#### Fuel-Efficient Replacement Tires and Inflation Programs

State legislation (Chapter 912, Statutes of 2001) directed the Energy Commission to investigate and to recommend ways to improve fuel efficiency of vehicle tires. The bill established a statewide program to encourage the production and use of more fuel efficient tires, and required the Energy Commission to:

- Establish a test procedure for measuring tire fuel efficiency.
- Develop a database on the fuel efficiency of existing tires in order to establish an accurate baseline of tire efficiency.
- Develop a rating system for tires that provides consumers with information on the fuel efficiency of individual tire models.
- Develop a consumer-friendly system to disseminate tire fuel-efficiency information as broadly as possible.
- Study the safety implications of different policies to promote fuel efficient replacement tires in the consumer market.
- Evaluate a mandatory fuel efficiency standard for all after-market tires sold in California.

- Develop consumer incentive programs that would offer a rebate to purchasers of replacement tires that are more fuel-efficient than the average replacement tire.
- Study ways to improve the fuel-efficiency of vehicles in the State's fleet.
- AB 844 later required tire manufacturers to report to the Energy Commission the rolling resistance and relative fuel economy of replacement tires sold in California.

#### Building Energy Efficiency Standards in Progress

As part of the process of updating the Building Energy Efficiency Standards, the Energy Commission evaluates new and emerging technology for possible inclusion in the standards. The CEC administers an ongoing "compliance option" process which evaluates to what extent compliance credit should be approved for new technologies and develops algorithms that can be used to properly evaluate their energy consequence within building simulation computer programs that are used for standards compliance.

Upon commission approval, compliance options can be used to demonstrate compliance with the performance approach in the standards. Once a compliance option has been in existence for a period of time, the commission often considers whether or not the compliance option should be made a requirement of the standards (as a prescriptive requirement and basis of the energy budget established for the performance standards).

#### Appliance Energy Efficiency Standards in Progress

As part of the process of updating the Appliance Energy Efficiency Standards, the CEC evaluates new and emerging technology for increasing the energy efficiency of appliances and equipment for possible inclusion in the standards. The Commission's Buildings and Appliances Office works on an ongoing basis with the Public Interest Energy Research (PIER) program and with the Utility Codes and Standards Programs to track promising new technologies and consider their appropriate inclusion in the standards.

Fundamentally, the standards updating process is achieved thorough technology assessment of the potential to include new technologies in the standards, and the program is continuously evaluating new technologies.

#### Cement Manufacturing

This strategy involves cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry. There is a large technical potential to improve energy efficiency in cement operations at a reasonable cost.

Climate change emissions from burning fossil fuels in the manufacturing of cement produces 1.5 to 2.0 percent of U.S. carbon dioxide emissions. Roughly half is from fossil fuel combustion and roughly half is from the conversion of limestone (45 million tons per year). California's cement industry produced 5.6

million metric tons in 2001; total statewide climate change emissions approached 500 million metric tons in 2001.

Annual emissions from the manufacturing of cement are growing at a rate of 2 percent per year, according to industry sources and using California-specific data. Direct emissions of carbon dioxide are estimated to rise from 10.4 million metric tons in 2005 to more than 15 million metric tons in 2025. Use of limestone Portland cement and the use of blended cement account for 70 percent of the potential emission reductions and would cost less than \$10 per metric ton.

State policy options can take several forms, including technology mandates, financial incentives, negotiated agreements, voluntary commitments, emissions-intensity benchmarking, or mandatory measures. Policy changes would be needed to encourage the use of limestone and blended cement and to allow waste tires to be used as a fuel in cement manufacturing. Based on CEC's analysis, these measures have been shown to provide cost-effective climate change emission reduction benefits.

#### Municipal Utility Energy Efficiency Programs

The Energy Commission and the California PUC are collaborating on additional energy efficiency programs beyond those programs already adopted.

While the Energy Commission does not have regulatory authority over the publicly owned utilities in the way that the CPUC regulates the IOUs, the publicly owned utilities are required to report their energy savings to the CEC. A process to ensure comparability between public benefit program savings and funding data reported by public and investor-owned utilities will need to be established.

Possible steps for implementing this strategy include:

- Pursuing statutory modifications or a cooperative agreement with the publicly owned utilities to achieve the needed CO<sub>2</sub> reductions.
- Seeking statutory modifications or the establishment of a formal memorandum of understanding (MOU) with the utilities to achieve these targets.
- Pursuing statutory modifications or another mechanism to ensure that all load-serving entities account for climate change emissions and emission reductions in a manner consistent with investor-owned utilities.

#### Municipal Utility Renewable Portfolio Standard

California's Renewable Portfolio Standard (RPS), established in 2002, requires that all load serving entities achieve a goal of 20 percent of retail electricity sales from renewable energy sources by 2017, within certain cost constraints. The *2003 Energy Action Plan* and the *2003 Integrated Energy Policy Report* (2003 *Energy Report*) accelerated the 20 percent goal from 2017 to 2010. The *2004 Energy Report Update* further recommended an increased goal of 33 percent renewable by 2020, which the California Public Utilities Commission (CPUC) and the California Energy Commission (Energy Commission) adopted in the *2005 Energy Action Plan II*.

The Energy Commission and the CPUC are responsible for implementing the RPS for the investor-owned utilities, electric service providers, and community choice aggregators. The publicly-owned utilities are responsible for implementing their own RPS programs.

The CPUC has undertaken a study to identify the steps necessary to achieve the 33 percent goal for the state's IOUs. The Energy Commission is undertaking a similar related study on RPS programs adopted by publicly-owned utilities, including barriers and policy options to accelerate those programs to reach the 20 percent goal by 2010 and 33 percent goal by 2020. Possible steps for implementing this strategy include:

- Pursuing a cooperative agreement with the publicly-owned utilities to achieve the needed climate change emission reductions.
- Seeking statutory modifications to require the publicly owned utilities to contribute proportionally to the state's RPS goals.
- Seeking statutory modifications or a cooperative agreement to ensure that publicly-owned utilities account for climate change emissions and emission reductions in a manner consistent with investor-owned utilities.

#### Municipal Utility Combined Heat and Power

This strategy constitutes cost-effective reductions from fossil fuel consumption in the commercial and industrial sector through application of on-site power production to meet both heat and electricity loads. To effectively implement this strategy, various policy instruments will likely be needed to attain the realistic market potential and subsequent climate change emission reductions.

These policy mechanisms may include regulatory incentives to encourage utilities to promote customer and utility-owned CHP, utility rate structures that are transparent and connected to market forces where externalities such as environmental impacts and transmission and distribution constraints are internalized, rules and regulations enabling easier access to wholesale markets, production tax credits for CHP, and other measures or incentives directed at key commercial and industrial activities in California.

Through existing efficiency commercialization programs at the CEC where relationships have been well established with the commercial and industrial sectors, a set of implementation activities will be developed that include:

- Utility tariffs to enable CHP owners to sell excess on-site electricity generation to the utility at prevailing wholesale prices. Existing analysis suggests this would be very effective in stimulating the near-term (next 5 years) market.
- Climate change emission reduction credits to reflect the net reduction of climate change emissions for the CHP systems compared to the avoided electricity and boiler fuel emissions.
- Transmission and distribution benefit payments that reflect the local and temporal benefits CHP provides utilities.

- Utility regulatory incentives to encourage utilities to promote installation of customer- and utility-owned CHP projects.

#### Municipal Utility Electricity Sector Carbon Policy

The Energy Commission and the CPUC are collaborating on additional programs to address ways to transition investor-owned utilities away from carbon-intensive electricity sources. Some publicly owned utilities have historically relied on coal-based generation, and many of these facilities will reach the end of their design life by 2020. The Energy Commission will explore options to encourage municipal utilities to transition away from carbon-intensive generation to low-carbon alternatives, and to reduce purchases of carbon-intensive power. Options include establishing emissions targets or caps, providing incentives for preferred generation options, and setting a climate change emission performance standard for new utility resource procurement, including both coal and non-coal resource additions.

In its recently adopted *2005 Integrated Energy Policy Report*, the Energy Commission recommends:

- Any climate change emission performance standard for utility procurement should be set no higher than emission levels achieved by a new combined-cycle natural gas turbines. In the case of coal-fired generation, the capacity to capture and store carbon dioxide safely and inexpensively is essential for meeting these standards.
- The state should specify a climate change emission performance standard and apply it to all utility procurement, including in-state generation and out-of-state purchases, coal, and non-coal resources.
- Additional consideration is needed before determining what role climate change emission offsets could play in complying with such a standard.
- The Energy Commission should work with the CPUC to develop a framework that accounts for the financial risk of reliance on carbon-based generation.
- California should have a consistent electricity carbon policy for all electric utilities within the state that applies to both in-state generation and out-of-state power purchases.

#### Alternative Fuels: non-Petroleum Fuels

This strategy involves increasing the use of non-petroleum fuels in California's transportation sector, as recommended in the Energy Commission's *2003 and 2005 Integrated Energy Policy Reports*. The Governor has also directed the Energy Commission to develop a workable, long-term transportation fuels plan that will result in significant reductions in gasoline and diesel use and that will establish realistic and achievable objectives. The Bio-Energy Interagency Working Group, which the Energy Commission is leading, has been asked to recommend options for optimizing the market potential for bio-fuels through a coordinated state level effort.

State policy options can take several forms, including technology performance standards, financial incentives, negotiated agreements, voluntary commitments, emissions-intensity benchmarking for fuel producers or automobile manufacturers, or other mandatory measures, such as fuels or motor vehicle standards or a market-based program. Based on our analysis, some alternative fuels have been shown to provide cost-effective climate change emission reduction benefits. But they face economic, market, or regulatory barriers that are impeding their use.

To achieve the benefits of this strategy, the following implementation issues would need to be overcome:

- The high first cost of alternative-fuel vehicles, when compared to conventional vehicles using internal combustion engines.
- The absence of a convenient retail fueling network to dispense alternative fuels to customers.
- Other regulatory and market barriers.

#### 5.4 Strategies Other State Agencies will Implement over the Next Two Years

Table 5-3 lists all of the strategies that other state agencies will implement over the next two years. Many participants at the Climate Action Team public meetings, particularly in Southern California, indicated that smart land use and increased transit availability should be a priority in the state. The participation of Business, Transportation and Housing Agency on the Climate Action Team has highlighted the fact that such strategies can provide substantial climate change emission reductions. Similarly the efforts of the Department of Food and Agriculture and the State and Consumer Resources Agency provide benefits beyond their climate change emission reduction potential.

**Table 5-3. Other State Agencies**

Climate Change Emission Reductions (Million Metric Tons CO <sub>2</sub> Equivalent)		
	2010	2020
<b>Business, Transportation and Housing</b>		
Measures to Improve Transportation Energy Efficiency	1.8	9
Smart Land Use and Intelligent Transportation	5.5	18
<b>Department of Food and Agriculture</b>		
Conservation tillage/cover crops	TBD	
Enteric Fermentation	<1	<1

State and Consumer Services Agency		
Green Buildings Initiative	0.5	1.8
Transportation Policy Implementation	TBD	

<sup>1</sup> These estimates are based on best available current information and will be updated as needed.

A summary description of each of the strategies in Table 5-3 is included below:

#### Measures to Improve Transportation Energy Efficiency

This strategy builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools and information that advance cleaner transportation and reduce climate change emissions.

The effort includes the following:

- Incorporating energy efficiency and climate change emissions reduction measures into the policy framework governing land use and transportation, including framework for developing energy element in state transportation and regional planning documents. Better coordination on cross-agency climate change and energy policy framework to ensure a concerted effort and synergy among state agencies' climate change emission reduction activities.
- Increasing incentives and accelerating technology applications to improve transportation system productivity and move toward cleaner and more efficient vehicles, especially for the public sector fleet. Enhancing outreach and educational programs to bring a coordinated message of sustainable transportation and root causes of climate change emissions.
- Diversifying transportation energy infrastructure and advancing measures to slow the rate of vehicle miles traveled growth and excessive reliance on petroleum.

#### Smart Land Use and Intelligent Transportation

Smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce and socioeconomic needs for the full spectrum of the population.

Intelligent Transportation Systems (ITS) is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. Smart growth/land use and ITS would minimize the need for major capital improvements and can provide a host of benefits including more livable communities, transportation energy efficiency, lower emissions from mobile sources, and a lower-cost provision of public services (e.g., sewer, water).



Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment. The Administration is pursuing funding and budgetary measures to support the strategic growth plan.

Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.

#### Conservation/Tillage Cover Crops

Conservation tillage and cover crops practices are increasingly being used by California farmers for a variety of reasons, including improved soil tilth, improved water use efficiency, reduced tillage requirements, saving labor and fuel, and reduced fertilizer inputs. However, due to the wide diversity of California agriculture, these practices must be demonstrated in a wide variety of cropping systems, soil types, irrigation regimes, and climate conditions.

This diversity also creates difficulty in quantifying both carbon emissions and potential carbon sequestration benefits from implementing conservation tillage and cover crops in the myriad of California cropping systems. This potential needs to be verified through extensive research directly applied to California conditions. Thus, the potential climate change emission reductions for 2010 and 2020 remains to be determined.

#### Enteric Fermentation

Enteric fermentation is the process of feed digestion by ruminant animals (primarily dairy and beef cattle). This process results in methane emission from the animals. To reduce climate change emissions resulting from enteric fermentation, feed adjustments may be made that improve milk and meat productivity.

New measures would include establishing a research initiative to quantify emission changes from enteric fermentation resulting from changing feed regimens versus productivity impacts. Different animal populations would have differing abilities to manage feed rations. For example, grass-fed beef would have little to no ability to reduce enteric emissions. Dairy operators vary feed rations based on numerous factors. Feed rations are a complex system that not only provide nutrition to the animal, but also provide cost-effective and efficient use of other agricultural by-products including food processing residuals, fruit culls, almond hulls, cotton seed, and even rice straw.

This system would have to be carefully analyzed to determine overall climate change emission effects if the use of these other residuals is altered. This analysis would include both a technical analysis and a cost effectiveness analysis that would be initiated in 2006.

Pricing of food commodities to reflect embodied climate change emissions is not recommended for any action at this time. A "calcium crisis" currently exists in this country, where a significant portion of women and children are calcium deficient. Milk and dairy products are a major source of calcium that should be available to these at-risk populations, especially those of low and moderate income, at affordable prices.

#### Green Buildings Initiative

Governor Schwarzenegger's Green Building Executive Order, S-20-04, sets an ambitious goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.

Preliminary estimates indicate that 6.5 million tons of CO<sub>2</sub> will be reduced annually by the year 2015 through building efficiency efforts in commercial and institutional buildings. This number is based on the average displaced power generation being an efficient natural gas combined cycle turbine. The 6.5 million-ton estimate has been adjusted in Table 5-2 to ensure against double counting amongst other strategies being recommended by the CAT.

### **5.5 Strategies the Public Utilities Commission will Implement Over the Next Two Years**

Table 5-4 lists all of the strategies that the Public Utilities Commission will implement over the next two years. Working in cooperation with the Energy Commission, the Public Utilities Commission has implemented the most progressive Renewable Portfolio Standard in the nation. The Public Utilities Commission has also been progressive in energy efficiency and clean energy programs for investor-owned utilities. Many stakeholders indicated that these programs should apply to the publicly-owned utilities as well.

**Table 5-4. Public Utilities Commission**

Climate Change Emission Reductions (Million Metric Tons CO <sub>2</sub> Equivalent)		
	2010	2020
Accelerated Renewable Portfolio Std to 33% by 2020 (includes load-serving entities)	5	11

California Solar Initiative	0.4	3
Investor Owned Utility Energy Efficiency Programs(including LSEs)	4	8.8
Investor-Owned Utility (IOU) Additional Energy Efficiency Programs/Demand Response	NA	6.3
IOU Combined Heat and Power Initiative	1.1	4.4
IOU Electricity Sector Carbon Policy	1.6	2.7

<sup>1</sup> These estimates are based on best available current information and will be updated as needed.

A summary description of each of the strategies in Table 5-4 is included below:

#### Accelerated Renewable Portfolio Standard (33 percent by 2020)

The Governor has set a goal of achieving 33 percent renewables in the State's resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33 percent goal. The PUC and Energy Commission have already commenced review of the legal, regulatory, and infrastructure changes necessary to achieve the Governor's goal.

The Center for Resource Solutions has prepared a preliminary report for the CPUC entitled *Achieving a 33% Renewable Energy Target* (The Center for Resource Solutions, November 1, 2005), which concludes that the 33 percent target by 2020 is achievable and discusses the major hurdles and necessary implementation steps. The report is a starting point for further review by the CPUC on instituting a 33 percent goal.

#### California Solar Initiative

The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.

Legislation to codify the Governor's initiative (SB 1) failed to pass the California Assembly in the fall of 2005. However, the PUC, in cooperation with the Energy Commission and the Governor's Office, will implement the California Solar Initiative under its existing statutory authority.

#### Investor-Owned Utility Energy Efficiency Programs

In September 2004, the PUC adopted aggressive savings targets for the investor-owned utility energy efficiency programs through 2013. The savings targets through 2013 are challenging goals to meet, and the PUC will reassess these targets and adopt more realistic goals during each three-year program cycle.

The PUC funds energy efficiency programs through the Public Goods Charge and the resource procurement budgets of the utilities. For the 2006–2008 program cycle, the total energy efficiency budget for all of the investor-owned

utilities is approximately \$2 billion, for a total projected annual net savings of 7,371 gigawatt hours and 121,989 million therms. These projections exceed the savings targets by 108 percent and 109 percent respectively. By 2008 these programs will reduce annual carbon dioxide emissions by more than 3 million tons per year.

#### Investor Owned Utility Additional Energy Efficiency Programs/Demand Response

In September 2004, the PUC adopted aggressive savings targets for the IOUs' energy efficiency programs through 2013. The savings targets through 2013 are stretch goals and the PUC will reassess these targets and adopt the actual goals during each three-year program cycle. The PUC funds energy efficiency programs through the Public Goods Charge and the IOUs' resource procurement budgets. For the 2006–2008 program cycle, the total energy efficiency budget for all of the IOUs is approximately \$2 billion, for a total projected annual net savings of 7,371 gigawatt hours and 121,989 million therms. These projections exceed the savings targets by 108 percent and 109 percent respectively. By 2008 these programs will reduce annual carbon dioxide emissions by more than 3 million tons per year.

Over the next year, the PUC will develop a risk/reward incentive mechanism for the IOUs and refine energy measurement and verification protocols. In 2008, the PUC will evaluate and adopt the 2009–2011 energy efficiency savings goals and programs of the IOUs.

#### Investor-Owned Utility Combined Heat and Power Initiative

This strategy encourages the installation of on-site power production to meet both heat and electricity loads, known as combined heat and power projects (CHP). The PUC's existing Self-Generation Incentive Program allocates \$0.80 per watt to eligible CHP projects in the territories of the IOUs, up to a capacity size of 5 MW. Currently, all SGIP funds are reserved through 2007, although funding may become available if proposed projects do not materialize.

This strategy would seek to develop additional programs to further encourage the development of CHP. These additional programs are not yet underway, will require further consideration, and could likely require administrative, legislative, regulatory, and budget initiatives. To effectively implement this strategy, it is likely various policy instruments will be needed to attain the realistic market potential and subsequent CO<sub>2</sub> reductions.

These policy mechanisms may include regulatory incentives to encourage IOUs to promote customer and utility-owned CHP, changes to IOU rate design, market rules and regulations enabling easier access to wholesale markets, production tax credits for CHP, and other measures or incentives directed at key commercial and industrial activities in California. Statutory modifications are required in order to apply a similar strategy for CHP programs implemented by publicly-owned utilities.

### Investor Owned Utility Electricity Sector Carbon Policy

The PUC is currently investigating various strategies and incentives to encourage the IOUs to make cost-effective procurement decisions that are based in part on reducing climate change emissions. These strategies include emissions targets or caps, incentives for preferred procurement options, and incentives for portfolio optimization and total cost minimization.

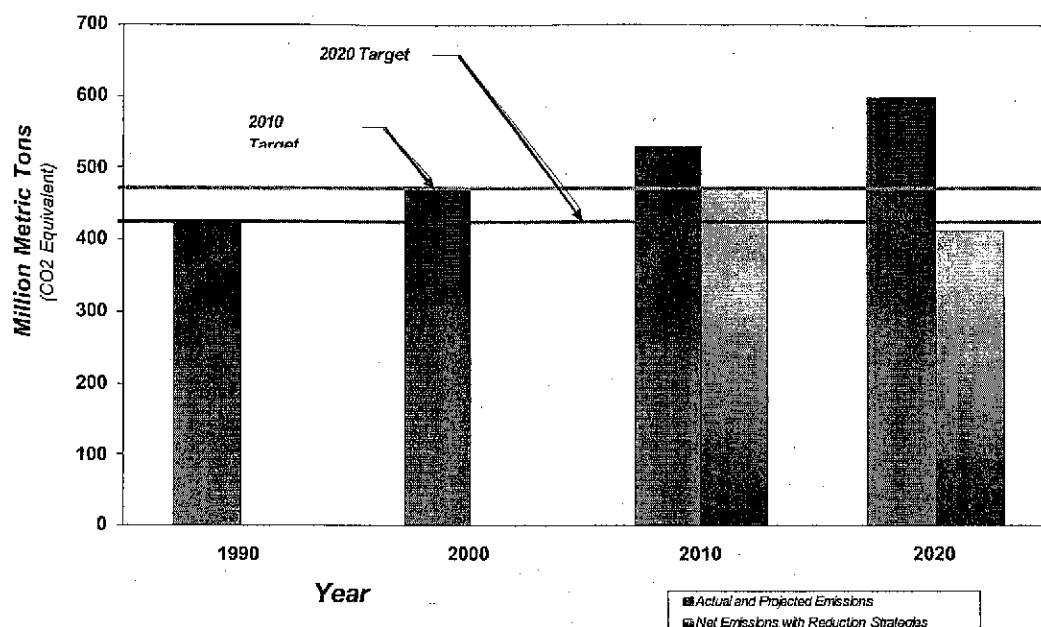
The PUC conducted workshops in March 2005 on the procurement incentive framework and issued a staff report in March 2005. The post-workshop comments were filed in April and May 2005. A final decision to include a carbon cap on emissions associated with all utility procurement activities was adopted in February of 2006. This strategy includes the following steps:

- Determine a methodology the IOUs will use to report their climate change emissions.
- Continue to work with the CEC to ensure that the IOUs and the municipal utilities use consistent methodologies to report their emissions.
- Begin work to establish emission baselines for IOUs.

#### **5.6 The Governor's Targets Can Be Met**

Based on the emission reduction potential demonstrated in the tables above and illustrated in Figure 2-1 below, it is clear the Governor's targets are achievable. However, continued top-down leadership as has been demonstrated by this Governor as well as a coordinated agency-level effort as has been achieved via the Climate Action Team will be essential to success.

**Figure 5-1. California's Target Can Be Met**



## 5.7 Emission Baseline Development

For the purposes of this report, it is necessary to use historical climate change emissions for the years 1990 and 2000 and projected climate change emissions for 2010 and 2020.

Table 5-5 illustrates the baseline data that was used:

**Table 5-5 Baseline Inventory Estimates\***

Climate Change Emission Baseline (Million Metric Tons CO <sub>2</sub> Equivalent)				
Year	1990	2000	2010	2020
Baseline Emissions	426	473	532	600

\* Not including international marine bunker fuels

The baseline climate change emissions used to compute reductions needed to meet Governor's targets were developed with the assistance of Tellus Institute working with the ARB and CEC. The CEC publishes climate change emission inventory updates on a regular basis and updates its Integrated Energy Policy Report in odd years. In 2007, the Energy Commission will update both reports and integrate these efforts to produce projected 2010 and 2020 climate change emissions.

## **5.8 Economic Assessment**

The overall economic impact of implementing the strategies in Section 5.2 were estimated using a computable general equilibrium (CGE) model of the California economy. A CGE model simulates the functioning of a market economy in which different sectors interact with one another (one sector supplies inputs to another, or purchases the outputs of another) and where prices and production adjust in response to changes caused by government policies applied to specific sectors. The CGE simulates these relationships among California producers, California consumers, government, and the rest of the world. Because of the interconnection between sectors, an intervention in one sector has impacts on all others, which are captured by the CGE model analysis.

The results of a preliminary assessment of the macroeconomic impacts associated with the climate change emission reduction strategies show that the overall impacts of the climate change emission reduction strategies on the California economy are expected to be positive. Specifically, when the strategies already underway as well as new strategies being proposed are considered in total, the resulting impacts on the economy are expected to translate into job and income gains for Californians. For example, in 2020 the implementation of the strategies is expected to increase jobs and income by an additional 83,000 and \$4 billion, respectively, above and beyond the substantial growth that will occur between today and 2020.

The favorable impacts on the economy are possible because of the reduced costs associated with many of the strategies. The additional job growth is expected to come from the net savings to consumers associated with the implementation of the strategies. The savings will in turn promote further business expansion and job creation.

A subsequent refined analysis is planned over the next year. The refined analysis will incorporate updated cost and savings estimates for the strategies. It will also assess the cost-effectiveness of the various individual strategies. Thus, the refined economic analysis will provide additional information to decision-makers as they proceed with implementation of the strategies.

## **6 MARKET-BASED OPTIONS FOR CALIFORNIA**

Market-based programs can be integral to California's strategy for reducing climate change emissions. Options considered by the Climate Action Team would set an emissions cap that can be phased down over time but allow regulated sources flexibility to comply with the cap. Such flexibility would be designed to provide the greatest certainty of benefits at the least cost possible.

Because climate change emissions originate from diverse sources and are long-lived gases in the atmosphere, setting an overall emission cap and allowing flexibility through trading, allocation schemes such as auctioning credits, and/or offsets is recognized as a particularly effective strategy for reducing emissions from many (but not all) climate change emission sources. This approach is best applied to sources with emissions that can be measured or calculated reliably.

Emission sources that are diffuse, difficult to quantify, or small, are not good candidates for inclusion in market-based programs.

The European Union (EU) adopted a market-based approach to reduce climate change emissions from four energy-intensive sectors: (1) energy (electric power, oil refineries, and coke ovens); (2) metal ore, iron and steel production; (3) minerals (cement, lime, glass, and ceramics); and (4) pulp and paper. Initiated in 2005, the EU program is the largest market-based program in the world, involving 25 countries and more than 12,000 installations.

In the U.S., the Acid Rain Trading Program and the Northeast NO<sub>x</sub> Program/NO<sub>x</sub> SIP Call Program have successfully implemented a market-based programs to limit air emissions.<sup>26</sup> The ability to trade emission allowances has been credited with lowering significantly the cost of reducing emissions under these programs.<sup>27</sup> Additionally, compliance has been nearly 100 percent, so that emissions have been reduced as scheduled.<sup>28</sup>

The primary weakness associated with implementing a market-based program in California is that it will be vulnerable to emission "leakage." If the state implements the program without other states, there will be an incentive for activities that emit climate change emissions to shift to neighboring states to avoid the emission cap. If this occurs, emissions may decline in the state, only to increase in other states.

A coordinated national approach to capping climate change emissions within an international framework would be the best approach for addressing this leakage problem. In the absence of national action, leakage may be partially mitigated through the design of the program and ongoing efforts to coordinate with other states, such as the Northeast States or other Western states that are taking action to reduce climate change emissions.

As part of the implementation of a market-based program, data should be collected over time to assess the extent to which leakage occurs, and its impacts on businesses and on the effectiveness of the emissions cap.

### **6.1 Market-Based Program Design Options**

Realizing the emissions certainty and the cost advantages of a market-based program leads to two overarching program design principles:

#### **Broad Coverage is Preferred**

- Broad coverage enables the program to have a direct impact on a large portion of total climate change emissions.
- By covering a broad range of emission sources, the program can capture the least-cost emission reduction opportunities.
- Broad coverage enlarges the set of emissions sources with an incentive to innovate to find ways to reduce emissions.

#### **Flexibility is Preferred**



- Compliance flexibility lowers the cost of reducing climate change emissions.
- Sources can meet their obligation under the cap using diverse methods.
- Sources can bank early emission reductions to reduce compliance costs in subsequent time periods.

The desire for broad coverage and flexibility must be tempered by administrative realities and source-specific considerations. For example, sources with emissions that are difficult to measure or calculate reliably may not be suitable for including under the cap. Similarly, sources that derive from numerous small emission points may be administratively burdensome to include.

There is no one best answer for how to design a market-based program to reduce climate change emissions. Rather, trade-offs are required to create a program that promotes real low-cost emission reductions in a framework that is equitable and administratively feasible.

The market-based program design options are described in terms of:

- *Scope:* The scope of the program defines the sectors, sources, or activities that are included under the cap.
- *Allowance distribution:* Emission allowances can be auctioned or given to regulated sources.
- *Emission offsets:* Offsets are verified emission reductions achieved by facilities. Offsets can replace or augment emissions trading.
- *Other Program Design Elements:* The climate change emissions included; whether to place restrictions on trading, offsets or auctioning of emission allowances; the manner in which allowances can be banked for future use or borrowed against future limits; and the manner in which compliance and enforcement will be performed must be defined.

### Program Scope

The program scope defines the entities included in the market-based program. The market-based options subgroup examined three representative alternatives for defining the program scope: a sector-based emissions cap; an emissions cap on major stationary source combustion; and a fuels-based carbon cap.

A sector-based emissions cap could cover up to 30 percent of the state's climate change emissions by focusing on five key industries: electric power; oil refining; oil and gas extraction; landfills; and cement production (see Table 6-1).

Reaching this level of coverage requires that the electric power sector be defined to capture all the emissions from electricity consumed in the state.

Approximately 10 percent of state climate change emissions come from in-state generation of electricity, and another 10 percent of emissions comes from out-of-state generation of electricity that is consumed in the state. To include the out-of-state emissions in a market-based program, the electric sector can be defined as Load Serving Entities (LSE) rather than electric generation facilities.

LSEs are responsible for procuring and delivering electric power to customers. In California there are three investor owned utilities (IOU) that are LSEs: Pacific Gas and Electric; Southern California Edison; and San Diego Gas and Electric. Municipal utilities, irrigation districts, the Department of Water Resources, and private electric service providers are also LSEs.

Under an LSE-based definition, each LSE would be required to hold emission allowances that cover the emissions associated with the power they deliver to their customers. To comply with its emission cap, each LSE would track or calculate the emissions associated with all the electricity it delivered, regardless of whether it was produced in California or out of state.

This LSE approach differs fundamentally from the option of focusing on in-state generators. Under the LSE approach, LSEs hold the emission allowances—not the generators. Each LSE would have the responsibility to obtain power from the set of generators that enables it to comply with its emission cap. LSEs could trade emission allowances: those with extra allowances could sell to those who need additional allowances, given their procurement decisions.

**Table 6-1. Market-Based Scope Defined by Sectors**

Sector	# Entities	Portion of State Climate Change Emissions
Electric Power Sector:		
Generation Based: In-state generators (≥25 MW)	≈313 facilities	≈10%
Load Serving Entity Based: All Load Serving Entities	≈47 LSEs	≈20% <sup>a</sup>
Other Sectors:		
Oil Refining	21 refineries	≈3%
Oil and Gas Extraction	429 facilities	≈3%
Landfills	≈300 landfills	≈2%
Cement Production	11 cement plants	≈1.5%
Others	(various)	<1%
Mobile Sources:		
Motor Gasoline (light duty vehicles, on and off road)	(Not Applicable)	≈28% ≈7%
Diesel—on road		≈6%
Domestic Aviation		<2%
Other		

a. Includes emissions from electricity imports.

Source: Climate change emissions estimates from Bemis, Gerry and Jennifer Allen, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update*, California Energy Commission Staff Paper, Sacramento, California, Report CEC-600-2005-025, June 2005.

This LSE-based approach has several advantages.

The LSE-based approach captures a larger portion of climate change emissions than a generator-based definition of the electric power sector.

The LSE-based approach mitigates the emission leakage problem that arises under an in-state generator-based approach. Under the LSE-based option, in-state and out-of-state generation are treated equally, and the cap applies to total emissions associated with all electricity consumed in the state. Therefore, there is no opportunity to avoid the cap and there is no leakage.

The LSE-based approach motivates emission reduction opportunities that are not motivated by a generator-based system. To comply with its emission cap, an LSE could promote energy efficiency among its customers as a means of reducing the load itself. LSEs can also procure renewable-based power or shift to fossil-generated power sources with lower emissions. An LSE by its nature has a broader set of opportunities for achieving its emissions cap, as compared with an individual power plant owner/operator.

To implement the LSE-based option, the power sector must track emissions associated with all (or nearly all) power generation through the market to its eventual delivery. Such a tracking system does not currently exist, and developing it presents significant challenges. There are several workable approaches for solving this problem, and the effort is worthwhile to enable an LSE-based approach to be used.

The other industrial sectors with significant climate change emissions are oil refining, oil and gas extraction, landfills, and cement production. These industries have a manageable number of facilities that could be included in a market-based program (see Table 6-1).

The mobile source sector, the largest individual source of climate change emissions in California (42 percent), is not easily accommodated in a market-based program defined in terms of sectors. Diverse factors affect climate change emissions from mobile sources, including the demand for mobility; the cost, availability, and convenience of travel options, including private vehicles and mass transportation; and the emissions per passenger mile of the transportation mode used, which is driven by the technology employed and the fuel used.

A coordinated set of policies is needed to address the factors that influence mobile source climate change emissions: a sector-based cap is necessarily a partial solution. The main practical sector-based option would be to make vehicle manufacturers the point of regulation.

Based on the emission intensity of each vehicle (emissions per mile) and the expected annual miles driven by each vehicle type, the emissions “embedded” in new vehicle sales could be calculated. The manufacturers could be provided with an emission cap for their total new vehicle sales each year. Manufacturers would comply with their caps by reducing the emission intensity of their vehicles or by shifting the mix of vehicles sold toward those with lower emission intensity.

This vehicle manufacturer cap is similar to recently adopted vehicle climate change emission standards that limit average emissions per mile. The standards do not cap total emissions—emissions can increase or decrease as new vehicle sales increase or decrease. By putting a cap on total emissions, the manufacturer-based emission cap would constrain emissions even if new vehicle sales increase.

While the two regulatory policies do not necessarily conflict, it would be critical to coordinate the two policies if they were to be enacted simultaneously. However, such a cap is probably not needed in the short term, while the emission standards come into force for the first time. Emissions associated with the mobile sector could be monitored over time to assess whether a cap is needed.

An alternative to a sector-based program is an emissions cap on major stationary source combustion in the state. This approach would encompass all major stationary sources of carbon dioxide (CO<sub>2</sub>) emissions, without reference to specific sectors as being either in or out of the cap. This scope would not capture mobile source emissions.

Based on preliminary analyses, CO<sub>2</sub> emissions from these sources appear to be concentrated in about 750 facilities statewide. These facilities account for more than 90 percent of CO<sub>2</sub> emissions from stationary fossil fuel combustion, or nearly 20 percent of total state climate change emissions. As discussed above, it may be preferred to define the electric power sector as LSEs to capture emissions associated with imported power and to address the potential for leakage.

The resulting program would be a hybrid approach: the electric sector would be defined to include all LSEs, and all remaining major stationary combustion sources (not including in-state generation) would be included under the stationary source definition.

A third approach to defining the scope of the program is to set a fuels-based carbon cap. This comprehensive fuels approach would reduce climate change emissions by placing a cap on the total carbon content of oil, gas, and coal consumed in the state. The primary advantage of this approach is that it encompasses all sectors that use fossil fuels. Consequently, all options for reducing fossil fuel combustion across all sectors can contribute to achieving the emissions cap.

To achieve climate change emission reductions via this cap, “carbon allowances” would be required to be held by entities at specific points in the distribution or use of fossil fuels in the state. The points at which allowances are required should be

selected to minimize administrative burden and maximize coverage and effectiveness. For fuel markets, these considerations favor an "upstream" approach to regulating the total carbon content of fossil fuel combustion: fuel producers and importers would be required to hold carbon allowances for the fuels they produce in the state or import into the state.<sup>29</sup>

For liquid fuels, carbon allowances could be required where liquid fuels enter into commerce at refineries, marine terminals, and storage facilities. An alternative is to track the carbon content of the crude oil and natural gas liquid inputs to refineries. This refinery input tracking may be simpler than tracking the carbon content of multiple products. Additionally, it has the advantage of incorporating in the cap the carbon emissions from refinery operations. The carbon content of imported refined products would need to be tracked under either option.

The upstream point for tracking natural gas flows would be at major pipeline transfer points and the natural gas utilities. Coal does not appear to have a convenient upstream point in the market for tracking carbon consumption. Because relatively small amounts of coal are used in the state, it may be easiest to track coal combustion downstream; for example, in major boilers.

The comprehensive fuel carbon cap covers about 75 percent of the state climate change emission inventory, including mobile sources. Limits on fossil fuel supply provide incentives for both: (1) improving the efficiency with which fossil fuels are used; and (2) developing non-fossil energy sources. Comprehensive mobile sector improvements are motivated, including shifting modes of transportation, improving vehicle efficiency, and adopting non-fossil based fuels.

This comprehensive fuel approach has several drawbacks. Non-fuel related emissions are, by definition, excluded from the scope of the program. To cover these emissions, a separate program component would be needed for the specific non-fuel related sources and processes. Alternatively, emission reductions from these sources could be motivated by making them eligible to produce and sell emission offsets.

Perhaps most significantly, the comprehensive cap on fossil fuel carbon essentially creates an absolute limit on the availability of fossil fuels in the state. The supply constraint would lead to increases in the prices for fuels, which would be the primary motivation for improving fuel use efficiency and for developing alternative fuels. The size of the price increase will depend on the level of the carbon cap and the cost and availability of alternative fuels. During a transition period, prior to the widespread availability of alternative fuels, price increases could be substantial if the fossil fuel carbon cap is set too low.

The impacts of increased fuel prices would need to be mitigated in order to make this approach viable. If the impacts of increased fuel prices could be managed, California businesses could realize a competitive advantage through access to a more diverse fuel supply that is both less susceptible to price shocks and supply disruptions and more sustainable economically and environmentally. The key to realizing this outcome is to adopt a gradual phase-down of fossil-carbon based

fuels that allows improved efficiency and alternative fuels to constrain the rate of price increases.

One way to prevent unacceptably high fuel price increases is to put a maximum value on the carbon allowances, and to make additional carbon allowances available at that maximum value. This "safety valve" for the market sets an upper bound on the impact of the carbon cap on fuel prices. However, it also effectively removes the cap when the maximum value is reached. Nevertheless, a safety valve of this type may be needed to help ensure that unacceptable price increases are avoided during transition periods.

The implementation of this comprehensive fuel approach would need to address the vulnerability of the electricity sector to leakage: the cap on fossil-carbon based fuels would not cover electricity imports. This electric-sector leakage could be addressed by adopting the LSE-based approach discussed above.

The resulting program would be a hybrid: an emissions cap would be placed on the electric sector, defined to include all LSEs, and a cap on fossil-carbon based fuels would also be in place (any fuels used to produce electricity delivered by the LSEs would not count against the fuel cap). The two caps, one on LSE emissions and one on carbon in fuels, could be traded to allow emissions to flow to their most highly valued uses.

If California is the only state in the western U.S. to implement this comprehensive fuel approach, a "black market" for fuels may develop, particularly for liquid transportation fuels. Although marine terminals, storage facilities, and refineries could be tracked, gasoline is easily transported long distances in tanker trucks. Fuel from neighboring states could be trucked into California without the proper carbon allowances. Policing this activity could be difficult, and if significant fuel volumes move through a black market, the effectiveness of the cap will be eroded.

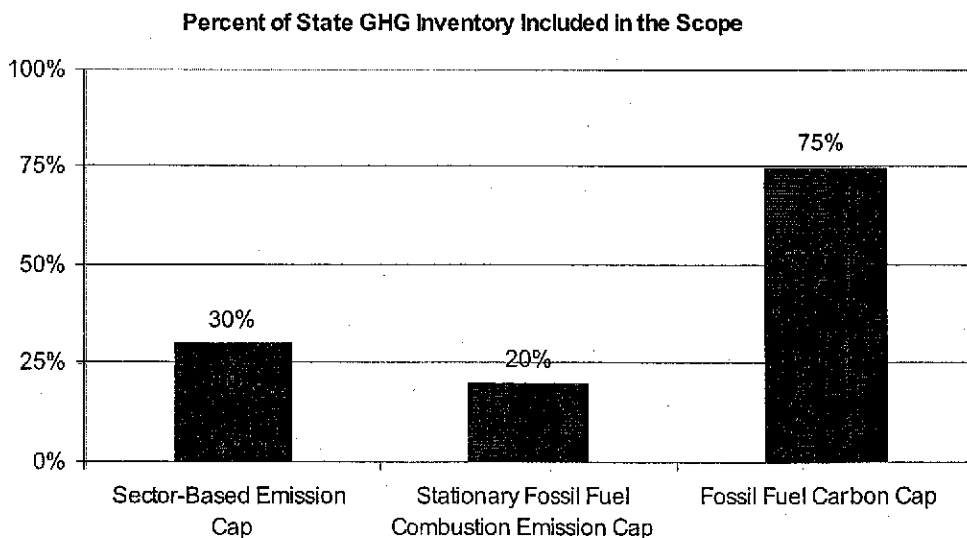
We can make several observations regarding the three representative approaches for defining the scope of a market-based program for reducing climate change emissions in California:

- The fuel-based carbon cap is the most comprehensive, encompassing the greatest diversity of emission reduction opportunities and motivating action across the broadest set of emission sources (see Figure 6-1).
- The sector-based approach focuses attention on the specific industries that contribute most to state climate change emissions. Stationary sources in the largest sectors cover about 30 percent of the state emission inventory. To significantly increase coverage beyond 30 percent, mobile sources, with about 42 percent of the emission inventory, would need to be included in the cap. However, mobile sources are not conducive to a sector-based approach.
- The stationary source definition of program scope encompasses all major stationary sources of CO<sub>2</sub> emissions from fossil fuel combustion, without reference to specific sectors as being either in or out of the cap.

Approximately 750 facilities could be included in the program to cover the overwhelming majority of emissions from these sources. This scope does not capture mobile source emissions, and consequently is limited to about 15 to 20 percent of the state inventory. An additional 10 percent of emissions can be covered if emissions associated with imported electricity are captured using a hybrid approach that includes a comprehensive definition of the electricity sector.

- All three methods for defining the scope of a market-based program are vulnerable to emissions leakage. A coordinated national approach to capping climate change emissions within an international framework would be the best approach for addressing this leakage problem. In the absence of national action, or even regional action, the leakage issues can be partially mitigated.
- All three methods appear to be administratively workable. Also, it may be preferred to cap emissions from the electric power sector under all three scope definitions using the LSE-based approach.
- All three approaches to defining the program scope could be leveraged into a regional or national climate change emission reduction program. An assessment of the relative likelihood of any of the three approaches being adopted nationally is beyond the scope of this assessment. However, it can be observed that the sector and stationary source approaches are more similar to past national and regional regulatory regional programs than the comprehensive fuel approach.

**Figure 6-1: Climate Change Emissions Covered Under Three Definitions for Program Scope**



Sector-Based Emission Cap for five sectors, not including mobile sources. See text.

Stationary Fossil Fuel Combustion Emission Cap covering approximately the 750 largest sources. See Text.

### Allowance Distribution

A market-based program requires that each facility under the cap hold sufficient emission allowances to cover its emissions. Emission allowances can be auctioned (i.e., sold) or given away. If given away, the allocation algorithm can have a significant impact on the amount of allowances received by each facility. A hybrid approach can also be used, in which some allowances are given away and some are auctioned.

Much has been written regarding the pros and cons of giving allowances away versus auctioning them.<sup>30</sup> When allowances are given to entities covered by the cap, those entities receive something of value: the emission allowances. When the allowances are auctioned, the government collects a portion of the value of the allowances in the amounts paid in the auction. Both approaches can result in essentially the same cost of controlling emissions, and both approaches are expected to have the same impact on consumer prices in most cases.

If an auction is not used, the process for distributing the allowances typically considers facility-specific factors to promote equity among the regulated facilities. Although various factors can be considered, two primary factors are commonly discussed as bases for distributing emission allowances:

*Baseline Emissions.* Emission allowances can be distributed on the basis of recent emissions as defined in a baseline for each facility. This method has the potential to distribute fewer allowances to those entities that reduced their emissions prior to the baseline period, thereby penalizing them for taking early action.

*Baseline Output.* Emission allowances can be distributed using an average emission intensity for each industry and baselines of recent facility output. The average emission intensity for an industry would be equal to the total emission cap for the industry divided by the total baseline industry output. Each facility's allocation would be the product of the relevant industry average emission intensity and the individual facility's baseline output. By using this approach, past actions by a facility that reduced its emission intensity are rewarded.

Insofar as emission allowances are distributed on the basis of past emissions or output, new sources would not receive a share of the distribution of allowances. To address this issue, a portion of the emission cap can be set aside for new sources, so that they can be allocated a share of the cap. Alternatively, a share of the cap could be set aside to be auctioned off, so that all sources, new and existing, could bid for additional emission allowances over and above the allowances they receive through a distribution.

Facilities that have relatively high emissions will favor distributing allowances on the basis of recent emissions, because under this approach they will receive more allowances. Facilities that have relatively low emission intensities will favor



distributing allowances on the basis of an industry-average emission intensity. Facilities with growing levels of emissions or output would want to ensure that the method allows flexibility in the selection of the baseline year, so that recent periods of high emissions or output could be considered.

The specification of a distribution algorithm requires balancing divergent interests. One way to satisfy competing interests in this situation is to be overly-generous in the initial allocation of emission allowances. In doing so, all parties can receive a share of the emission cap that meets their current needs. In this case, care must be taken to reduce the cap over time, and to ensure that the extra allowances are not banked indefinitely in a manner that reduces the effectiveness of the emission cap over the long term.

### Emission Offsets

Emission offsets are verified emission reductions achieved by entities that are outside the cap. The benefits of emission offsets are:

- Offsets help lower the cost of reducing emissions: facilities covered by the cap can purchase low-cost emission reductions from outside the cap as a means of complying with their emission limit.
- Offsets provide sources outside the cap with a financial incentive to develop low-cost emission reduction projects, thereby broadening the set of emission reduction opportunities that are motivated to be undertaken by the market-based program.

Although the forestry sector is not a strong candidate to include under an emission cap due to the diffuse nature of its emissions (and sinks), stakeholders and others have emphasized that forest management projects in California could be an important source of emission offsets. The funds received from selling the offsets could make forest management projects financially attractive. Of note is that the projects would generate multiple benefits beyond the sequestration of carbon.

To ensure that offsets do not compromise the emission reduction goal of the program, they must be real or additional, quantifiable, surplus to any regulatory requirement, enforceable, and permanent. Also, they cannot be counted toward any other climate change emission reduction targets.

Protocols for verifying offsets will be required for each of a variety of "prototype" emission reduction projects that are deemed eligible for producing emissions offsets under the state's market-based program. Each protocol would address the requirements specific to its prototype project. The California Climate Action Registry's Forest Project Protocol is an example of the type of protocol that would be needed.

A final issue to address regarding offsets is whether the market-based program should rely solely on the market to generate emission offsets, or whether an entity dedicated to producing offsets should be created. A dedicated organization could develop expertise and procedures that enable it to identify and execute emission reduction projects efficiently. The organization could specialize

in projects that are particularly relevant to California and qualify under the California program. Following initial funding for start-up, the organization could have the goal of becoming financially self-sustaining.

The primary benefit of creating an organization dedicated to creating offsets is that it can expand the availability of low-cost emission reductions. Initial experience under the primary international offset program (the Clean Development Mechanism) indicates that offset projects may be slow to materialize. The Climate Trust is an example of an organization that was formed to create emission offsets.

#### Other Program Design Elements

To define a market-based program fully, the following additional program design elements must be addressed:

*Climate Change Emissions Included:* To capture as many emission reduction opportunities as possible under the cap, all climate change emissions should be included. However, consideration should be given to limiting coverage, particularly during initial implementation, to those gases and sources that can be measured or calculated reliably.

*Trading/Offsets/Auction:* Flexibility is fundamental to a market-based program. However, unlimited trading, offsets, or availability of credits via auction may raise concerns about the potential concentration of emissions in impacted communities. Restrictions could be used to address this issue.

*Emission Banking and Borrowing:* Banking and borrowing are consistent with the use of a market-based program to achieve emission reductions at the lowest possible cost. Banking, in particular, can motivate early action and reduce overall compliance costs.

### **6.2 Compliance Tracking and Enforcement**

Under all formulations of a market-based program, emissions and compliance must be tracked for all the entities covered by the cap, and appropriate action must be taken if entities fail to comply.

#### Emissions Tracking

Reporting procedures will be required to ensure that facilities produce consistent and reliable emission reports. The California Climate Action Registry has developed and adopted two levels of emission reporting protocols:

A General Reporting Protocol is used by sources that do not have unusual reporting or calculation needs. The GRP can be used by a wide variety of entities.

Industry-specific protocols are used to address data, measurement, calculation, or other issues that are specific to certain industries.

To date the registry has developed protocols specific to the forest sector and the power/utility sector, and work is well along in developing a protocol for the cement production industry. Additional industry-specific protocols will be

required if a multi-sector program is adopted, for oil refining, oil and gas extraction, and landfills. The registry's methods produce emission reports that are sufficiently precise to be used by the emissions sources likely to be included in a market-based program.

The registry currently requires that emission reports be verified by qualified third-party certifiers, with the cost of certification borne by the reporting entities. With mandatory reporting, we need to assess whether the current process should be continued, or whether a new approach should be used, such as the organization receiving the emission reports being responsible for verifying the emission reports. Both approaches can ensure consistency and maintain quality control of the emission reports. However, centralizing responsibility for verification of the emission reports in the entity that receives the reports may enable efficiencies to be realized.

#### Compliance Tracking

Compliance is tracked by comparing the emission reports to the official record of emission allowances and emission offsets. A system for tracking the ownership of emission allowances and emission offsets is needed, including "expiring" the allowances and offsets when they are used to cover emissions in a compliance period. The compliance tracking needs to be done in a timely manner, so that compliance can be evaluated shortly after the end of the compliance period.

#### Enforcement

Enforcement provides consequences in the event that an entity cannot surrender emission allowances in sufficient quantity to cover its actual emissions. The design and implementation of the enforcement requirements will determine the strength of the incentives that entities have to comply. Additionally, the enforcement scheme can have a significant impact on whether the desired emission reductions are achieved.

Options for the consequences of non-compliance include:

- Require the entity to acquire emission allowances or offsets to make up its shortfall. Including this requirement will ensure that emissions are reduced to the emission cap.
- Require the entity to pay a fee per ton for which they did not have sufficient allowances. Including this requirement provides a financial incentive to comply.
- Require that the entity implement controls to reduce emissions. This requirement would reduce compliance flexibility.

If the sole enforcement method is a fee per ton of excess emissions, this would provide a "safety valve" on compliance costs. The fee would become the upper bound for the price of emission allowances. The risk of this approach is that if the fee were set too low, the emission cap may become ineffective, as entities choose to pay the fee rather than reduce emissions.

To ensure that the emission cap remains effective, the non-complying entity may be required to acquire emission allowances or offsets to make up its shortfall. The risk of maintaining the cap in this way is that the cost of the additional allowances may become very high, particularly during a period of non-compliance by many entities.

Significant volatility in the cost of complying can adversely affect the program, and could lead to the cap being relaxed in response to unsustainably high compliance costs. This situation is not hypothetical: the RECLAIM Program in 2000 displayed these conditions.<sup>31</sup>

Specifying the enforcement penalties requires balancing these benefits and risks. Analyses can forecast likely compliance costs and allowance prices. Because there is no track record for a climate change emission market-based program in the United States, the forecasts will necessarily be uncertain.

### **6.3 Conclusions and Next Steps**

- A market-based program can be integral to California's strategy for reducing climate change emissions. The primary benefits of a market-based program are its ability to establish a firm climate change emission limit and to reduce emissions at the least cost.
- A market-based program can be implemented as part of a comprehensive emission reduction effort that includes complementary programs and initiatives.
- A national program to cap climate change emissions within an international framework would be the most effective approach. In the absence of national action, or even regional action, California can lead by example by developing a workable market-based program as a model for national action. The added benefit and impact on the state of taking unilateral action must be assessed.
- There is no single, best solution for designing an effective market-based program. Trade-offs are required to create a program that promotes real low-cost emission reductions, in a framework that is equitable and administratively feasible. Divergent interests must be balanced in designing the program scope, emission allowance distribution, and other program elements.
- A carbon cap on all fossil fuels provides the broadest single opportunity to reduce emissions, covering about 75 percent of state climate change emissions, including both stationary and mobile fossil fuel combustion. As an alternative, an emission cap focused on five industrial sectors would cover about 30 percent of state emissions. Mobile source emissions, accounting for about 42 percent of state emissions, are not easily incorporated into a sector-based emission cap. However, alternative strategies can focus on mobile sources.
- New legislative authority is required to implement a market-based program to reduce climate change emissions.

The CAT finds that a market-based program should be considered an integral part of California's approach to reducing climate change emissions. The next steps in considering a market-based program include the following:

- Facility-level emission reporting is needed, not only to support the detailed design of a market-based program, but to better understand current emissions and options for reducing emissions. Consequently, facility-level emission reporting requirements should be adopted, along with the industry-specific reporting protocols needed to support the reporting.
- Several complete market-based programs should be defined in detail, representing the range of program design options. The program alternatives should be evaluated, including their impacts on climate change emissions; cost of reducing emissions; state competitiveness, business, and jobs; and impacted communities with environmental justice concerns.
- Administrative options for implementing a market-based program should be developed. The budget requirements to support the administration of the program should be assessed.
- The legislative authority required to implement a market-based program should be identified.

## **7 IMPLEMENTATION OPTIONS**

This chapter discusses possible implementation options that can be used to reduce climate change emissions in the state as shown in Table 7-1. Some of these options, such as the programmatic and voluntary options, are already being implemented and will continue forward. Others, such as the public good charge for transportation fuels, cut across options and can be used to ensure success. A market-based approach is regarded as an attractive means of reducing emissions and was discussed in detail in Section 6. This section discusses fee-based options; however, such an approach would require more extensive examination of the environmental and economic consequences.

In general, the CAT supports the use of multiple implementation options designed to support one another and provide the greatest possible emission reductions for the least cost.

**Table 7-1. Implementation Options for Meeting Statewide Climate Change Emission Reduction Targets**

Implementation Options	
Programmatic	<p>Programs implemented by agencies.</p> <p>Examples of existing programs include ARB's motor vehicle regulations, energy efficiency standards, Renewable Portfolio Standard.</p>
Market-Based Program	<p>Climate change emission cap established for industrial sectors.</p> <p>Flexibility through trading, offsets and or auctioning of emission credits.</p>
Public Goods Charge for Transportation	<p>Transportation is by far the largest source of emissions in the state. A public goods charge on transportation could be used to reduce emissions from transportation sources. Specific emphasis would be placed on transportation fuel diversity that would both benefit the environment and stabilize the economy.</p>
Fee-based Option	<p>Fees could be assessed based on entity emissions, with an emphasis on largest emission sources; or they could be broadly based on energy sources at point of origin or as close to point of origin as possible.</p> <p>Proceeds could be used to provide incentives or otherwise fund emission reduction projects.</p>
Offset Program	<p>Allowing for the purchase of offsets can lower cost. However, it is essential to ensure that offsets are real, quantifiable, surplus, enforceable, and permanent.</p>
Voluntary Emission Reduction Program	<p>Participants work with the state to establish agreed-upon emission reduction activities in support of the Governor's statewide targets.</p>
Mandatory Reporting	<p>Necessity for all programs, tracking, and accountability.</p>

A more detailed description of each of the implementation options in Table 7-1 is included in the subsections below. Mandatory reporting is included in this table because it is key to all of the options considered. Mandatory reporting is also discussed below.

### **7.1 Programmatic**

The programmatic approach has been the mainstay of the agencies represented on the CAT and is reflected in Section 5. State agencies have long been implementing programs that have provided tremendous environmental and economic benefits to the state, including those based on regulations, education, and incentives. Such programs will continue and would be used in combination with other implementation options discussed in this section.

### **7.2 Market-Based Program**

Market-based program options are discussed in detail in Section 6. Further analysis is needed to determine how best to design a market-based program for the state. However, a well-designed market-based program has the potential to significantly reduce emissions while also providing industry with flexibility and reduced compliance costs.

### **7.3 Public Goods Charge for Transportation Fuels**

Transportation is the largest source of emissions in the state. Accounting for more than 40 percent of the statewide emissions, it dwarfs the next largest sources of emissions—the industrial and electricity sectors—at about 20 percent each. Although both the industrial and electricity sectors are somewhat diversified as to energy source, the same cannot be said of the transportation sector. Petroleum accounts for 99 percent of the fuel used in the transportation sector. The state's dependence on petroleum has been shown to be harmful to public health and the environment.

In further contrast, a relatively small public goods charge is applied to all other energy sources in the state. The public goods charge on electricity has contributed to the fact that Californians use 30 percent less electricity per capita than the average U.S. citizen. Californians benefit from building and appliance energy efficiency programs funded with the public goods charges on electricity and natural gas that provide a net saving of more than \$1,000 per household annually.

Demand for petroleum in California and around the world has skyrocketed. Petroleum is a limited resource and much of the supply is located in politically volatile parts of the world. Even so, the demand for petroleum products continues to increase, despite the fact that increases in price have reached new peaks that are being sustained for longer periods of time.

The economic consequences of the state's dependence on petroleum can be measured in personal goods and services, and macro-economic terms. Consumers have less disposable income and those with little or no disposable income suffer disproportionately.

The costs of almost all goods and services increase when the cost of petroleum increases and many businesses cannot pass these costs on to consumers. This results in lower profits. In general, small businesses are at greatest risk. Finally, the price of crude oil is the single largest cost in the

production of transportation fuels, accounting for between 42 to 56 percent of the retail price of gasoline. California's demand for crude oil, like the U.S., is increasingly being met by international suppliers. Over the past two years, the price of crude oil has nearly doubled, which has resulted in an increasing percentage of California's consumer wealth being exported outside the state's economy.

The environmental consequences of petroleum are significant. As indicated above, climate change emissions from the transportation sector are large and growing. Using less petroleum also reduces smog-forming and toxic pollutants that occur at each point in the distribution system. Many alternative-fuel vehicles produce fewer emissions than their gasoline and diesel counterparts while also contributing to the need for fuel diversity in the transportation sector.

The Energy Commission in its 2005 Integrated Energy Policy Report<sup>32</sup>, which is the state's energy plan submitted to the Governor, has identified and recommended the concept of a public goods charge to finance programs that reduce petroleum demand and emissions for the transportation sector. A public goods charge on gasoline and diesel, if constructed appropriately, could be a very effective, fair, and efficient means to reduce climate change emissions from the transportation sector and mitigate these damaging consequences to our environment and our economy. Crucial questions about how the funds are administered and expended need to be addressed before a public goods charge for transportation fuels could be proposed.

#### **7.4 Fee-Based Option**

Fee-based options exist and merit further evaluation but have not been fully explored at this point. The primary attractiveness of such programs is that they can be centrally managed and can be targeted towards the largest sources or broadly targeted at energy sources at point of origin or as close to point of origin as possible. Proceeds could be used to provide incentives or otherwise fund emission reduction projects.

At this time the CAT would not recommend this option as it cannot guarantee emission reductions. The extensive consultation with industry and other stakeholders necessary also has not been completed.

#### **7.5 Offset Program**

Allowing for the purchase of offsets can lower cost. However, it is essential to ensure that offsets are real, quantifiable, surplus, enforceable, and permanent. A preliminary investigation into offset programs indicates that there are successful examples of such programs.

In Oregon and Washington, the Climate Trust program generates offsets for purchase by industry that take into consideration climate change emission reductions as well as reductions in other pollutants. The focus is to ensure high-quality, cost-effective offsets that provide a permanent and viable nexus between



those responsible for climate change emissions and the currently available solutions to reduce and eliminate those emissions over time.

A program similar to the Climate Trust program could be considered for California. Such a program could be designed to address the critical need to reduce pollution in low-income and minority communities and other priority issues in our state. Further analysis and review is needed for this implementation option, so the CAT has no specific recommendation regarding offsets at this juncture.

## **7.6 Voluntary Actions**

There are many proactive industries that are taking actions to reduce climate change emissions. The Sustainable Silicon Valley group is made up of a number of large companies including Calpine, Hewlett-Packard Company, and Pacific Gas and Electric, who have pledged to voluntarily reduce their emissions to 20 percent below 1990 levels by 2010. The California Climate Action Registry allows companies to register their climate change emissions and assists these companies in tracking and reducing these emissions. British Petroleum, Eastman Kodak, Pacific Forest Trust and U.S. Borax are among the more than 50 companies that are currently members of the registry.

Such voluntary actions are instrumental in the effort to meet statewide targets. The CAT encourages such efforts as evidence that many in the business community as well as with local governments clearly believe action must be taken to reduce climate change emissions.

One of the overarching recommendations, which has been championed by industry and environmental groups alike, is recognition of early actions in any and all emission reduction programs implemented. Recognition of early action is also important as California joins its western state partners and the North East States in cooperative efforts to reduce emissions. State partnerships are expected to lead to national and international cooperative efforts.

## **7.7 Mandatory Emission Reporting**

One of the overarching recommendations included in this report is the need for some level of mandatory reporting that builds upon the California Climate Action Registry. We simply don't have the basic information needed to track and account for emission reductions. The Energy Commission maintains a planning inventory that provides an overall picture of where emissions are coming from in the state. However, this inventory cannot be used for the purposes of determining baseline emissions from a source or for tracking emission reductions from a source.

The California Climate Action Registry does have emissions data that can be used for tracking emissions from a source and for accounting purposes. However, the Registry is voluntary, and many of the largest emitters in the state have not yet joined. There is no way to determine whether or when emission sources will join under the current provisions of law.

A preliminary estimate of the largest sources for which emissions data is needed in the state indicates that it would be prudent to begin with data collection from the electric power sector, oil refining and oil and gas extraction sector, landfills, and cement production. To the extent that industries have joined the registry voluntarily, the CAT believes this fulfills any reporting requirement for climate change emissions data.

As this state moves towards mandatory reporting of climate change emissions, the question as to where that data should be stored and managed arises. The CAT does not believe that such a program can be managed under a non-government organization such as the current Registry. However, some of the current duties and functions of the Registry could be placed within government for the purposes of mandatory data collection. The registry represents an excellent starting point for the process of mandatory reporting.

The role of Air Quality Management Districts, Local Enforcement Agencies, and other entities within the state that have permit and enforcement authority will need to be determined. These entities already collect much of the data that would be needed under a mandatory reporting program and have existing enforcement and permit authority. This should be considered as a mandatory reporting program is developed.

## **8 ECONOMIC ASSESSMENT**

This section discusses the results from a preliminary assessment of the macroeconomic impacts associated with the climate change emission reduction strategies presented in this report. The results show that the overall impacts of the climate change emission reduction strategies are expected to be positive. Specifically, when the strategies already underway as well as new strategies being proposed are considered in total, the resulting impacts on the economy are expected to translate into job and income gains for Californians.

In summary, the net impact of the strategies on jobs in year 2020, when the strategies are expected to be fully implemented, is expected to be a gain of 83,000 above what the California economy would gain without the climate change emission reduction strategies. The implementation of the strategies is also likely to add an additional income of about \$4 billion to Californians in 2020, again, above what the economy is expected to produce without the strategies.

These favorable impacts on the economy are possible because of the reduced operating costs associated with many of the strategies. The additional job growth is expected to come from a net savings to consumers associated with the implementation of the strategies. The savings will in turn promote further business expansion and job creation.

The results presented in this section are considered preliminary because the cost and potential savings information associated with most of the individual strategies have not yet been fully developed. Therefore, when available, other sources have been drawn on to provide an initial assessment of the costs and

savings. Although this analysis needs refinement, we expect that the fundamental conclusion--that the suite of strategies discussed in this report has a net positive impact on California's economy--will stand.

The subsequent refined analysis will incorporate updated cost and savings estimates for the strategies. It will also assess the cost effectiveness of the various individual strategies. Thus, the refined economic analysis will provide additional information to decision-makers as they proceed with implementation of the strategies.

The remainder of this section discusses the model of the California economy used for the assessment, the analysis of the strategies in Section 5, a discussion, as well as a summary.

### **8.1 Economic Model**

This economic assessment uses a computable general equilibrium (CGE) model of the California economy called E-DRAM, developed by the University of California, Berkeley. It has been used by the Department of Finance for the revenue impacts of tax and other State policies, by the California Energy Commission and ARB to assess impacts of reducing petroleum dependency (AB2076)<sup>5</sup>, and by ARB for the Vehicle Climate Change Standards<sup>6</sup>, the State Implementation Plan<sup>7</sup> analysis, and others. As a part of the application of the model to these analyses, it has been peer reviewed and calibrated to be representative of the California economy.

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<sup>5</sup> CEC 2004. Attachment to Appendix A (Revised): Impacts of Petroleum Reduction Strategies on the California Economy. At [http://energy.ca.gov/fuels/petroleum\\_dependence/documents/2004-02-10\\_ATCHMNT\\_APNDX\\_A.PDF](http://energy.ca.gov/fuels/petroleum_dependence/documents/2004-02-10_ATCHMNT_APNDX_A.PDF)

<sup>6</sup> ARB 2005a. Regulations To Control Greenhouse Gas Emissions From Motor Vehicles: Final Statement Of Reasons. At <http://www.arb.ca.gov/regact/grnhsgas/fsor.pdf>

<sup>7</sup> ARB 2003, 2003 State and Federal Strategy for the California State Implementation Plan. At <http://www.arb.ca.gov/planning/sip/stfed03/stfed03.htm>

A CGE model simulates the functioning of a market economy in which different sectors interact with one another (one sector supplies inputs to another, or purchases the outputs of another) and where prices and production adjust in response to changes caused by government policies applied to specific sectors. The CGE simulates these relationships among California producers, California consumers, government, and the rest of the world. Because of the interconnection between sectors, an intervention in one sector has impacts on others, which are captured by the CGE model analysis.

The inner workings of the CGE model can be graphically illustrated. Figure 8-1 shows a simplified version of the sectors that interact and participate in goods, services, and labor flows that make up the economy. The diagram shows that the households sell factors of production (labor and capital) to the firms which use the factors to produce goods and services to sell to the households. It also shows the flow of payments that accompany the transactions between the firms and the households. The diagram includes the flow of transactions between the firms; this is, how the firms buy and sell intermediate goods amongst themselves to produce the final products sold to the households.

**Figure 8-1 Circular Flow of Goods and Services in the Economy**

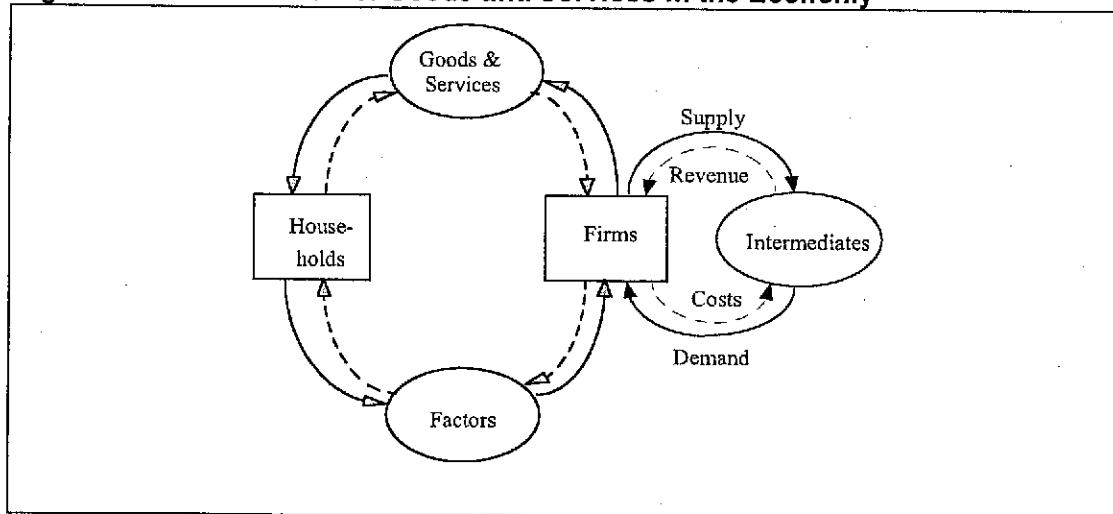
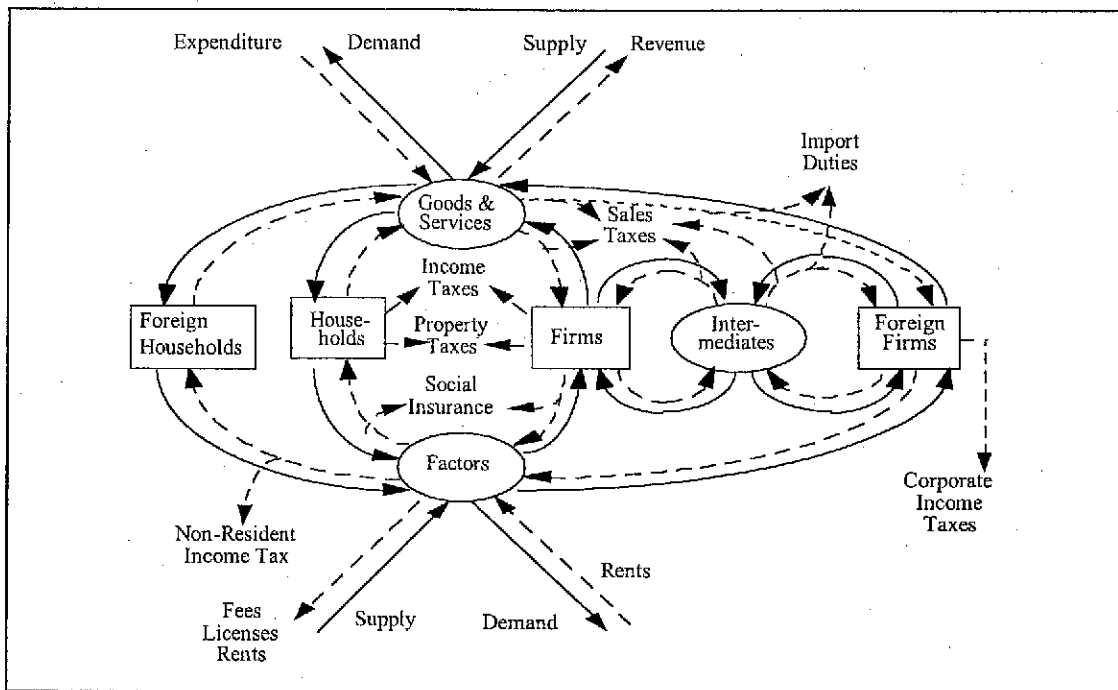


Figure 8-2 shows the complexity of the complete California economy and the many sectors involved in producing goods and services for final consumption by the households inside and outside of California.

**Figure 8-2 Complete Circular Flow of Goods and Services in the Economy**



The E-DRAM model accounts for all of the flows in the California economy using many equations. When a regulation or a policy is adopted that could affect costs of production in one part or sector of the economy, the rest of the economy has to adjust to the perturbation through price or employment changes. The CGE tracks the changes and produces results that show how much each sector has changed. The main economic indicators are number of jobs and income. It is believed that these two key indicators are particularly informative for characterizing the impact of potential policies on California's economy. Jobs are an important indicator for decision-making, and income closely follows the gross state product, which is an indicator of overall economic well-being in the State. This economic assessment presents the changes in these two indicators as the net economic impacts of the strategies.

## **8.2 Analysis of Climate Change Emission Reduction Strategies**

The strategies evaluated in this analysis are taken from Section 5. The objective of the analysis is to draw on available cost and savings data to provide an overall assessment of the impact of the strategies on California's economy.

The E-DRAM model of the California economy was run with the strategy costs and savings as inputs into the model to assess the economic impacts for years 2010 and 2020. Two major economic indicators were selected to

demonstrate economic well-being. Job creation indicates a healthy economy providing opportunities to Californians. Income is an indicator of the output of goods and services and therefore gauges progress in economic activity. The impacts are shown as the difference between the predicted economic indicators with and without implementation of the strategies.

Table 8-1 shows the impacts of the strategies on income and employment in 2010. Many of the strategies have both costs and savings. Generally, the costs are incurred for technology and/or changes in behavior that reduces emissions, and savings are accrued from reduced operating costs. The costs of the strategies for the year 2010 are estimated at \$1.3 billion, and the savings at \$2.9 billion for a net savings of \$1.6 billion. The net savings stimulate additional economic activity and generate about \$2 billion of additional income (about a 0.13% increase in total income) and 19,000 new jobs (about 0.11% of the 2010 total employment). For context, Table 8-1 and Table 8-2 also show the growth expected for the economy between 2004 and 2010 or 2020 irrespective of the strategies discussed in this report.

**Table 8-1. Impacts of Achieving the Climate Change Emission Reduction Targets on California Economy in 2010\***

<b>Economic Indicator</b>	<b>In 2004</b>	<b>Without the Strategies**</b>	<b>With the Strategies</b>	<b>Impacts</b>	<b>Percentage of the Total</b>
<b>Income</b> (Billions of 2005\$)	1,317	1,527	1,529	2	0.13%
<b>Employment</b> (thousands)	16,460	17,969	17,988	19	0.11%

\* We display several digits to make it clear how we calculated the difference associated with the strategies.

\*\* This column indicates the income and employment forecast for 2010 without the implementation of the strategies presented in this report. Note that between 2004 and 2010, the economy is expected to realize substantial growth (e.g., income increases by about \$200 billion while the number of jobs increase by about 1.5 million).

By 2020, additional savings from the strategies stimulates the economy further. The strategy costs are on the order of \$7.9 billion, with a savings of \$16.9 billion for a net savings of \$9.0 billion. Table 8-2 shows the impacts of the strategies in 2020. The results also reflect the fact that the strategies that would be in effect by 2020 have a different mix of costs and savings than those in 2010.

The impact on income is about \$4 billion, about a 0.19% increase, and the impact on jobs is creation of 83,000 new jobs, about a 0.40% increase, in the year 2020 for the California economy.

**Table 8-2. Impacts of Achieving the Climate Change Emission Reduction Targets on California Economy in 2020\***

<b>Economic Indicator</b>	<b>In 2004</b>	<b>Without the Strategies**</b>	<b>With the Strategies</b>	<b>Impacts</b>	<b>Percentage of the Total</b>
<b>Income</b> (Billions of 2005\$)	1,317	2,128	2,132	4	0.19%
<b>Employment</b> (thousands)	16,460	20,704	20,787	83	0.40%

\* We display several digits to make it clear how we calculated the difference associated with the strategies.

\*\* This column indicates the income and employment forecast for 2020 without the implementation of the strategies presented in this report. Note that between 2004 and 2020, the economy is expected to realize substantial growth (e.g., income increases by about \$800 billion while the number of jobs increase by about 4.3 million).

Although these of the economic impacts seem small when considered as a percentage of the total economy, the positive direction of the impacts indicate that the California economy is highly unlikely to suffer negative impacts from achieving the climate change emission reduction targets as directed by the Governor's Executive Order. Rather, implementation of the suite of strategies indicates a positive net impact on the economy. Refinement of the strategy cost and saving estimates, which is planned for the near future, will provide further details regarding the impacts of strategy implementation on the California economy.

With the exception of the Green Building Initiative and the strategies in Section 5 for which reductions are not reported, the economic impacts shown in Table 8-1 and Table 8-2 reflect the combined effect of all of the strategies (those underway and those proposed). The strategies not included in this analysis will be included in the subsequent refined analysis along with updated costs and savings information for the strategies analyzed thus far. However, the inclusion of these additional strategies is not expected to change the fundamental conclusions presented in this analysis because the additional strategies are, in total, expected to result in a net savings.

**Discussion of the Economic Assessment of the Strategies Already Underway in California:** One key observation on the strategies already underway is that almost all of them result in increased energy efficiency, which historically been shown to be highly cost effective. It is thus expected that the net effect of strategies underway, by themselves, will be to benefit the economy by providing additional jobs and income. As previously indicated, a subsequent economic

analysis will draw on refined cost and savings information for these strategies to support a more robust macroeconomic assessment of the individual strategies as well as their combined impact. Discussions of the strategies already underway are presented below. The cost and savings estimates are preliminary and are already being evaluated for refinement.

The Vehicle Climate Change Standards strategy was developed to support a regulation approved by the Air Resources Board in 2004. The staff report including the economic analysis is fully documented and was the subject of several public workshops. For example, the ARB economic analysis of the strategy concluded that by 2020, jobs increase by 53,000. The benefits result from operating cost savings by consumers which in turn are spent on other goods and services, generating additional jobs and income beyond what the economy normally would produce. Further, the Diesel Anti-idling strategy is expected to save several hundred million over its implementation by reducing diesel fuel consumption<sup>8</sup>. Because of the savings, its impact on the economy is expected to be positive.

In general, energy efficiency programs positively impact the economy. Most of the strategies already underway concern efficiency improvements. Although the State agencies developing these strategies may not have completed a refined assessment of the associated costs and savings, analyses of similar strategies by universities and institutes have shown net benefits for these strategies, and thus, positive impacts on the economy. Such strategies include Investor Owned Utility Energy Efficiency Programs, Building and Appliance Energy Efficiency Programs, Achieve 50% Statewide Recycling Goal, and Fuel-Efficient Replacement Tire and Inflation Programs. In total, these programs will almost certainly benefit the economy by producing additional jobs and income for California.

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<sup>8</sup> ARB 2005b. Notice Of Public Hearing To Consider Requirements To Reduce Idling Emissions From New And In-Use Trucks, Beginning In 2008. At <http://www.arb.ca.gov/regact/hdvidle/isor.pdf>



The Green Building Initiative is expected to produce net benefits and therefore positively impact the economy. Based on historical experience, every dollar spent on energy efficiency typically provides about \$2 in benefits. As indicated, the Green Building Initiative will be folded into the subsequent refined analysis.

The California Public Utilities Commission (CPUC) is currently reviewing a statewide solar incentive program proposal. If adopted by the CPUC in January 2006, the proposed California Solar Initiative (CSI) will provide close to \$2.9 billion in incentives between 2007 and 2017. The program is anticipated to bring on line or displace 3,000 MW of power. As costs and savings estimates are further developed they will be included in a refined economic impact analysis of the climate change emission reduction strategies.

In addition to the Solar Initiative, the CPUC commissioned a report entitled "Achieving a 33% Renewable Energy Target" to identify feasibility and next steps to accelerate and expand the current CPUC Renewable Portfolio Standard program. The report determines that after the initial infrastructure costs are borne, the resulting benefits to ratepayers in 2021 and beyond are net positive. Using the CEC's long-term forecast of natural gas prices, the report finds that ratepayers would likely realize a net benefit over a 20 year period.

Discussion of Economic Impacts of the Strategies Needed to Meet California's Targets: All of the strategies presented in Section 5 where estimated climate change emission reductions are available were included in the analysis that generated the results shown in Table 8-1 and Table 8-2. Several sources were drawn on to identify preliminary cost information including analyses done by UC Berkeley, and the Tellus Institute<sup>33</sup>. Many of the strategies have implementation costs. However, several strategies also have savings that may cover or exceed the costs.

### **8.3 Discussion**

The economic impacts presented in this analysis are from the combined strategies listed in the tables in Section 5 for which preliminary cost information is available. Some of the strategies in Section 5 have net costs while others have net savings typically due to decreased operating costs. Those with net costs would be expected to adversely affect job growth if considered in isolation. However, those with savings will increase job growth and income. For example, the Air Resources Board's Heavy Duty Vehicle Emission Reduction Strategy would be expected to lower the operating costs of transporting goods.

Lower costs of producing a certain amount of goods or services lead to more economic activity and create more jobs and income as people spend savings from the lower costs.

The refined analysis would be expected to provide additional information to facilitate a focused consideration of each strategy with respect to several factors including cost effectiveness. Further, the refined analyses can include additional strategies that may be identified by stakeholders. Specifically,

stakeholders may identify additional cost-effective strategies that have the potential to provide additional emission reductions. However, as with the analysis presented here, a key product of the subsequent refined analysis will include the macroeconomic impacts of the suite of strategies rather than each strategy.

Subsequent analysis of the strategies may also be affected by overall program implementation methods that have the potential to promote further cost reductions or savings. For example, cap-and-trade policies can unleash internal innovative powers of the private sector to adopt and invest in processes and methods that lower energy use and increase efficiency. Like energy efficiency standards that have been shown to create jobs, the innovative efforts induced by cap-and-trade or other similar tools would likely further enhance the cost effectiveness of reaching the climate change emission reduction targets.

Many of the strategies that end up with net costs may have benefits that are not directly estimated or may not be the focus of the climate change emission reduction efforts. For example, the afforestation strategy has a net cost. However, planting forests may provide indirect benefits to the public or other sectors of the economy that are not captured in this analysis. Specifically, strategies currently believed to result in a net cost may actually provide a savings when both direct and indirect benefits are considered.

Further, the benefits of strategies that already indicate a net savings may not be fully recognized in a conventional economic analysis. For example, several of the energy efficiency strategies may also facilitate increased security through further energy independence. Such indirect benefits should at least be qualitatively identified and considered when evaluating the strategies.

Finally, it may not be appropriate to assign all of the costs of the strategies currently underway to the climate change emission reduction efforts given that there are typically other considerations that contributed to the policy. Specifically, many of the strategies that are underway are being pursued to achieve other objectives (e.g., the Diesel Anti-Idling Strategy from Section 5 focused on reducing the population's exposure and risk associated with diesel particulate emissions as well as reducing smog precursors) with the associated climate change emission reductions being an added benefit. Many of the proposed strategies in Section 5 have the potential to address other programmatic objectives beyond climate change.

#### **8.4 Summary**

Based on this preliminary analysis, it appears that the climate change emission reduction targets can be met without adversely affecting the California economy. It is possible to adopt a suite of strategies in a manner that continuously benefits the economy. The strategies that focus on increased energy efficiency and produce net savings can greatly contribute to economic activity while reducing climate change emissions. Further, technology

improvements and innovative implementation of strategies currently estimated to have net positive costs may, in the long-run, result in net savings.

As refined cost information is developed for the strategies, a subsequent analysis of the economic impacts will be performed. In addition to characterizing the overall impacts of the strategies on California's economy, the subsequent analysis will allow individual strategies to be evaluated. The analysis may also facilitate the identification and inclusion of new cost-effective strategies that are not currently presented in Section 5. The analysis will also further inform decision-makers on the approach to strategy implementation that maximizes both environmental benefits and the benefits to the economy.

### **8.5 Implementation Options Assessment**

With the exception of the programmatic option, the implementation options shown in Table 7-1 have not yet been evaluated in terms of their economic impacts.

In the case of the market-based implementation option, an economic analysis will be needed once the state determines the design of such a program. By its nature the market-based option is designed to reduce the costs associated with achieving emission reductions relative to a command and control approach. Therefore, the primary concern with implementation of this option is typically not the economic impacts but rather the assurance of real emission reductions and the implications for low-income and minority communities.

In the case of the public goods charge for transportation, such a charge would be designed to provide economic security, risk reduction and cost savings to the paying public. In the case of the public goods charge on electricity, California consumers save approximately \$1,000 per year as a direct result of conservation efforts.

The public goods charge for transportation would be designed to provide economic benefits as well. Given the current volatility in the price of petroleum, risk reduction for a diversified transportation fuels market and reduced dependence on petroleum will provide a significant benefit to both consumers and to the economy as a whole.

The CAT is not recommending the fee-based and offset program options at this time. Both would require an economic evaluation prior to implementation.

## **9 IMPACTS ON LOW INCOME AND MINORITY COMMUNITIES**

Low-income and minority communities are disproportionately affected by pollution and other adverse environmental damages. Disproportionate access to health care and/or lack of resources have contributed to a situation in which residents of low-income and minority communities are more likely to be exposed to toxics and other pollutants and are less likely to have the resources to adequately respond. The environmental justice (EJ) movement was created as part of the larger social justice movement with the intent to ensure that residents

of low-income and minority communities were equally protected from exposure to toxic and other pollutants.

Environmental justice is an issue that has been embraced as a priority for the Governor and the Legislature. As this state moves forward in reducing climate change emissions, evaluating the impacts of climate change, and considering adaptation strategies, EJ concerns must be addressed.

### **9.1 Environmental Justice Programs**

The Governor's Office of Planning and Research (OPR) is the coordinating agency for environmental justice programs for the state. In 2003, OPR incorporated environmental justice elements within the General Plan Guidelines. This effort marked a beginning to a number of other State agencies, such as California Department of Transportation and the California Resources Agency, in adopting environmental justice policies.

Cal/EPA is the model agency (1999 Statutes) for implementing EJ into its programs, policies, and activities. In 2004, under the Schwarzenegger administration, Cal/EPA established its Intra-agency EJ Strategy, model EJ mission statement, and EJ Action Plan to ensure fair treatment and equity for all Californians regardless of race, age, culture, income, or geographic location.

The EJ Strategy is a long-term planning process and marks an important step toward addressing disproportionate environmental impacts on low-income and minority populations. To compliment the EJ Strategy, Cal/EPA also initiated the EJ Action Plan, a three-year action-oriented process, to explore complex issues such as cumulative impacts and precautionary approaches within six pilot projects throughout various regions in California.

The goal of the action plan is to develop environmental risk reduction plans for children's health, develop guidance for precautionary approaches and cumulative impacts, and improve public participation in the decision-making process. Cal/EPA reports to the Legislature every three years on the status of the EJ Strategy and Action Plan.

### **9.2 Outreach to Minority and Low Income Communities**

In order to solicit comment and promote dialogue with representatives from low-income and minority communities, the Climate Action Team made it a priority to attend local environmental justice community meetings. At these meetings, CAT representatives provided general background information on climate change and updated the groups on climate change activities and potential issues that might arise. Below is a list of meetings attended:

Date	Organization
September 30, 2005	California Environmental Rights ( Los Angeles)
October 5, 2005	North Richmond Air Quality Committee (Richmond)

October 11, 2005	North Richmond Municipal Advisory Committee (Richmond)
December 10, 2005	California Coalition Against Toxics (Los Angeles)

### 9.3 Strategy Evaluation

As the efforts of the CAT agencies to implement strategies outlined in section 5 move forward, outreach to communities must continue. Each of the agencies on the CAT has committed to support this priority.

Implementation of climate change emission reduction strategies will most likely benefit communities. In many cases, such as electrification of ports, efforts to reduce climate change emissions will provide a direct benefit. In these instances, the support of the communities is essential, and the support of the larger EJ movement will be an asset. If implementation of a strategy would require concomitant measures to ensure against harmful consequences to communities, State agencies must work with communities. In all cases, an open public process that is accessible to community representatives will ensure that EJ concerns are addressed and the statewide targets are met equitably.

### 9.4 Scenario Analysis

When considering the impacts of climate change on California and adaptation measures necessary, the State must also consider impacts specific to communities and the degree to which low-income and minority residents are affected.

The impacts of global warming will have economic and social consequences for low-income and minority communities. The adaptive capacity of people in these communities is lower than for average Californians.

Specific examples of situations in which low-income and minority communities are likely to be more adversely affected include:

Increasing costs for food, water, and energy will disproportionately affect the low-income communities.

Increasing use of pesticides will have an economic and public health impact on the farm workers.

An increase in the number of days Californians are exposed to ozone will disproportionately affect the people who do not have insurance or access to health care resources.

### 9.5 Market-Based Options

Low-income and minority communities are particularly wary of market-based because of the general belief that emissions trading allows for increased emissions at a local level and those increases are believed more likely to occur in the communities. The principal concern is not with the climate change emissions themselves because, in most instances, these emissions do not directly cause

local air quality problems. Rather, the concern is with the emissions of other pollutants (CO, NO<sub>x</sub>, SO<sub>x</sub>, PM, toxics) which may be affected by efforts to reduce climate change emissions. Two types of impacts may be of particular concern:

- Options that reduce climate change emissions could increase emissions of pollutants that cause local air pollution. For example, shifting from a fossil fuel to a biomass fuel could increase emissions of smog-forming pollutants unless appropriate emission control technologies are installed as part of the switch.
- Efforts to reduce climate change emissions may result in facilities with lower climate change emissions per unit of output being operated more than would otherwise be the case. Under these conditions, emissions of local air pollutants may increase near the facility that increases its operations.

In both of these cases, a local community could be impacted by increased emissions, even though climate change emissions decline overall. Because a market-based program provides substantial flexibility for facilities to select their preferred methods for achieving the climate change emission cap, the design of the program does not automatically mitigate this concern. Rather, steps must be taken to address this issue through additional measures.

#### **9.6 Implementation Options**

For all of the implementation options shown in Table 7-1 it will be essential to involve community representatives as these options are developed. As indicated in Sections 9.5 and 9.6, both the programmatic and market-based program options will need to involve community representatives.

In the case of the Public Goods Charge for Transportation, the State must work with communities to ensure that costs are not unduly burdensome and benefits are equitable.

Although the CAT is not recommending Fee-Based and Offset Program options at this time, both would require an open public process that ensured participation from communities prior to implementation.

### **10 SUMMARY AND CLIMATE ACTION TEAM RECOMMENDATIONS**

This report lays out a path forward to ensure that California's climate change emission reduction targets are met. Following the signing of Executive Order S-3-05, the Secretary of Cal/EPA created a Climate Action Team. The CAT has accomplished three main objectives: completion of a list of recommended strategies to reduce climate change emissions in the state; completion of a significant first step in what will be an ongoing scenario analysis that provides insight into the impacts of climate change on the state and presents adaptation plans; and evaluation of options for a market-based program in the state including next steps recommendations.

The CAT produced two categories of overarching recommendations. First and foremost, the overarching recommendations considered essential by the CAT in

meeting the statewide climate change emission reduction targets. The general recommendations listed in Section 10.2 are second tier recommendations that consist primarily of recommended next steps and indications of where further analysis is needed.

### **10.1 Climate Action Team Overarching Recommendations**

This final report has been revised from the December 2005 draft to reflect the comments, recommendations and suggestions that have been submitted. The final report proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and state incentive and regulatory programs. The Governor's climate change emission reduction targets are achievable with economic benefit for California.

The climate strategies set forth in this report are in various stages of development. Some of the strategies, such as the California Solar Initiative, are being implemented this year. Other strategies, such as those related to biofuels, may require stationary modification this year for implementation to proceed. Still others, such as Smart Land Use and Intelligent Transportation and Semiconductor Industry Targets, are sound but require further analysis and development and should be allowed to evolve over the next two years. The Climate Action Team preliminary economic assessment, which is based on the Environmental Dynamic Revenue Model, indicates that, by 2020, implementation of these strategies will result in 83,000 new jobs and an increase in personal income of \$4 billion.

The Climate Action Team process for developing this report has been successful and the Team should be charged with the next phase of activity. Since the signing of the Executive Order, under the leadership of Cal/EPA, the Climate Action Team has provided a forum for coordinating State agency actions, program development, and budget proposals in addition to this report. It allows for collaboration, reduced internal competition and conflict, and provides a single point of contact.

The Climate Action Team recognizes that reducing climate change emissions is challenging and will need to be addressed in a deliberative on-going manner. The Team also recognizes that many of the reductions will come from technological innovations that are not yet fully developed. We have identified key recommendations that will help ensure the Governor's targets are met:

- A multi-sector market-based system uses economic incentives to lower costs, protect economic growth and promote innovation. The Climate Action Team should proceed with the development of a multi-sector market-based program which considers trading, emissions credit auction and offsets. The Climate Action Team should develop a multi-sector market-based program and make a recommendation to the Governor on

the structure for such a program no later than January 1, 2008. The Governor's 2020 climate change emission reduction target to reach 1990 emission levels should be the basis for an emissions cap in the development of program. The Climate Action Team should consider working with other western states to develop a multi-state program to minimize emissions leakage.

- Mandatory emissions reporting from the largest sources oil and gas extraction, oil refining, electric power, cement manufacturing and solid waste landfills, that builds on the California Climate Action Registry is essential. Mandatory reporting will ensure an accurate inventory of emissions which is critical to ensure that decision-making is based on real emissions and emission reductions. Equally essential are provisions for early action credit and a mechanism to ensure that companies are not penalized for early action. Early action will be attributed to California businesses that have voluntarily joined the California Climate Action Registry and have reduced emissions. Although the voluntary Climate Action Registry is a foundation, the Climate Action Team believes mandatory reporting must occur through a state government agency.
- A multi-generational public education campaign should be implemented to ensure that the public is informed about the issue of climate change and what they can do to reduce emissions and adapt to adverse consequences. Such a program can build upon successful campaigns in place, such a Flex Your Power. The Education and the Environment Initiative mandates the development of a unified strategy to bring education about the environment into California's K-12 schools through California's Environmental Principles & Concepts and a standards-aligned, State Board of Education-approved model curriculum. It is essential that California's children understand the impacts and consequences of climate change on the State's resources as well as mitigation and adaptation strategies.
- The macroeconomic analysis should be updated to reflect refined data collected over the next year. A cost-effectiveness analysis of all the strategies recommended in this report should be developed. Both should be completed by July 2007 and should incorporate a peer review process.
- Transportation is the largest source of climate change emissions in California. The Air Resources Board's vehicle climate change standards address a significant portion of the transportation sector. However, an aggressive alternative fuels program will significantly reduce climate change emissions. The California Energy Commission working with Cal/EPA and its boards and departments, and the Department of Food and Agriculture is currently developing an aggressive biofuels program that will be available this Spring. This biofuels program should be



considered an essential component of the effort to reduce California's carbon footprint.

- The Governor's climate change emission reduction targets are based in part on the planning assumptions in the California Energy Commission's Integrated Energy Policy Report. Specifically the Integrated Energy Policy Report recommends that all long-term new electricity generated for use in the state must come from sources with climate change emissions equivalent to or less than a new combined cycle natural gas power plant. The Public Utilities Commission's recently adopted proposal for an electricity sector carbon policy is generally consistent with the Integrated Energy Policy Report and will set forth a regulatory scheme for enforcing such a policy applicable to investor-owned utilities. The Climate Action Team recommends the policy, including an accountability mechanism, in the Integrated Energy Policy Report be extended to apply to all load-serving entities in the State, including municipal utilities, electric service providers and community choice aggregators. The Public Utilities Commission will work with the Climate Action Team so that this effort is consistent with the development of a multi-sector market-based program.
- All utilities should meet the energy efficiency goals and the Renewable Portfolio Standard required of investor-owned utilities. The State has adopted energy efficiency goals and a Renewable Portfolio Standard for investor-owned utilities. Publicly-owned utilities should match this level of performance and account for their achievements in a manner consistent with that of investor-owned utilities. Because publicly-owned utilities provide 25% to 30% of the electricity used in California, these entities are essential to the state's overall goal to reduce electricity demand and increase the State's use of renewable resources. The Energy Commission should work with the publicly-owned utilities to develop an accurate accounting system that captures climate emission reduction efforts by publicly-owned utilities so that their performance can be evaluated comparatively to investor owned utilities.
- The California Climate Action Registry, in cooperation with the Energy Commission, should develop emission reporting protocols for local government. Local governments are already contributing to the effort to reduce climate change emissions and an accurate tracking system of their contributions is essential.
- Over time funding will be needed to implement the strategies set forth in this plan and to provide incentives for industry to develop emission reduction technologies for use in California and abroad. A coordinated investment strategy can leverage the talent of California's universities, community colleges, and other entities and to lead technology development and train the next generation of technicians that will be

needed to operate and service those technologies. A public goods charge for transportation that funds key strategies to reduce climate change emissions and to reduce dependence on petroleum should be considered. Overdependence on petroleum fosters undesirable geopolitical, economic, energy, and environmental consequences. Other possible funding could come from the PIER program at the Energy Commission, targeted dedication of other state funds, or philanthropic and corporate investment. The electricity sector and natural gas Public Goods charges should continue at projected levels. Any new funding concepts require additional study until the preliminary recommendations noted above can be more fully developed. Accordingly, the Governor's 2006-07 budget proposes \$7.2 million across several state agencies to begin implementation of the recommendations in this report.

## **10.2 General Recommendations**

General recommendations included in this report are listed below. These recommendations are broken down into broad categories according to their relation to the emission reduction strategies, economics analysis, climate change emission reduction inventory, or market-based program options.

### Economic Analysis

The State needs to take the following actions by July 2007:

Complete an analysis of the individual strategies presented in Section 5 to determine the cost-effectiveness for each strategy.

Develop a revised macroeconomic impact assessment to include updated cost estimates for the individual strategies.

Determine preliminary costs associated with the impacts of climate change on public health, water, agriculture, coastlines, and forests in California.

Determine updated costs associated with adaptation.

### Climate Change Emission Inventory

It is essential that the California Energy Commission continue to refine the planning inventory they currently keep.

### Market-Based Program

A market-based program should be considered further as an integral part of California's approach to reducing climate change emissions. In the absence of national action, California can lead by example by developing a market-based program as a model for national action.

Market-based program alternatives should be defined in detail and evaluated in terms of impacts on emissions; costs of reducing emissions; state competitiveness, businesses, and jobs; impacted communities with environmental justice concerns; and administrative and budget requirements.

Legislative authority required to implement a market-based program should be identified.

#### Scenario Analysis

California should continue to support research relevant to policy on climate change, including support of the research activities of the California Climate Change Center. Some of the areas of research in need of attention include the study of ecological impacts, the development of probabilistic climate projections for the state, a geographically-detailed analysis of the impacts of sea level rise on the California coast and the San Francisco Bay and Delta, the impact of climate change on energy generation and demand and human health, and new methods for economic impact analyses.

Climate change may disproportionately impact the most vulnerable groups in our society, including children, the elderly and frail, and residents in low-income and minority communities. For this reason, future scenario analysis should strive to identify these potential impacts and suggest solutions.

Given the serious potential consequences of climate change on the State's resources, California should expand its support of climate change research to create the tools, methods, and information that will be needed to develop robust coping and adaptation strategies in the state.

## **11 LIST OF ACRONYMS AND ABBREVIATIONS**

ARB	California Air Resource Board
BT&H	Business, Transportation and Housing Agency
CA H <sub>2</sub> Net	California Hydrogen Highway Network
Cal/EPA	California Environmental Protection Agency
CAT	Climate Action Team
CCA	Community Choice Aggregators
CDFA	Department of Food and Agriculture
CEC	California Energy Commission
Center	California Climate Change Center
CEQA	California Environmental Quality Act
CGE	Computable General Equilibrium
CH <sub>4</sub>	Methane
CHP	Cooling, Heating and Power
CIWMB	California Integrated Waste Management Board
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	climate change emissions expressed as CO <sub>2</sub> equivalent.
DHS	Department of Health Services
DOE	United States Department of Energy
DWR	Department of Water Resources
EAP	Energy Action Plan
E-DRAM	Environmental Dynamic Revenue Model
EJ	Environmental Justice
EO	Executive Order
ESPs	Energy Service Providers
EWMP	Efficient Water Management Practices
GCMs	Global Climate Models
GFDL	Geophysical Fluid Dynamic Laboratory
GHGs	Greenhouse Gases
GWP	Global Warming Potential
HadCM3	Hadley Centre Climate Model, version 3
HFC	Hydrofluorocarbons

IEPR Integrated Energy Policy Reports  
 IOU Investor Owned Utility  
 IPCC Integovernmental Panel on Climate Change  
 ITS Intelligent Transportation Systems  
 IWMA Integrated Waste Management Act  
 kWh kilowatt hour = 3.6 MJ = 3,412 Btu  
 LEAs Local Enforcement Agencies  
 MAF Million Acre Feet  
 MMt Million Metric Tons  
 MOU Memorandum of Understanding  
 N<sub>2</sub>O Nitrous Oxide  
 NAST National Assessment Synthesis Team  
 NCAR National Center for Atmospheric Research  
 NMVOCs Nonmethane Volatile Organic Compounds  
 NO Nitrogen Oxides  
 NOAA National Oceanic & Atmospheric Administration  
 NPV Net Present Value  
 O<sub>3</sub> Tropospheric  
 °C Celsius  
 ODS Ozone Depleting Substances  
 °F Fahrenheit  
 PCM1 Parallel Climate Model  
 PFC Perfluorocarbons  
 PIER Public Interest Energy Research  
 PM Particulate Matter  
 PPM Parts per Million  
 PUC Public Utilities Commission  
 Registry California Climate Action Registry  
 RPS Renewable Portfolio Standard  
 SF<sub>6</sub> Sulfur Hexafluoride  
 SO<sub>2</sub> Sulfur Dioxide  
 SRES Special Report on Emissions Scenarios  
 TRUs Transportation Refrigeration Units

U.S. EPA    United States Environmental Protection Agency

UK    United Kingdom

VMT   Vehicle Miles Traveled

VOC   Volatile Organic Compound

W/m<sub>2</sub>   Watts per Square Meter

WUI   Wildland-Urban Interface

## 12 ENDNOTES

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<sup>9</sup> Pope, V. D., M. L. Gallani, P. R. Rowntree, and R. A. Stratton, *Climate Dynamics*, 2000, Vol. 16, pp. 123–146.

<sup>10</sup> This section summarizes the findings from:

Drechsler, Deborah M., Nehzat Motallebi, Michael Kleeman, Dan Cayan, Katharine Hayhoe, Laurence S. Kalkstein, Norman Miller, Scott Sheridan, Jiming Jin, and R. Tony VanCuren, "Public Health-related Impacts of Climate Change," 2006. Michael Kleeman and Dan Cayan. "Impact of Climate Change on Meteorology and Regional Air Quality In California." Interim Report to ARB. December 2005.

<sup>11</sup> This section summarize results from:

Brian Joyce et al., "Climate Change Impacts on Water for Agriculture in California: A case study in the Sacramento Valley," 2006; Jouse Medellin, Julien Harou, Marcelo Olivares, Jay Lund,

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Richard Howitt, Stacy Tanaka, Marion Jenkins, and Tingju Zhu, "Climate Warming and Water Supply Management in California," 2006; Russell Yaworsky, U.S. Bureau of Reclamation, Sacramento, "Climate Change Impacts on the SWP and CVP," Progress on Incorporating Climate Change into Management of California's Water Resources. 1st Progress Report, in review; K. Hayhoe, D. Cayan, et al., "Emissions pathways, climate change, and impacts on California." PNAS 2004, Vol. 101, No. 34, pp. 12422–12427.

<sup>12</sup> This section summarizes reports prepared by:

T. Cavagnoro et al. 2006; D. Balducci et al. 2006; A.P. Gutierrez, C.K. Ellis, R. Ghezlbash, "Climatic Limits of Pink Bollworm in Arizona and California: Effects of Climate Warming," *Acta Oecologica*, forthcoming.

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<sup>14</sup> Gutierrez, "Climatic limits of pink bollworm."

<sup>15</sup> Dan Cayan et al., 2006.

<sup>16</sup> J.M. Lenihan, R. Drapek, R. Neilson, and D. Bachelet, "The response of vegetation distribution, ecosystem productivity, and fire in CA to future climate scenarios simulated by the MC1 DGVM," 2006.

<sup>17</sup> J.S. Freid et al., and Westerling et al. 2006

<sup>18</sup> Max Moritz and Scott Stephens, 2006.

<sup>19</sup> John Battles et al., 2006.

<sup>20</sup> Summarizes results from Battles et al. 2006

<sup>21</sup> This section summarizes work from the following sources:

Jouse Medellin, Julien Harou, Marcelo Olivares, Jay Lund, Richard Howitt, Stacy Tanaka, Marion Jenkins, and Tingju Zhu, "Climate Warming and Water Supply Management in California," 2006; Chung et al., "Progress on Incorporating Climate Change into Management of California's Water Resources," California Department of Water Resources, 2006; Guido Franco and A. Sanstad, "Electricity and Climate Change in California, California Energy Commission," 2006

<sup>22</sup> More discussion on the role of mitigation and adaptation can be found in A. Luers and S. Moser, "Preparing for the Impacts of Climate Change in California: Advancing the Debate on Adaptation," 2006.

<sup>23</sup> California Environmental Protection Agency Air Resources Board (ARB), Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles, August 6, 2004. <<http://www.arb.ca.gov/regact/gmhsgas/isor.pdf>>

<sup>24</sup> Adoption of the Proposed Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, ARB, July 22, 2004.

<<http://www.arb.ca.gov/regact/idling/idling.htm>>

<sup>25</sup> This figure is net of added electricity use at truck stops.



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<sup>26</sup> The Acid Rain Trading Program caps total sulfur dioxide (SO<sub>2</sub>) emissions from all fossil-fueled electric generating units in the United States with capacity of 25 MW or more. The Northeast NO<sub>x</sub> Program caps total emissions of nitrogen oxides (NO<sub>x</sub>) from electric generating units and large industrial boilers in 19 states and the District of Columbia.

<sup>27</sup> Ellerman, A., Paul Joskow Denny, and David Harrison, *Emission Trading in the U.S. Experience, Lessons, and Considerations for Greenhouse Gases*, Pew Center on Global Climate Change, Washington, D.C., May 2003, pp.12–20 and pp. 29–31. U.S.EPA, *Evaluating Ozone Control Programs in the Eastern United States: Focus on the NO<sub>x</sub> Budget Trading Program*, 2004, U.S. EPA, Washington, D.C., EPA454-K-05-001, August 2005, pp. 27-30.

<sup>28</sup> A third cap and trade program in the U.S. is the Regional Clean Air Incentives Market (RECLAIM) program. The RECLAIM Program caps NO<sub>x</sub> and SO<sub>x</sub> emissions in the South Coast air basin from about 350 NO<sub>x</sub> sources and 40 SO<sub>x</sub> sources. In 2000, after seven years of operation, the emission trading market for the RECLAIM Program experienced volatile price swings that eventually led to the program being restructured to exclude electric generating units. Multiple factors contributed to the difficulties in the RECLAIM Program, including impacts from the deregulation of the electric power sector. U.S.EPA, *An Evaluation of the South Coast Air Quality Management District's Regional Clean Air Incentive market—Lessons in Environmental Markets and Innovation*, U.S. Environmental Protection Agency, Washington, D.C., 2002, p. 24.

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<sup>31</sup> "An Evaluation of the South Coast Air Quality Management District's Regional Clean Air Incentive market—Lessons in Environmental Markets and Innovation," U.S. Environmental Protection Agency, Washington, D.C., 2002, pp. 15-16.

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**DRAFT**

California Environmental Protection Agency  
 Air Resources Board

# **EXPANDED LIST OF EARLY ACTION MEASURES TO REDUCE GREENHOUSE GAS EMISSIONS IN CALIFORNIA RECOMMENDED FOR BOARD CONSIDERATION**



Lyell Glacier, Yosemite National Park, California, USA circa 1903 (upper) and 2003 (lower)

**SEPTEMBER 2007**



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The ARB staff is recommending that the Board expand the list of early action measures being pursued to reduce greenhouse gas emissions from 37 to 44 measures. Of these measures staff believes 9 merit consideration to be placed on the list of discrete early actions as defined by the California Global Warming Solutions Act of 2006 (AB 32), increasing the size of the current list of 3 by 6 items. Cumulatively, these 44 measures have the potential to deliver greenhouse gas emission reductions on the order of at least 42 million metric tons of CO<sub>2</sub>-equivalents (MMTCO<sub>2</sub>E) or a quarter of the 2020 emission reductions needed to meet AB 32 goal. Existing ARB regulations will contribute approximately an additional 30 MMTCO<sub>2</sub>E reductions. The Climate Action Team has also identified measures (external to the ARB) that account for a cumulative reduction of approximately 68 MMTCO<sub>2</sub>E. The remaining reductions to meet the 2020 target will be identified by the Scoping Plan due in late 2008. These additional early action recommendations will be presented at a September 17, 2007 public workshop and following consideration of public input will be brought before the Board at its October 25-26, 2007 hearing.

## **EXECUTIVE SUMMARY**

In June 2007 the Air Resources Board (ARB) directed staff to pursue 37 early actions for reducing greenhouse gas (GHG) emissions under the California Global Warming Solutions Act of 2006 (AB 32). The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate GHG reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible. Three of these 37 identified strategies were also identified as discrete early action measures. These are measures that could be fully adopted as regulations and made effective no later than January 1, 2010, the date established by the Health and Safety Code (HSC) Section 38560.5(b) that requires ARB to adopt discrete early actions.

In addition to approving the 37 GHG reduction strategies, the Board directed staff to further evaluate early action recommendations made at the June 2007 meeting by the AB 32 Environmental Justice Advisory Committee (EJAC), the California Air Pollution Control Officers Association (CAPCOA), and the South Coast Air Quality Management District (SCAQMD), and to report back to the Board within six months. The general sentiment of the Board suggested a desire to try to pursue greater GHG emissions reductions in California in the near-term. This revised early actions report provides staff's analyses of additional emission reduction strategies, and provides recommendations to significantly expand the list of early actions as well as discrete early action measures as identified by HSC Section 38560.5(a).

Since the June 2007 Board hearing, ARB staff has evaluated all 48 recommendations submitted by the EJAC, CAPCOA, and SCAQMD, as well as several other stakeholder suggestions and several internally-generated staff ideas. Each of these measures has been carefully considered with respect to potential emissions reductions, technological feasibility, estimated costs, and economic impacts. This document reports staff's findings and makes further recommendations for a revised list of early actions and, specifically, discrete early action measures (See insert in next page for definitions). The report also provides much greater detail on the evaluation of measures that staff has conducted since the previous April 2007 early actions report<sup>1</sup> was released.

Based on its additional analysis, ARB staff is recommending the expansion of the early action list to a total of 44 measures. The additions to the list of the ARB's commitments also triple the number of measures that would be pursued on an accelerated timeline that meets the AB 32 timeframe for discrete early actions.

In total, as shown in Figure ES-1, the 44 recommended early actions have the potential to reduce GHG emissions by at least 42 million metric tons of carbon dioxide (CO<sub>2</sub>) equivalent (MMTCO<sub>2</sub>E) emissions by 2020, representing about 25% of the estimated reductions needed by 2020. ARB staff is working on 1990 and 2020 GHG emission inventories in order to refine the projected reductions needed by 2020 and expects to present its recommendations to the Board by the end of 2007. The 2020 target reductions are currently estimated to be 174 MMTCO<sub>2</sub>E.

Efforts to develop several of the strategies are already underway with workshops planned for fall 2007 and early 2008. Further, the Climate Action Team (CAT) member agencies<sup>2</sup> are also moving forward with early actions with a targeted reduction of 68 MMTCO<sub>2</sub>E by 2020<sup>3</sup>. Both the ARB and CAT emission reduction projections are best estimates that are subject to revision as additional information on individual measures becomes available. The ARB staff will report on the early actions progress to its Board every six months. The CAT will also periodically update its efforts and progress on a similar schedule.

A list of all 44 early actions is presented in Table 1, with recommended additions as well as the discrete early action measures identified. In addition, the year and quarter in which the ARB Board hearing is anticipated is also indicated. Inclusion of a strategy, regardless of classification or whether it can be implemented before or after the January 1, 2010 enforceability date for discrete early action measures, represents a commitment by the Board to pursue and – for those strategies that meet all legal and technical requirements – bring the measure to the Board on the timeframe illustrated in the table.

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<sup>1</sup> Available at [www.arb.ca.gov/cc/042307workshop/early\\_action\\_report.pdf](http://www.arb.ca.gov/cc/042307workshop/early_action_report.pdf).

<sup>2</sup> Includes the California Environmental Protection Agency, the Business, Transportation and Housing Agency, the Department of Food and Agriculture, the Resources Agency, the Air Resources Board, the Energy Commission, and the Public Utilities Commission.

<sup>3</sup> Those actions are described by the CAT in its companion report on early actions which can be found at [www.climatechange.ca.gov/climate\\_action\\_team/reports/2007-04-20\\_CAT\\_REPORT](http://www.climatechange.ca.gov/climate_action_team/reports/2007-04-20_CAT_REPORT).

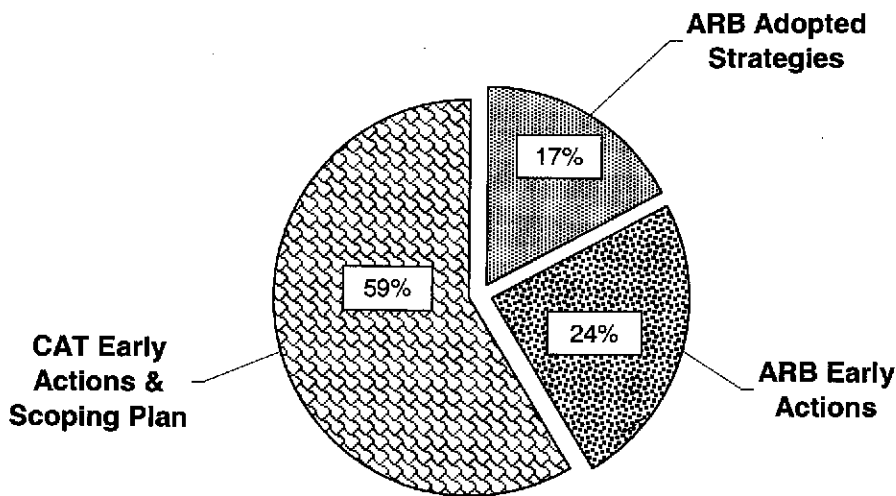


Figure ES-1. 2020 ARB GHG Reduction Estimates by Different Elements of the State's Climate Protection Action Plan.

## BACKGROUND

The California Global Warming Solutions Act of 2006 (AB 32) creates a comprehensive, multi-year program to reduce GHG emissions in California, with the overall goal of restoring emissions to 1990 levels by the year 2020 (see Figure 1). AB 32 recognizes that such an ambitious effort requires careful planning and a comprehensive strategy. By January 1, 2009 the Board must design and adopt an overall Scoping Plan to identify how GHG emissions can be reduced back to 1990 levels by 2020. The Board has until January 1, 2011 to adopt the necessary regulations to implement that plan. Implementation begins no later than January 1, 2012 and the emissions reduction target is to be achieved by January 1, 2020. AB 32 also directs the Board to make recommendations on how to best achieve further reductions beyond 2020.

**Discrete Early Action** – Greenhouse gas reduction measure underway or to be initiated by ARB that meets the AB 32 legal definition as identified by the Health and Safety Code Section 38560.5. Discrete early actions are regulations to reduce greenhouse gas emissions adopted by the Board and enforceable by January 1, 2010.

**Early Action** – Greenhouse gas reduction measures underway or to be initiated by ARB in the 2007 – 2012 timeframe. These measures may be regulatory or non-regulatory in nature.

In April of 2007 ARB staff released a report entitled 'Proposed Early Actions to Mitigate Climate Change in California.' In that report staff proposed 37 early actions to reduce GHG emissions in California with a cumulative estimate in the range of 33-46 MMTCO<sub>2</sub>E by 2020. Existing ARB regulations contributing an additional 30+ MMTCO<sub>2</sub>E (principally the AB 1493 regulations on vehicle GHG emissions) were also discussed. Thus, ARB committed to pursue strategies with the potential to yield over 60 MMTCO<sub>2</sub>E by 2020, representing an important down payment towards the estimated 2020 reduction target. In its April 2007 report staff recommended that three of these strategies be developed on a schedule that met the AB 32 legal requirement for discrete early action measures – the Low Carbon Fuel Standard (LCFS), reduction of refrigerant losses from motor vehicle air conditioning maintenance, and increased methane capture from landfills.

At its June hearing the Board adopted a resolution which listed three discrete early action measures recommended by the staff and also committed ARB to pursue a total of 37 early actions. The Board also directed the staff to further evaluate recommendations for early actions made by the EJAC, CAPCOA, and the SCAQMD, and to report back to the Board within six months. The general sentiment of the Board suggested a desire to try to accomplish greater GHG emissions reductions in California in the near-term. The staff has completed these additional analyses requested by the Board and staff's conclusions and recommendations form the basis of this report. The updated recommendations documented herein will be presented at a September 17, 2007 public workshop at ARB headquarters in Sacramento, and following additional consideration of public input by the staff will be considered by the Board at its October 25-26, 2007 hearing.

Figure 1. Comprehensive Multiyear Program Established by AB 32

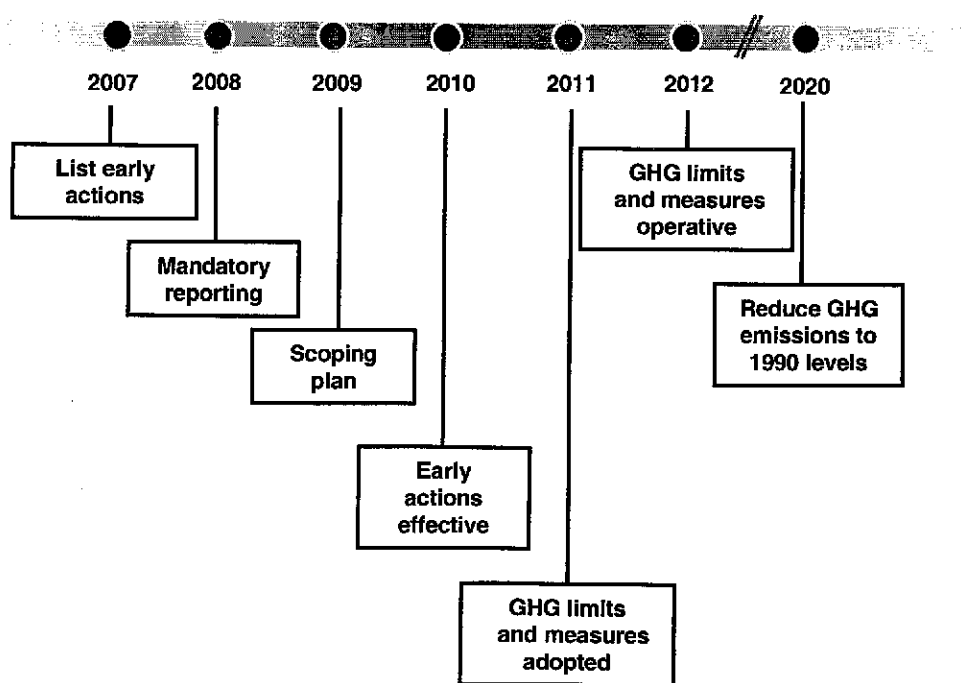


TABLE 1. GHG REDUCTION MEASURES UNDERWAY  
OR TO BE INITIATED BY ARB IN THE 2007-2012 PERIOD

EA ID	SECTOR	STRATEGY NAME	ARB BOARD HEARING DATE <sup>1</sup>											
			2007			2008			2009			2010		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Fuels	Above ground storage tanks <sup>1</sup>												
2	Transportation	Diesel - Offroad equipment (non-agricultural) <sup>2</sup>												
3	Forestry	Foresty protocol endorsement <sup>2</sup>												
4	Transportation	Diesel - Port trucks <sup>4</sup>												
5	Transportation	Diesel - Vessel main engine fuel specifications <sup>2</sup>												
6	Transportation	Diesel - Commercial harbor craft <sup>2</sup>												
7	Transportation	Diesel - Vessel harbor craft <sup>2</sup>												
8	Agriculture	Manure management (methane digester protocol) <sup>2</sup>												
9	Education	Local government GHG reduction guidance / protocols <sup>4</sup>												
10	Education	Business GHG reduction guidance / protocols <sup>2</sup>												
11	Energy Efficiency	Coal communities program <sup>2</sup>												
12	Commercial	Reduction of high-GWP GHGs used in refrigeration and air conditioning <sup>3</sup>												
13	Transportation	Reduction of GHGs from semi-truck traffic <sup>2</sup>												
14	Transportation	Small business incentives <sup>2</sup>												
15	Transportation	Low-GWP Fuel Standards (LCFS) <sup>2</sup>												
16	Transportation	Reduction of HFC-134a and other HFCs from MVAC services <sup>2</sup>												
17	Transportation	Approved antifreeze coolant <sup>2</sup>												
18	Fuels	Gasoline dispenser hose replacement <sup>2</sup>												
19	Fuels	Portable outdoor marine tanks <sup>2</sup>												
20	Transportation	Standards for off-cycle driving conditions <sup>2</sup>												
21	Transportation	Diesel - Privately owned on-road trucks <sup>2</sup>												
22	Transportation	Anti-idling enforcement <sup>2,3</sup>												
23	Transportation	SP-1 reduction from the mobile source <sup>2</sup>												
24	Transportation	High efficiency lighting <sup>2</sup>												
25	Transportation	Cool automobile paints												
26	Cement	Cement (A): Blended cements <sup>3</sup>												
27	Cement	Cement (B): Energy efficiency of California cement facilities <sup>3</sup>												
28	Transportation	Ban of HFC release from MVAC service / dismantling												
29	Transportation	Diesel - offroad equipment (agricultural) <sup>2</sup>												
30	Transportation	Add AC leak tightness test and repair to Smog Check												
31	Agriculture	Collaborative research on GHG reductions from nitrogen land application <sup>2</sup>												
32	Commercial	Specifications for commercial refrigeration												
33	Oil and Gas	Reduction of venting / leaks from oil and gas systems												
34	Transportation	Requirement of low-GWP GHGs for new MVACs <sup>4</sup>												
35	Transportation	Hybridization of medium and heavy-duty diesel vehicles												
36	Electricity	Reduction of SF <sub>6</sub> in electricity generation												
37	Commercial	High GWP refrigerant tracking, recharging, and recovery program <sup>3</sup>												
38	Commercial	Flammability recovery / destruction program												
39	Fire Suppression	Alternative suppressants in fire protection systems												
40	Transportation	Strengthen light-duty vehicle standards												
41	Transportation	Truck stop electrification with incentives for truckers												
42	Transportation	Diesel - Vessel speed reductions <sup>2,3</sup>												
43	Transportation	Transportation refrigeration - electric standby <sup>2,3</sup>												
44	Agriculture	Electrification of stationary agricultural engines <sup>3</sup>												

<sup>1</sup> Add 9-12 months to Board adoption date to determine the approximate date of Office of Administrative Law (OAL) approval, thereby making a regulation that the Board has adopted legally enforceable.

<sup>2</sup> There is a reasonable expectation that these measures will yield some reductions in emissions impacting climate (e.g., diesel particulate matter, hydrocarbons). However, they are not listed as discrete early actions because they do not directly address greenhouse gases for which the science is most robust (e.g., CO<sub>2</sub>, SF<sub>6</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFC, PFC), are non-regulatory, or are not enforceable by January 1, 2010. Some are regulations recently adopted by the Board.

<sup>3</sup> These are additional early actions that were not on the list approved by the Board at its June 2007 hearing.

<sup>4</sup> New requirements for HDVs and other classes not included in AB 1493 to be adopted in 2010. Additional requirements for LDVs to be adopted in conjunction with Pavley II (EA 10 40).

<sup>5</sup> Board hearing is not required or indicated - these measures may be ongoing voluntary efforts or under evaluation by staff with insufficient data to justify setting a Board hearing date at this time.



The ARB is one of many state agencies pursuing early actions. The CAT has identified and is refining additional GHG reduction strategies that can be accomplished or initiated in the 2007-2009 period. The CAT process continues to evolve and grow and its early actions will be indispensable for meeting the 2020 target.

The ARB is also in the process of developing a comprehensive Scoping Plan, due in late 2008, which will outline a multifaceted approach to meeting the 2020 emissions reduction target defined in AB 32. The Scoping Plan will evaluate opportunities for sector-specific reductions, integrate synergistically all ARB and CAT early actions and additional GHG reduction measures by both entities, identify additional measures to be pursued as regulations, and define the role of any potential market mechanisms such as a cap-and-trade program. The analyses of many potential GHG emission reduction strategies that are not recommended as early actions are currently underway and will continue as part of the Scoping Plan development. Recommendations regarding the form of these additional GHG reduction measures (e.g., regulatory, non-regulatory, market-based) will be included in the Scoping Plan.

AB 32 requires that all GHG reduction regulations adopted and implemented by the Board be technologically feasible and cost-effective. The law also requires that GHG measures be structured to prevent negative impacts on emissions of criteria pollutants (e.g., hydrocarbons, particulate matter) and to avoid any disproportionate socioeconomic effects (among other criteria). These are critical considerations for each of the recommended early actions. Staff must address these factors fully as detailed proposals are developed. While staff has advanced its understanding with respect to key requirements that must be addressed for most of the proposed strategies, the analyses have not progressed to the point where all impacts (e.g., technical feasibility, cost-effectiveness) can be defined conclusively at this time. Staff plans to develop this information for each of the early actions brought before the Board. If additional information or analysis reveals that a particular measure cannot meet one or more of these requirements, it will not be put into effect. The actual design or features of each measure will be crafted through an open public process that includes interaction with interested stakeholders through various means including workshops.

## **CONSIDERATION OF STAKEHOLDER INPUT**

### **Sources of Additional Strategies**

As directed by the Board, ARB staff further evaluated early action recommendations from the EJAC, CAPCOA, and SCAQMD as presented at the June 2007 Board Meeting. The original submissions from these entities are included in Appendix A to this report. A brief summary of recommendations from these three sources is as follows:

- The EJAC submitted 34 recommendations for early actions. Of these, 21 were approved by the Board at its June 2007 hearing. Thirteen strategies were not on the list approved by the Board at its June hearing. These are evaluated in Appendix B.

- The CAPCOA submitted five broad suggestions regarding early actions. These and a sixth suggestion are also addressed in the strategy evaluations presented in Appendix B.
- The SCAQMD submitted eight suggestions pertaining to early actions, each of which was further evaluated by ARB staff as documented in Appendix B.

In addition to the items from these three sources, ARB staff has also evaluated additional potential early actions since the June 2007 Board meeting. These measures were either stakeholder suggestions or were items generated internally. There were also several measures approved by the Board at its June 2007 hearing that have direct climate benefits but were not addressed via the EJAC, CAPCOA, SCAQMD, or additional stakeholder suggestions summarized above that are further evaluated in this report. A list of all 63 items considered from these various sources may be found in Table 2 of this document. The results of the staff analysis for each of the strategies evaluated are included in Appendices B and C as indicated in the 'Summary Number' column of Table 2. For those items in Table 2 that are included in the list of previously approved or newly recommended early actions in Table 1, their Early Action ID number from Table 1 is also provided as a cross-reference.

There were several early actions approved by the Board at its June 2007 hearing which were not evaluated further by the ARB (as the rationale for them was documented in the April 2007 report). These include the three discrete early action measures – specifically the LCFS, reduction of refrigerant losses from motor vehicle air conditioning maintenance, and increased methane capture from landfills – currently approved by the Board. Additionally, some air pollution control measures that have been approved by the Board with potential GHG reductions or other climate co-benefits (e.g., diesel control measures and hydrocarbon emission standards) have not been further evaluated by staff as their primary rationale was already established.

### Staff Analysis of Strategies

Based on the direction from the Board, significant staff effort was expended to increase the depth and breadth of the analysis afforded to the strategies suggested by stakeholders. For each candidate early action measure analyzed, staff's recommendation concerning identification as an early action was based on a consideration of potential emissions reductions, estimated costs and economic impacts, the impacted sectors / entities, technological feasibility, and any additional information available. Completion of a full analysis for each of these factors was the goal for each strategy evaluated. However, as a comprehensive assessment will take at least several months for many strategies, much of the desired information is very preliminary or not currently available for a number of measures. Each staff evaluation sought to address:

TABLE 2. GHG REDUCTION STRATEGIES FURTHER EVALUATED BY THE ARB

SUMMARY NUMBER	TBL 1 EA ID	SOURCE	SECTOR	STRATEGY DESCRIPTION	DISPOSITION
NA	17	EJAC	Waste	Landfill methane gas recapture	No Change in Classification
Appendix B01	--	CAPCOA	Government	CAPCOA recommendations 1. Prioritize SIP reductions to maximize GHG reductions 2. Local rules / potential statewide measures to ID early actions 3. Existing permit programs for significant stationary sources 4. Develop guidance on review and mitigation of GHGs under CEQA 5. Local air district coordinated voluntary programs	Further Evaluation Required
Appendix B02	37	EJAC	Transportation	Refrigerant tracking, reporting and recovery program	Add as an EA
Appendix B03	8	EJAC	Agriculture	Manure digester protocol for calculating greenhouse gas mitigation	No Change in Classification
Appendix B04	33	EJAC	Oil and Gas	Reduce methane venting/leaks from oil and gas systems	No Change in Classification
		EJAC	Oil and Gas	Recycling of waste gases at oil production sites	
		EJAC	Oil and Gas	Eliminate methane exemptions granted to oil production sites	
Appendix B05	14	EJAC	Oil and Gas	Energy efficiency measures at oil production sites	No Change in Classification
Appendix B06	25	STAKEHOLDER	Transportation	SmartWay truck efficiency	Re-classify as a Discrete EA Measure
Appendix B07	7	EJAC	Transportation	Cool paints for automobiles	No Change in Classification
		EJAC/SCAQMD	Commercial	Green ports	
Appendix B08	43	EJAC	Transportation	Shoreside generators / electrical hookup	Re-classify as a Discrete EA Measure
		SCAQMD	Transportation	Auxiliary ship engine cold ironing	
Appendix B09	41	EJAC	Transportation	Transport refrigeration units, electric standby	No Change in Classification
Appendix B10	24	EJAC	Transportation	Truck stop electrification with incentives for truckers	No Change in Classification
Appendix B11	34	EJAC	Transportation	Tire pressure program	Re-classify as a Discrete EA Measure
Appendix B12	30	EJAC	Transportation	Requirement of low-GWP GHGs for new MACS	No Change in Classification
Appendix B13	--	EJAC	Transportation	Addition of AC leak test and repair requirements to Smog Check	No Change in Classification
Appendix B14	--	EJAC	Cement	WAFFLEMAT Systems	Evaluating for Scoping Plan
Appendix B15	--	EJAC	Commercial	Green ship incentive program	Evaluating for Scoping Plan
Appendix B16	--	EJAC	Commercial	Anti-idling requirement for cargo handling equipment at ports	Evaluating for Scoping Plan
Appendix B17	--	EJAC	Transportation	Electrification of airport ground support equipment	Evaluating for Scoping Plan
Appendix B18	35	EJAC	Commercial	Electrification of construction equipment at urban sites	Addressed via recently adopted regulation
Appendix B19	25	STAKEHOLDER	Transportation	Hybridization of medium and heavy-duty vehicles	No Change in Classification
		STAKEHOLDER	Cement	Cement (A): Energy efficiency of California cement facilities	
Appendix B20	26	EJAC	Industry	Relatively inexpensive energy savings measures with short pay back times for cement	Add as an EA
		EJAC	Low carbon fuels for cement production	Industry	
Appendix B21	--	EJAC	Cement	Cement (B): Blended cements	Add as an EA
		EJAC	Oil and Gas	Relatively inexpensive energy savings measures with short pay back times for fossil fuel power plants built prior to 1980	

TABLE 2. GHG REDUCTION STRATEGIES FURTHER EVALUATED BY THE ARB  
(continued)

SUMMARY NUMBER	TBL 1 EA ID	SOURCE	SECTOR	STRATEGY DESCRIPTION	DISPOSITION
Appendix B22	-	EJAC	Oil and Gas	Identify and implement energy efficiency measures at refiners that include, but are not limited to, conducting an energy audit	Evaluating for Scoping Plan
		EJAC	Oil and Gas	Recycle waste gases at refineries	
Appendix B23	-	EJAC	Oil and Gas	Energy efficiency measures at refineries	Evaluating for Scoping Plan
Appendix B24	-	EJAC	Commercial	Accelerate the replacement of cargo handling equipment at ports	Evaluating for Scoping Plan
Appendix B25	-	EJAC	Agriculture	Evaluate enclosed dairy barns as an additional strategy for the capture and combustion of methane emissions at dairies	Evaluating for Scoping Plan
Appendix B26	-	EJAC	Commercial	Composting - adopt South Coast and San Joaquin rules statewide	Evaluating for Scoping Plan
Appendix B27	-	EJAC	Electricity	Phase out pre-1990 power plants generating at least 100 MW and provide incentives to replace them with clean energy	Evaluating for Scoping Plan
Appendix B28	-	EJAC	Electricity	Prohibit fuel oil burning in pre-1990 power plants generating at least 100 MW	Evaluating for Scoping Plan
Appendix B29	32	EJAC	Oil and Gas	Refinery methane emissions	Evaluating for Scoping Plan
Appendix B30	-	CAPOCA	Commercial	Specifications for commercial refrigeration	No Change in Classification
		SCAQMD	Transportation	Accelerate introduction and deployment of light-duty vehicle (passenger) hybrid technology	Evaluating for Scoping Plan
Appendix B31	-	SCAQMD	Oil and Gas	Natural Gas requirement of 1360 Wobbe Index	Further Evaluation Required
Appendix B32	11	SCAQMD	Energy Efficiency	Cool communities program	No Change in Classification
Appendix B33	40	SCAQMD	Transportation	Strengthen light-duty vehicle standards	No Change in Classification
Appendix B34	-	SCAQMD	Transportation	Off Highway Recreational Vehicle (OHV) evaporative emissions control	Further Evaluation Required
Appendix B35	-	SCAQMD	Transportation	Determination of evaporative emissions from Pleasure Craft	Further Evaluation Required
Appendix B36	42	ARB	Transportation	Vessel speed reduction	No Change in Classification
Appendix B37	22	STAKEHOLDER	Transportation	Anti-idling enforcement	Add as an EA
Appendix B38	23	ARB	Commercial	SF <sub>6</sub> reductions from the non-electric sector	Add as a Discrete EA Measure
Appendix B39	12	ARB	Commercial	Reduction of high GWP GHGs used in consumer products	Add as a Discrete EA Measure
Appendix B40	31	ARB	Agriculture	Collaborative research to understand how to reduce GHG emissions from nitrogen land application	Add as an EA
Appendix C01	44	ARB EA REPORT	Agriculture	Stationary agricultural engine electrification	No Change in Classification
Appendix C02	13	ARB EA REPORT	Commercial	Reduction of perfluorocarbons (PFCs) from the semiconductor industry	Re-classify as a Discrete EA Measure
Appendix C03	38	ARB EA REPORT	Commercial	Foam recovery / destruction program	No Change in Classification
Appendix C04	9	ARB EA REPORT	Government	Guidance and protocols for local governments to facilitate GHG emission reductions	No Change in Classification
Appendix C05	10	ARB EA REPORT	Business	Guidance/protocols for businesses to facilitate GHG emission reductions	No Change in Classification
Appendix C06	36	ARB EA REPORT	Commercial	Reduce sulfur hexafluoride (SF <sub>6</sub> ) from electrical generation	No Change in Classification
Appendix C07	38	ARB EA REPORT	Commercial	Alternative suppressants in fire protection systems	No Change in Classification
Appendix C08	3	ARB EA REPORT	Forestry	Forestry protocol endorsement	No Change in Classification
Appendix C09	28	ARB EA REPORT	Transportation	Enforcement of federal ban on HFC release during service/dismantling of MV/ACs	No Change in Classification

- The potential emission reductions in 2010 (if any) and 2020 in terms of million metric tons of CO<sub>2</sub>-equivalent per year, including any co-benefits (e.g., reduction in emissions of criteria pollutants) or disbenefits (e.g., fuel penalty).
- The costs per MTCO<sub>2</sub>E and the total cost of implementation in 2010 (if applicable) and 2020 and the sectors that will bear the costs including any potential disproportionate impacts on small businesses or environmental justice sectors of the community. This discussion includes businesses or individuals (e.g., environmental justice community) that may be adversely impacted by the proposed strategy.
- The likely technical feasibility of the technology by describing the degree to which it or a similar technology has already been proven. If not applicable, the research/pilot studies that suggest the technological feasibility is likely to be within the next few years are cited.
- Additional considerations that pertain to the measure, such as if any other jurisdiction (state, county) has taken the action, whether the item falls under ARB jurisdiction or is a CAT strategy, whether ARB has legal authority, whether the item would be regulatory, when the item could be taken before the Board, and coordination with affected entities, trade associations, and/or government agencies.

#### Current State of Understanding

Appendices B and C include a complete listing of staff's analysis for each of the 63 recommendations / potential early actions listed in Table 2, exclusive of the landfill methane capture suggestion by the EJAC, which is already a discrete early action. Each summary has a unique identification number that is also listed in Table 2 for each measure; note that multiple measures may be addressed by the same summary.

The summaries in Appendices B and C represent ARB staff's current understanding of the ideas evaluated. It is acknowledged that in many instances, additional time, effort, and information are still needed for a more thorough compilation of all relevant and necessary information to support development as a regulation or other approach such as guidance.

Based on its current state of understanding, staff has made one of six recommendations for each measure it evaluated which are described below. One of these six recommendations is indicated for each of the strategies evaluated (see disposition column in Table 2).

- Previously Approved – No Change – applies to measures which were approved by the Board as early actions at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this early action is recommended.

- Previously Approved – Reclassify as a Discrete Early Action – applies to measures which were approved by the Board as early actions at its June 2007 hearing. Based on further evaluation by staff, it is recommended that this early action be reclassified as a discrete early action measure.
- Proposed Measure – Add as a Discrete Early Action – applies to measures which are recommended for addition to the list of discrete early action measures.
- Proposed Measure – Add as an Early Action – applies to measures which are recommended for addition to the list of early actions.
- Proposed Measure – Continue to Evaluate in Scoping Plan – applies to measures proposed at the June 2007 Board meeting which are recommended for further evaluation in the Scoping Plan. A draft Scoping Plan is expected by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering these recommendations.
- Proposed Measure – Further Evaluation Needed – applies to measures proposed that require further information and evaluation prior to recommending that they be pursued as early actions. As additional information becomes available staff will consider whether it supports recommending these strategies as additions to the Board's list of commitments for reducing greenhouse gas emissions.

### **RECOMMENDATIONS FOR ADDITIONAL EARLY ACTIONS**

The ARB staff is recommending that a total of 44 early actions be developed and brought to the Board for future consideration. These measures are recommended because staff's evaluation concluded that they are expected to yield significant GHG emission reductions, are likely to be cost-effective and technologically feasible, and can be brought back to the Board as full proposals in the 2007-2012 timeframe. Specifically, staff is recommending that 6 more discrete early actions be added to the list previously approved by the Board, two of which are new recommendations to be added to the list of those actions meeting the narrow definition of discrete early actions in that they are regulatory and will be enforceable by January 1, 2010. Furthermore, staff is recommending that 4 previously adopted early actions be reclassified as discrete early action measures. Cumulatively, these 44 total recommendations are expected to yield at least 42 MMTCO<sub>2</sub>E reductions by 2020, representing about 25% of the 2020 target.

#### **Summary of Items Reviewed**

Table 2 lists each of the items evaluated as potential early actions. It consists of the recommendations made by the EJAC, CAPCOA and the SCAQMD as well as additional strategies that were identified by stakeholders or ARB staff. Each of the strategies has been evaluated with the results of the evaluation presented in

Appendices B and C. The 'Summary ID' column of Table 2 cross-references each of these items to its summary in the appendices; the final disposition of each item is listed in the 'Disposition' column.

#### Items Addressed by Recently Adopted Regulations

The ARB recently adopted an off-road diesel rule<sup>4</sup> at its July 2007 Board hearing. This regulatory measure was not listed as an early action in the April 2007 ARB staff report. The regulation requires a reduction in off-road diesel engine particulate matter emissions, and is applicable to off-road engines such as those used by urban construction equipment. A possible way to achieve such pollutant reductions is via the electrification of construction equipment at urban sites. This particular example was submitted by the EJAC [refer to summary number B17 in Appendix B]; this recommendation is therefore encapsulated within the intent of a recently adopted regulation and was not further evaluated as part of the early action effort.

#### Measures Recommended as Additional Discrete Early Actions

The ARB staff's recommendations concerning the addition of discrete early actions are summarized below. In addition to these measures staff closely evaluated many other measures as potential discrete early action measures. However, for reasons such as the non-regulatory nature of a measure, its implementation timeline, and others, they are not recommended for addition to the list of discrete early action measures. Additional information, including the specific rationale for the disposition of each strategy evaluated, may be found in Appendices B or C and is summarized in Table 2.

*SF<sub>6</sub> Reductions in the Non-Electric Sector:* This measure is recommended as an additional discrete early action measure. The strategy involves the potential ban of SF<sub>6</sub> in non-utility, non-semiconductor applications where safe, cost-effective alternatives are available. These applications may include magnesium production and casting operations, air quality tracer gas studies, and face velocity tests for laboratory hoods. The staff will investigate other possible uses of SF<sub>6</sub> during the development of the regulations.

*Reduction of High GWP GHGs in Consumer Products:* This measure is recommended as an additional discrete early action measure. The strategy involves the reduction of high-GWP GHGs used as propellants in aerosol products, tire inflators, electronics cleaning, dust removal, hand held sirens, hobby guns (compressed gas), party products (foam string), and other formulated consumer products when viable alternatives are available. Some data regarding emissions of greenhouse gases are available from a recent survey of consumer products, which may represent possible reductions within the discrete early action timeframe. Manufacturers are also currently being surveyed to determine the extent of usage of high GWP gases in several more categories of consumer products. These future survey results may lead to additional strategies with

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<sup>4</sup> Staff report located at <http://www.arb.ca.gov/regact/2007/ordiesl07/isor.pdf>

emission reduction potential that can be pursued after the deadline for discrete early action items.

### Measures Recommended for Reclassification as Discrete Early Actions

The ARB staff's recommendations concerning the reclassification of pre-existing early actions are summarized below. Additional information, including the specific rationale for the disposition of each strategy evaluated, may be found in Appendices B or C and is summarized in Table 2.

*SmartWay Truck Efficiency:* This measure is recommended to be re-classified as a discrete early action measure. The strategy involves requiring existing trucks/trailers to be retrofitted with the best available "SmartWay Transport"<sup>5</sup> and/or ARB approved technology. Technologies that reduce GHG emissions from trucks may include devices that reduce aerodynamic drag and rolling resistance. Aerodynamic drag may be reduced using devices such as cab roof fairings, cab side gap fairings, cab side skirts, and on the trailer side, trailer side skirts, gap fairings, and trailer tail. Rolling resistance may be reduced using single wide tires or low-rolling resistance tires and automatic tire inflation systems on both the tractor and the trailer.

*Tire Inflation Program:* This measure is recommended to be re-classified as a discrete early action measure. The strategy involves actions to ensure that vehicle tire pressure is maintained to manufacturer specifications. Specifically, the strategy seeks to ensure that tire pressure in older vehicles is monitored by requiring that tires be checked and inflated at regular service intervals. One potential approach would be to require all vehicle service facilities, such as dealerships, maintenance garages, and smog check stations, to check and properly inflate tires. It is also anticipated that signage at fueling stations clearly indicate the availability of compressed air at no charge. Staff also recommends that the feasibility of conducting an extensive outreach program be investigated.

*Reduction of PFCs from the Semiconductor Industry:* This measure is recommended to be re-classified as a discrete early action measure. The strategy involves establishing a PFC emissions reduction goal and determining measures to achieve that goal. There are several approaches the industry has either employed or committed to continue evaluating to reduce PFC emissions from semiconductor production, including process optimization (optimizing the use of PFCs, such as in the chamber cleaning process), alternative chemistry

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<sup>5</sup> The United States Environmental Protection Agency (U.S. EPA) in collaboration with the freight industry has developed a voluntary program designed to increase energy efficiency while significantly reducing greenhouse gases and criteria pollutants. The program, known as the SmartWay Transport Partnership (SmartWay Transport), encourages trucking companies to use technologies that improve efficiency and reduce emissions. The SmartWay Transport also designates highly efficient and emission reduction technology packages as SmartWay Upgrade Kits which can be purchased at various SmartWay partner centers, dealerships, and service centers.  
(<http://www.epa.gov/otaq/smartway/documents/420f07027.htm>)



development, emissions abatement; and recovery/recycling (separation of fluorinated compounds from other gases for further processing and reuse).

*Green Ports:* This measure is recommended as an additional discrete early action measure. The strategy involves providing an alternative source of power for ships while they are docked. For example, the ships can use cables to receive electricity from the shore, thereby allowing them to shut off their auxiliary engines, reducing emissions of air pollutants. Staff proposes to present the draft regulation to the Board as a measure to reduce nitrogen oxides (NO<sub>x</sub>) and diesel particular (PM) emissions and to quantify the associated (carbon dioxide) CO<sub>2</sub> emission reductions. By focusing on NO<sub>x</sub> and PM reductions, staff will address the local and regional health impacts of ships docked in California's ports, including any disproportionate impacts those emissions may have on surrounding communities.

#### Measures Recommended as Additional Early Actions

The ARB staff's recommendations concerning the addition of early actions are summarized below. In addition to these recommendations staff closely evaluated many other measures such as a green ship incentive program, and refinery methane emission reductions. However, for reasons such as a substantial lack of available information, technological barriers, implementation timeline, and others, they are not recommended for addition to the list of early actions. Additional information, including the specific rationale for the disposition of each strategy evaluated, may be found in Appendices B or C and is summarized in Table 2.

*Refrigerant Tracking, Reporting, and Recovery Program:* This measure is recommended as an additional early action. The strategy involves the reduction of emissions of high GWP GHGs through establishing requirements for enhanced monitoring, enforcement, reporting, and recovery. It may be determined that more than one strategy is required to effectively address the sources of interest and that the strategy or strategies are likely to include both regulatory and non-regulatory elements. Such strategies could include:

- Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers: This consists of an assessment of the magnitude of the emissions from refrigerated shipping containers. Depending on results, the strategy may be similar to the one enforcing the federal ban on releasing refrigerants to the atmosphere from the servicing or dismantling of MVACS. After the recovery from a decommissioned container, it may be desirable to disable the refrigeration unit as well, which may require a regulation.
- Residential Refrigeration Program: This involves supporting existing voluntary programs to promote the upgrade of residential refrigeration equipment in need of repair, such as refrigerators and freezers. The program could potentially be expanded to include window unit air conditioners.

- High-GWP Refrigerant Tracking, Reporting, and Deposit Program: This strategy involves 1) expanding and enforcing the national ban on venting high-GWP GHGs (including fully emissive processes) during equipment/process lifetime; 2) requiring high-GWP GHG sales, use and energy use reporting as well as inspection and maintenance (I/M) and leak repair for equipment, cylinders, products, or systems with capacities above some CO<sub>2</sub>E threshold; 3) requiring technician certification for sales, purchase, transport, recovery, reclamation, resale, I/M; and 4) establishing a high-GWP GHG deposit program and/or fines for emissive processes or leaky systems.

*Cement (A): Energy Efficiency of California Cement Facilities*: This measure is recommended as an additional early action. The strategy involves reducing CO<sub>2</sub> emissions from fuel combustion, calcination, and electricity use by converting to a low-carbon fuel-based production, decreasing fuel consumption, and improving energy efficiency practices and technologies in cement production.

*Cement (B): Blended Cements*: This measure is recommended as an additional early action. The strategy to reduce CO<sub>2</sub> emissions involves the addition of blending materials such as limestone, fly ash, natural pozzolan and/or slag to replace some of the clinker in the production of Portland Cement. Currently, ASTM cement specifications allow for replacement of up to 5% clinker with limestone. Most manufacturers could in fact replace up to 4% with limestone. Caltrans allows for 2.5% average limestone replacement until testing of the long term performance of the concrete is complete. Caltrans currently has over \$1 million in task orders and is devoting considerable staff resources to the evaluation of limestone blending in cement. Caltrans also currently has standards for using flyash and slag in concrete. Other blending practices will be explored.

*Anti-idling Enforcement*: This measure is recommended as an additional early action. The strategy guarantees emission reductions as claimed by increasing compliance with anti-idling rules, thereby reducing the amount of fuel burned through unnecessary idling. Measures may include enhanced field enforcement of anti-idling regulations, increased penalties for violations of anti-idling regulations, and restriction on registrations of heavy-duty diesel vehicles with uncorrected idling violations.

*Collaborative research to understand how to reduce GHG emissions from nitrogen land application*: This measure is recommended as an additional early action. The strategy involves the identification of methodologies for better characterizing California's nitrogen cycle. An important first step to better characterizing the relationship between nitrogen land application and nitrous oxide formation in California agriculture, landscaping and other uses as well as opportunities for emission reductions is a collaborative research effort with stakeholders. The research is expected to focus on identifying optimal ways to reduce nitrous oxide emissions while increasing soil retention of nitrogen for plant uptake. As part of

the research the ARB will collaborate with the California Department of Food and Agriculture, Department of Pesticide Regulation, commodity groups, and other stakeholders. The research is expected to ultimately support the development of guidance to improve the characterization of nitrous oxide emissions from nitrogen land applications as well as identify effective strategies for emission reductions.

### Process Forward for Regulatory Items

All discrete early action measures and the majority of the other early actions will enter into the conventional regulatory development process. This process involves public workshops and the consideration of stakeholder input, followed by the formal regulation development, which includes a public hearing where the Board considers the staff recommendation. If the Board adopts the regulation or an amended regulation, then it must be reviewed and approved by the Office of Administrative Law (OAL) before becoming law. Though the non-regulatory strategies such as guidelines will not become binding mandates, they will go through a similar process of public participation. This open process ensures that the regulatory development of each strategy that the staff recommends to the Board is informed by the best and most up-to-date information.

### **ADDITIONAL CONSIDERATIONS / CAT STRATEGIES**

ARB has or will be adopting several strategies not discussed explicitly in this report that will yield significant GHG reductions by 2020. Most notably, the regulation that the Board adopted in response to AB 1493, which mandated the reduction of greenhouse gas emissions from passenger vehicles, is expected to account for 30 MMTCO<sub>2</sub>E by 2020. Other diesel PM, ozone-precursor, and State Implementation Plan (SIP) measures are also expected to have climate co-benefits whose magnitudes are yet to be determined.

In its April 2007 draft report entitled 'Climate Action Team Proposed Early Actions to Mitigate Climate Change in California', the CAT identified early actions external to the ARB that may yield up to 68 MMTCO<sub>2</sub>E reductions by 2020. In addition to ARB, members of the CAT have begun work on implementing many of the strategies outlined in the April 2007 draft report. Although not under statutory mandate to do so, the other CAT members expect to have several items implemented through regulations by January 1, 2010; these 13 strategies are expected to result in emission reductions of approximately 7 MMTCO<sub>2</sub>E with some reduction estimates still to be calculated. The same CAT members have also identified 41 additional measures for the post-2010 timeframe, which are expected to yield reductions in greenhouse gas emissions on the order of 61 MMTCO<sub>2</sub>E by 2020.

The ARB is in the process of developing a comprehensive Scoping Plan, due in late 2008, which will outline the multifaceted approach to meeting the 2020 emissions reduction target required by AB 32. The Scoping Plan will evaluate opportunities for sector-specific reductions, integrate synergistically all ARB and CAT early actions and additional GHG reduction measures, and define the role of any potential market mechanisms. The analyses of many potential GHG emission reduction strategies that

are not recommended as early actions are currently underway and will continue as part of the Scoping Plan development. Recommendations regarding the form of these additional GHG reduction measures (e.g. regulatory, non-regulatory, market-based) will be included in the Scoping Plan.

## **CONCLUSIONS / RECOMMENDATIONS**

At its June 2007 hearing, the Board asked staff to conduct additional analyses of stakeholder suggestions for early actions. Staff has completed this task as well as the further evaluation of additional potential early action measures, and recommends that the list of early action measures be expanded to 44. Nine of these strategies meet the AB 32 definition of discrete early action measures, which is three times the number of original discrete early action measures currently approved by the Board. The ARB recognizes that California must act quickly and decisively now to begin the long road to mitigating the most serious impacts of global warming, and is committed to pursuing the full list of 44 early actions.

The revised list of early actions as recommended by ARB staff is a more ambitious plan than originally proposed and is a complement to the actions of the Climate Action Team members and many other entities in California, the U.S., and the world who are acting now for climate protection. Discrete early action measures that will be in place and enforceable by 2010 include the original list of 3 strategies, plus an additional 6 measures in the transportation and commercial sectors. In addition, 5 new measures as suggested by stakeholders or staff analysis will also be pursued as early actions, but will be implemented post-2010 or are not necessarily regulatory in nature. Cumulatively, all 44 early actions have the potential for reductions of 42 MMTCO<sub>2</sub>E by 2020.

The revised early action plan is a comprehensive framework of regulatory and non-regulatory elements that will result in significant and effective GHG emission reductions. The revised early action plan will receive public input at a September 17, 2007 workshop and will be considered by the Board at its October 25-26, 2007 hearing. If approved, each early action will be developed through an open public process.

## **GLOSSARY OF TERMS AND ACRONYMS**

**AB 32** – Assembly Bill 32, the Global Warming Solutions Act of 2006

**ARB** – Air Resources Board

**CAPCOA** – California Air Pollution Control Officers Association

**CAT** – Climate Action Team, a committee of multiple state agencies led by the Secretary of Cal/EPA

**CO<sub>2</sub>** – carbon dioxide; a byproduct of fossil fuel combustion, cement production, and other natural processes

**Discrete Early Actions** – Greenhouse gas reduction measure underway or to be initiated by ARB that meets the AB 32 legal definition as identified by the Health and Safety Code Section 38560.5. Discrete early actions are regulations to reduce greenhouse gas emissions adopted by the Board and enforceable by January 1, 2010.

**Early Actions** – Greenhouse gas reduction measures underway or to be initiated by ARB in the 2007 – 2012 timeframe. These measures may be regulatory or non-regulatory in nature.

**EJAC** – Environmental Justice Advisory Committee

**GHG** – greenhouse gas or gases; defined in AB 32 as including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride; also known as “the Kyoto six”

**GWP** – global warming potential, the relative warming of a greenhouse gas as compared to carbon dioxide which has a GWP of 1.0.

**HFCs** – Hydrofluorocarbons; a class of compounds whose molecules consist of carbon, hydrogen, and fluorine atoms typically used in air conditioning systems and as propellants

**HSC** – (the California) Health and Safety Code

**LCFS** – Low Carbon Fuel Standard

**MMTCO<sub>2</sub>E** – million metric tons (of) carbon dioxide equivalent (gases)

**MVAC** – motor vehicle air conditioning (systems)

**OAL** – California Office of Administrative Law

**OHRV** – Off Highway Recreational Vehicle

**PFCs** – perfluorocarbons, a class of compounds derived from hydrocarbons by replacement of hydrogen atoms by fluorine atoms. PFCs are made up of atoms of carbon, fluorine, and/or sulfur, and are mostly used in the semi-conductor industry

**SCAQMD** – South Coast Air Quality Management District

**SF<sub>6</sub>** – sulfur hexafluoride; a highly stable non-conducting chemical used for and emitted from various industrial processes and in the manufacturing of electrical circuitry

## **APPENDIX A – EJAC, CAPCOA, and SCAQMD Recommendations**

**ARB Discrete Early Action Measures  
as proposed by  
the Environmental Justice Advisory Committee on the Implementation of the  
Global Warming Solutions Act of 2006**

Number	Description
1	Improved landfill methane capture
2	Require HFC-134a reductions through evaluation of refrigerants in de-commissioned or stored cargo containers, commercial and residential HVAC system leakage, auto dismantling/crushing facilities (i.e., requiring HFCs be removed from cars prior to scrappage)
3	Manure management <sup>1</sup>
4	Reduce venting/leaks from oil and gas systems
5	Heavy-duty vehicle emissions, efficiency improvements <sup>2</sup>
6	Cool automobile paints <sup>3</sup>
7	Port electrification
8	Transportation refrigeration, electric standby
9	Truck stop electrification with incentives for truckers
10	Tire inflation program
11	Require low GWP refrigerants for new MVACs <sup>4</sup>
12	Add AC leak tightness test and repair to Smog Check
13	Wafflemat system for concrete slab foundations
14	Demonstrate use of shoreside generators as bridge to electrical hook-up
15	Green ship incentive program
16	Anti-idling requirement for cargo handling equipment at ports
17	Require the electrification of airport ground support equipment
18	Require the electrification of construction equipment at urban sites
19	Adopt a regulation and or incentive program to take advantage of emerging hybrid technology for medium duty delivery trucks
20	Relatively inexpensive energy savings measures with short pay back times for cement industry
21	Explore a greenhouse gas and mercury emission performance standard for cement facilities equivalent to the level achievable through conversion from coal to natural gas
22	Relatively inexpensive energy savings measures with short pay back times for fossil fuel power plants built prior to 1980 <sup>5</sup>
23	Relatively inexpensive energy savings measures with short pay back times for refineries <sup>6</sup>
24	Accelerate the replacement of cargo handling equipment at ports <sup>7</sup>
25	Enclose dairy barns to capture methane <sup>8</sup>
26	Adopt South Coast and San Joaquin rules on enclosed composting facilities statewide <sup>9</sup>
27	Establish necessary rules and or emissions thresholds for transmission to local Air Districts for the phase out, by 2010, of power plants built prior to 1980 that generate over 100 MW of electricity and provide incentives for clean energy production in their place <sup>10</sup>
28	Prohibit fuel oil burning for base load generation of electricity in facilities 100 MW or greater and built prior 1980 <sup>11</sup>
29	We recommend CARB undertake and adopt regulatory measures that require recycling of waste gases at refineries instead of dumping or incinerating them <sup>12</sup>
30	Adopt regulatory measures to eliminate the methane exemptions granted to refineries and require methane control measures at refineries <sup>13</sup>



31	Identify and implement energy efficiency measures at refineries that include, but are not limited to, conducting an energy audit. This audit shall consider and address, at least: a) Use of clean, renewable energy for refinery electricity consumption b) The impact of heavier crude oil modifications on GHG emission c) Other energy efficiency measures <sup>14</sup>
32	We recommend CARB undertake and adopt regulatory measures that require recycling of waste gases at oil production sites instead of dumping or incinerating them <sup>15</sup>
33	Adopt regulatory measures to eliminate the methane exemptions granted to oil production sites and require methane control measures at oil production sites <sup>16</sup>
34	Identify and implement energy efficiency measures that include, but are not limited to, conducting an energy audit at oil production sites. This audit shall consider and address, at least: a) Use of clean, renewable energy for oil production site electricity consumption b) Other energy efficiency measures. <sup>17</sup>

#### Early Action Measures to be Forwarded by ARB to the CAT Team

The Committee recommends that all CAT agencies with jurisdiction in the area of energy generation, procurement, siting, permitting, rate-setting and renewable energy deployment in both electricity and transportation sectors, conduct the following:

- 1) Quantify and publicly provide the air emission and cumulative impacts of new power plant construction in CA and report to CARB the implications for the achievement of the state's climate and air quality goals;
- 2) Require proponents of new power plant construction to conduct a thorough and robust renewable energy alternatives assessment. If a more carbon-beneficial combination of energy producing or saving sources is available, then the utility should be required to pursue that avenue. This process should begin with all currently approved and expected power plants;
- 3) Report to CARB on the progress of existing renewable energy deployment programs and identify obstacles to the achievement of the state's renewable energy goals;
- 4) Perform an audit, to be publicly available, of existing and planned low-income rate assistance, energy efficiency, solar, and green building programs and identify barriers that impede local community participation.

**Note: The Committee supports electrification of engines when coupled with efforts to increase use of clean, renewable energy sources such as wind and solar.**

<sup>1</sup> During the development of this measure ARB must identify methods that would eliminate the NOx emissions which result from this technology in order to comply with the prohibition in AB 32 against backsliding on criteria pollutants.

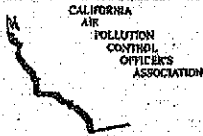
<sup>2</sup> Particularly promising avenues include requiring or incentivizing: Use of wide base tires, Use of automatic tire inflation systems, Use of low viscosity lubricants, Improving freight logistics, and Pursuit of hybrid truck technology. ARB should undertake a complete life cycle analysis before suggesting use of fuel additives.

<sup>3</sup> Any regulation developed would have to ensure that the new paint formulations did not cause backsliding on criteria pollutants.

<sup>4</sup> Any chosen replacements must first undergo a complete life cycle analysis and multi-media toxicity analysis.



# CAPCOA



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## EC. DIRECTOR

vin D. Zeldin  
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May 14, 2007

Ms. Catherine Witherspoon  
Executive Officer  
California Air Resources Board  
1001 I Street  
P.O. Box 2815  
Sacramento, CA 95812

Re: Proposed Early Action Measures Under AB 32

Dear Ms. Witherspoon,

The California Air Pollution Control Officers Association is writing to support your efforts to identify discrete early action measures to help secure the earliest possible reductions in greenhouse gas emissions, and to urge you to include additional measures and timeframes in your final proposal. We also would like to offer the support and resources of local air districts in developing and implementing early action measures.

Local air districts recognize the critical importance of early reductions to delay the approach of a climate change "tipping point" and to effect a meaningful slowing of the process of climate change. We also recognize the extraordinary resource demands facing the ARB as you implement the requirements of AB 32. We believe that by relying on local air districts for specific tasks, the ARB will be able to reserve crucial resources for those activities that should be developed and implemented centrally.

CAPCOA supports the inclusion of the measures listed in the ARB's April 20, 2007 draft proposal. We believe additional measures can and should be identified as Group 1 measures. We also believe that more specific time frames should be included for measures in Group 2 and Group 3. Most importantly, we believe there are existing processes and programs that can be effectively leveraged for early reductions of greenhouse gases, and we urge you to include specific tasks and milestones for them in your final list of measures.

The local districts understand the difficulties identifying specific measures that can be adopted and implemented in the short time period called for in AB 32. We recommend actions in five key areas that ARB can take to secure these reductions quickly and without investing significant additional resources.

✱

**Recommendation 1: Prioritize SIP rulemaking.** CAPCOA recommends that ARB review proposed SIP measures and rank them on the basis of criteria pollutant reductions, public health protection, and greenhouse gas reduction potential. Rules that rank high in all three areas should be given higher priority in the rulemaking calendar. This additional review will not add substantially to workload already planned, but will define GHG reductions that can be achieved in the near term without compromising progress towards clean air or undermining protection of public health.

**Recommendation 2: Review Existing Rules.** CAPCOA recommends that you perform a review of existing state and local rules, similar to an "All Feasible Measures" review that would identify existing rules that, whether expressly intended or not, result in significant reductions of GHGs. Rules that are so identified could be more quickly adapted for statewide implementation and adopted by the ARB. Some local districts have already adopted and implemented regulations intended to reduce GHG emissions; many others have regulations for criteria pollutants which, by virtue of the way the rules are structured, also secure significant collateral GHG reductions. We believe that with a modest investment of resources, perhaps relying on a contractor who could work with a CAPCOA committee, ARB could identify rules with potential for statewide GHG reductions. Because these rules have already been adopted and implemented, much of the preparatory work has been done and the feasibility and costs are well documented; this should shorten both the time and resources needed for state rulemaking. CAPCOA has already begun this review and we look to share initial results with you in the near future.

CAPCOA also recommends that ARB use a focused workgroup process (which you have already discussed with us) to tap district staff resources and expertise with specific source categories to identify discrete early reductions that could be achieved in each category. We believe this process could identify early reduction potential in the six categories ARB has identified for reporting and rulemaking, and could be used to accomplish some of the necessary steps to speed adoption by the ARB. The workgroup process could also be used to build on the review of local regulations (described above) and identify opportunities for additional reductions of greenhouse gases within the existing air pollution program structure. Some local districts have already begun this review and others plan to begin soon. CAPCOA believes such a coordinated workgroup process could identify potential GHG reductions and secure them in the near term through local rule amendments that implement a consistent statewide standard – similar to a suggested control measure. We recommend that this process be included in your final list, and would be happy to work with you in defining an appropriate schedule and associated emission reduction potential.

**Recommendation 3: Minimize Impacts of New Stationary Sources.** CAPCOA recommends that ARB work with the districts to develop a coordinated approach to reviewing greenhouse gas emissions from significant stationary sources in categories that also emit significant amounts of GHGs. As you know, the most environmentally effective and cost effective emission reductions are those implemented before a project is built. The challenge of reaching the 1990 baseline will be easier to meet if we ensure that economic growth occurs along the path of least climate impact. Local air districts already require permits and preconstruction review for such sources, which provides an efficient and effective platform to identify and address GHG emissions from new or modified sources in categories of concern. ARB could establish a general framework for including a review of GHG emissions in the local permitting process. The framework should also identify appropriate local, regional, or global mitigation strategies. This process would be analogous to the development of review programs for toxic air contaminants in the late 1980s and early 1990s. In fact, because of district obligations under CEQA, districts may be required to address GHG emissions associated with new permits regardless of any action by ARB. The outcome would be better coordinated with ARB participation at the outset to identify the scope of the review and the mitigations to be considered.

**Recommendation 4: Leverage CEQA Mitigations.** CAPCOA recommends that ARB work with local districts to coordinate approaches to the review of GHGs under CEQA and capture the reductions that result from mitigation. Local air districts routinely review the impacts of a variety of development projects under CEQA. Local governments are currently contacting air districts with questions about how to incorporate climate change and address GHG emissions of projects, and are seeking specific guidance on GHG significance thresholds for projects. CAPCOA's Climate Protection Committee and Planning Managers Committee are working on this now, and we would like to include ARB staff in this effort. We believe that a focused effort to identify thresholds and mitigation measures could result in practical reductions in the near term through the CEQA process. We recommend that ARB include timelines and commitments to such a process on the early action measures list, and we would be happy to work with you on an appropriate schedule and associated emission reduction potential.

**Recommendation 5: Capture Voluntary Reductions.** CAPCOA recommends ARB work with local districts to establish mechanisms to promote, track, verify, and capture voluntary reductions in GHGs. As you are well aware, there is tremendous interest in voluntary reductions on the part of business, local government, and the general public. CAPCOA believes this interest should be aggressively pursued. Many local air districts are already working with local stakeholders to identify and organize voluntary reduction efforts. CAPCOA also has a Climate Protection Committee that is tasked, among other things, with compiling voluntary reduction strategies and other materials to support individual districts in this area. We suggest ARB work with us to compile information, and that ARB rely on local districts to help form your reporting, verification, and tracking structure for early reduction efforts. We believe ARB should include milestones for implementing this in your final list of measures, and will work with you to identify associated emission reduction targets.

#### Summary

In closing, CAPCOA applauds ARB's efforts to identify and secure early reductions of greenhouse gases under AB 32. We urge you to include additional Group 1 early action measures on your final list, and to establish time frames for the measures in Group 2 and Group 3. We specifically recommend that ARB 1) prioritize SIP reductions to maximize collateral GHG reductions, 2) review existing local rules to identify potential statewide measures or local enhancements, and use district resources in workgroup efforts on specific source categories with significant GHG emissions, 3) coordinate with districts on a strategy to use existing permit programs to review and mitigate greenhouse gases from significant stationary sources, 4) coordinate with districts on review and mitigation of GHGs under CEQA, and 5) rely on local air district resources to implement early reductions through coordinated voluntary programs.

Thank you for your consideration of our recommendations.

Sincerely,



Larry R. Allen  
President



## South Coast Air Quality Management District

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May 7, 2007

Via email

Mr. Bart Croes  
Division Chief  
California Air Resources Board  
1001 I Street  
Sacramento CA 95812

Re: Proposed Early Actions to Mitigate Climate Change in California

Dear Mr. Croes:

Thank you for the opportunity to comment on the State's Proposed Early Actions to Mitigate Climate Change in California. This effort will contribute significantly to the overall strategy to reduce greenhouse gases in the state. The following comments are offered for your consideration.

The report includes 3 tables: Table 1, Group 1 – Early Action Measures; Table 2, Group 2 – Additional GHG Reduction Measures Underway or Initiated by ARB in 2007 – 2009 Period; and Table 3, Group 3 – ARB Air Pollution Controls for 2007 – 2009 Adoption with Potential GHG Reductions or Other Climate Co-Benefits. Relative to the measures in Group 1, which will be adopted and implemented by January 1, 2010, SCAQMD staff recommends including a measure to accelerate hybrid penetration, as this technology is already well developed and readily available. At a minimum, this measure should be added to Group 3 if it is not added to Group 1. In addition, the measure on Low Carbon Fuel Standard (1-1) needs to be evaluated in light of the recent Stanford study regarding potential negative implications of E-85.

For Group 2, it would be very helpful for CARB staff to identify years for adoption and implementation for each measure to enable a better sense of priority. Providing preliminary information for potential reductions would also help to understand these measures and their relative benefits. Measure 2-16, Port Electrification should be moved to Group 3 as part of the port measures. There are also several measures that SCAQMD staff would like to see adopted by 2009, not just underway or to be initiated. These are measures 2-9 - Energy Efficiency, 2-13 – Transportation (light-duty vehicle standards), and 2-14 – Transportation (heavy-duty vehicle emission reductions and efficiency improvements).

For Group 3, there are SIP measures in the SCAQMD 2007 Air Quality Management Plan that should be added:

- Evaporative Emission Standards for Recreational Boats and Off-Road Recreational Vehicles; and
- Auxiliary Ship Engine Cold Ironing.

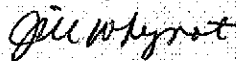
In addition, CARB staff should consider adding one of the SCAQMD measures in the 2007 Air Quality Management Plan – Accelerated Use of Plug-In Hybrids for Light- and Medium-Duty Vehicles, if it is not added to Group 1.

The report also includes tables in Attachment A with the status of assignment to Groups 1, 2, or 3, or deferred to the Scoping Plan. Sixteen of the 24 items in the table are deferred to the Scoping Plan, which is not due for another 18 months. SCAQMD staff recommends that work on these concepts be initiated right away so emission reductions can be realized as soon as possible.

SCAQMD staff also concurs with comments made at the April 30<sup>th</sup> Environmental Justice Advisory Committee meeting that the report could be improved by adding information on the more than 70 proposals received and the reasons why many ideas were not included in this report.

Thank you again for the opportunity to contribute to this important policy document. If you have any questions or would like to discuss this further, please call me at (909) 396-3104 or Elaine Chang at (909) 396-3186.

Sincerely,



Jill Whynot  
Planning and Rules Manager

EC:JW

cc: Alberto Ayala, CARB  
M. Robert, CARB



## South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

May 9, 2007

*Via email*

Mr. Bart Croes  
Division Chief  
California Air Resources Board  
1001 I Street  
Sacramento CA 95812

Re: Additional SCAQMD Comment - Proposed Early Actions to Mitigate Climate Change in California

Dear Mr. Croes:

South Coast Air Quality Management (SCAQMD) staff sent comments on May 7, 2007 regarding the Proposed Early Actions to Mitigate Climate Change in California. We have an additional comment that CARB staff should consider for inclusion.

An early action measure should be added to require that natural gas supplies for the state be at a Wobbe index of 1360 or lower. As you know, higher carbon content will result in increased carbon dioxide emissions. It is possible to achieve this level by securing natural gas sources with low Btu content, removing heavier hydrocarbon components by a condensing process, injection of inert gas such as nitrogen, and blending high Btu gas with low Btu gas. This would have concurrent nitrogen oxides benefits, as well. Please see control measure #2007CMB-04 in the draft 2007 Air Quality Management Plan for additional information.

Thank you for considering this addition to the early action list. If you have any questions or would like to discuss this further, please call me at (909) 396-3104 or Elaine Chang at (909) 396-3186.

Sincerely,

Jill Whynot  
Planning and Rules Manager

EC:JW

cc: Alberto Ayala, CARB  
M. Robert, CARB

*Cleaning the air that we breathe...*



Will ~~not~~ <sup>not</sup>  
07-7-4

Suggested Changes to Early Action Measures  
by SCAQMD Staff  
June 21, 2007

Add New Group 1 (Early Action Measures)

- Accelerate hybrid penetration
- Wobbe index  $\leq$  1360 for natural gas

Group 2 Measures (underway or to be started in 2007 – 2009)

- Add specific adoption and implementation dates
- 2-9 Energy Efficiency adopt by 2009
- 2-13 Transportation (LD) adopt by 2009
- 2-14 Transportation (HD) adopt by 2009
- 2-16 Port Electrification adopt by 2009

Add to Group 3 Measures (adopt 2007 – 2009)

- Evaporative Emission Standards for Recreational Boats and Off-Road Recreational Vehicles
- Auxiliary Ship Engine Cold Ironing
- Accelerated Use of Plug-In Hybrids (if not added to Group 1)

Consider Other Measures Suggested by CARB  
Environmental Justice Advisory Group

**APPENDIX B – Staff Evaluation of Stakeholder  
Recommendations / Additional Strategies**

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Appendix B01	CAPCOA recommendations	B- 3
Appendix B02	Refrigerant tracking, reporting and recovery program	B- 5
Appendix B03	Manure digester protocol for calculating greenhouse gas mitigation	B- 13
Appendix B04	Reduce methane venting/leaks from oil and gas systems	B- 15
Appendix B05	SmartWay truck efficiency	B- 18
Appendix B06	Cool paints for automobiles	B- 22
Appendix B07	Green ports	B- 26
Appendix B08	Transport refrigeration units, electric standby	B- 31
Appendix B09	Truck stop electrification with incentives for truckers	B- 34
Appendix B10	Tire pressure program	B- 38
Appendix B11	Requirement of low-GWP GHGs for new MACS	B- 41
Appendix B12	Addition of AC leak test and repair requirements to Smog Check	B- 45
Appendix B13	WAFFLEMAT Systems	B- 48
Appendix B14	Green ship incentive program	B- 51
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Appendix B17	Electrification of construction equipment at urban sites	B- 58
Appendix B18	Hybridization of medium and heavy-duty vehicles	B- 59
Appendix B19	Cement (A): Energy efficiency of California cement facilities	B- 65
Appendix B20	Cement (B): Blended cements	B- 69
Appendix B21	Relatively inexpensive energy savings measures with short pay back times for fossil fuel power plants built prior to 1980	B- 72
Appendix B22	Identify and implement energy efficiency measures at refiners that include, but are not limited to, conducting an energy audit	B- 76
Appendix B23	Accelerate the replacement of cargo handling equipment at ports	B- 78
Appendix B24	Evaluate enclosed dairy barns as an additional strategy for the capture and combustion of methane emissions at dairies	B- 80
Appendix B25	Composting – adopt South Coast and San Joaquin rules statewide	B- 83
Appendix B26	Phase out pre-1980 power plants generating at least 100 MW and provide incentives to replace them with clean energy	B- 85
Appendix B27	Prohibit fuel oil burning in pre-1980 power plants generating at least 100 MW	B- 91
Appendix B28	Refinery methane emissions	B- 94
Appendix B29	Specifications for commercial refrigeration	B- 96
Appendix B30	Accelerate introduction and deployment of light-duty vehicle (passenger) hybrid technology	B- 101
Appendix B31	Natural Gas requirement of 1360 Wobbe Index	B- 103
Appendix B32	Cool communities program	B- 106
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Appendix B34	Off Highway Recreational Vehicle (OHRV) evaporative emissions control	B- 112
Appendix B35	Determination of evaporative emissions from Pleasure Craft	B- 114
Appendix B36	Vessel speed reduction	B- 116
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Appendix B38	SF6 reductions from the non-electric sector	B- 123
Appendix B39	Reduction of high GWP GHGs used in consumer products	B- 126
Appendix B40	Collaborative research to understand how to reduce GHG emissions from nitrogen land application	B- 128

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B01*  
ID NUMBER:        *N/A*  
TITLE:                *CAPCOA RECOMMENDATIONS*  
PROPONENT:       *CALIFORNIA AIR POLLUTION CONTROL OFFICERS*  
                             *ASSOCIATION (CAPCOA)*

## 2. Staff Recommendation

Work with CAPCOA to pursue its recommendations. The proposed CAPCOA working group can provide input into the development of the scoping plan for AB 32. Other recommendations could help in quantifying greenhouse gases reductions.

## 3. Action Description

CAPCOA makes five recommendations. These recommendations can support identification and quantification of greenhouse gas reductions as we proceed on AB 32 implementation.

### *PRIORITIZE SIP RULEMAKING*

CAPCOA recommends that ARB's SIP rulemaking be ranked taking into consideration greenhouse gas emissions. The requirements of the federal Clean Air Act dictate that we proceed expeditiously with the measures needed to meet ozone and PM2.5 standards. The most critical near-term SIP rulemakings are already underway and all must be considered top priorities in order to meet federal deadlines. However, as we develop new longer-term SIP measures we will look for opportunities to reduce both criteria pollutants and greenhouse gases.

### *REVIEW EXISTING RULES*

CAPCOA recommends a workgroup process that taps district resources and expertise to identify potential greenhouse gas reductions that could be achieved consistently statewide through local rulemaking. This would be similar to the "suggested control measure" approach that has been used for criteria pollutants. We propose to work with CAPCOA to initiate this process to support development of the AB 32 scoping plan.

### *MINIMIZE GHG IMPACTS OF NEW STATIONARY SOURCES*

CAPCOA recommends that ARB work with local air districts to minimize impacts of new stationary sources. It suggests a coordinated approach to reviewing significant stationary sources in categories that also emit significant amounts of greenhouse gases.

The local permitting process and the environmental review (CEQA) process are suggested as possible mechanisms for achieving GHG emissions mitigation.

Staff suggests a joint effort to identify stationary source technologies for new sources that would reduce both criteria pollutant and greenhouse gases. This could include promoting development of new technologies that achieve multiple benefits.

#### ***LEVERAGE CEQA MITIGATIONS AND CAPTURE VOLUNTARY REDUCTIONS***

CAPCOA recommends that ARB work with local air districts on approaches to the review of greenhouse gas impacts under the California Environmental Quality Act (CEQA) process, including GHG significance thresholds for projects, and to develop a process for the capturing of reductions that result from CEQA mitigations.

The Governor's Office of Planning and Research is charged with providing statewide guidance on CEQA implementation. With respect to quantifying any reductions that result from project level mitigation of greenhouse gas emissions, we would like to see air districts take a lead role in tracking such reductions in their regions.

#### **4. Potential Emission Reductions**

To be estimated during scoping plan development or rulemaking process.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

To be assessed during scoping plan development or rulemaking process.

#### **6. Technical Feasibility**

To be assessed during scoping plan development or rulemaking process.

<b>8. Division:</b>	Planning and Technical Support Division
<b>Staff Lead:</b>	Jeff Weir
<b>Section Manager:</b>	Ravi Ramalingam
<b>Branch Chief:</b>	Kurt Karperos

#### **9. References:**

*Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan, April 26, 2007.*

## Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

### 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B02*  
ID NUMBER:         *NA*  
TITLE:                *REFRIGERANT TRACKING, REPORTING AND  
RECOVERY PROGRAM  
(REFRIGERANT RECOVERY FROM DECOMMISSIONED  
REFRIGERATED SHIPPING CONTAINERS, RESIDENTIAL  
REFRIGERATION PROGRAM, HIGH-GWP  
TRACKING/REPORTING/REPAIR/DEPOSIT PROGRAM)*  
PROPONENT:        *STAKEHOLDER SUGGESTION- ENVIRONMENTAL JUSTICE  
ADVISORY COMMITTEE, ARB STAFF*

### 2. Staff Recommendation

This combination of measures is recommended for addition to the list of early actions. The Board date for consideration of these items is anticipated in 4<sup>th</sup> quarter of 2011. It is presented as one strategy given the interrelated objective, which is to reduce emissions of high-GWP GHGs through establishing requirements for enhanced monitoring, enforcement, reporting, and recovery. It may be determined that more than one strategy is required to effectively address the sources of interest and that the strategy or strategies are likely to include both regulatory and non-regulatory elements.

### 3. Early Action Description

Below is a brief description of potential approaches for addressing each of the source categories considered. Staff will explore the most efficient opportunities for achieving the largest reductions from the below categories which may translate into a single or multiple strategies.

**Refrigerant Recovery from Decommissioned Shipping Containers:** This action consists of an assessment of the magnitude of the emissions from refrigerated shipping containers. Depending on results, the strategy may be similar in scope to the measure aimed at enforcing the federal restrictions on refrigerant venting during servicing or dismantling of motor vehicle air conditioning systems (MVACS). After the recovery from a decommissioned container, it may be desirable to disable the refrigeration unit, which may require a regulation. Enforcement personnel and federal and local air management district assistance would be needed.

**Residential Refrigeration Program:** This involves supporting existing voluntary programs to promote the upgrade of pre-2000 residential refrigeration equipment in need of repair, such as refrigerators and freezers. The program could potentially be expanded to include window unit air conditioners (A/Cs); upgraded HVAC units are not

recommended, as the costs are likely significant and would disproportionately impact lower-income people.

A statewide effort to support programs for expanding the upgrading of old appliances to Energy Star efficiencies or better should be coordinated with various local utilities' voluntary programs and the US EPA's RAD program<sup>1</sup>. Given the utilities lead role in such programs, the ARB's role would be expected to consist of enhancing its outreach efforts to underscore the benefits of participating in such programs. This program could also be coordinated with a foam recovery program, especially if automated recovery of refrigerant, foam, and scrap metal is implemented.

This program will likely result in an increased number of refrigerators entering the waste stream that will need to be properly recycled to achieve GHG emission avoidance. However, if all waste refrigerant, foam, and other materials are properly recycled/destroyed, direct GHG emissions avoidance benefits may be significant, as well as indirect GHG emissions avoidance due to energy efficiency gains<sup>2</sup>.

Part of the residential refrigeration program includes a strategy to be developed in collaboration with the US EPA to enhance the enforcement of end-of-life (EOL) recovery of refrigerant<sup>3</sup>.

Insulation foam contained in residential appliances will be addressed in another strategy, but there may be some overlap between refrigerant and foam recovery for appliances if the entities involved in manual refrigerant removal (which requires US EPA technician certification) are also able/willing to perform manual foam removal on appliances at end-of life (EOL).

The proposed measure will be voluntary, and ARB's role will be to promote replacement through coordination/outreach efforts with the utilities, the US EPA, and the California Energy Commission (CEC), which will enhance public awareness of energy savings and GHG benefits associated with the program.

For maximum effectiveness, this program will also have to be coordinated with ARB's planned end-of-life enforcement and foam recovery measures to ensure that old residential appliances are properly disposed of and high global warming potential (GWP) refrigerants/foams are properly recovered/recycled or destroyed.

**High-GWP Tracking/Reporting/Repair/Deposit Program:** This strategy involves the following: 1) expanding and enforcing the national ban on venting high-GWP GHGs (including fully emissive processes) during equipment/process lifetime; 2) requiring high-

<sup>1</sup> <http://www.epa.gov/ozone/snap/emissions/radp.html>

<sup>2</sup> Dave Godwin, USEPA, personal communication, 7/06.

<sup>3</sup> The CFC-12 refrigerant/CFC-11 foam blowing agent combination was used for many years in residential refrigerators and freezers, and phaseout of HCFC-141b from appliance foam has only been occurring in the past four years. New refrigerators and freezers generally contain HFC-134a as the refrigerant and HFC-245fa as the foam blowing agent. Currently, ODS recovery is mandated by federal law, and venting HFCs is forbidden, but enforcement is weak and venting is not well-defined. Additionally, EOL technician certification for recovery/reclamation is only required for ODSs and is subject to little oversight/enforcement; the EOL recovery regulation would extend the certification requirement to other high-GWP GHGs and would call for additional oversight/enforcement at transfer stations, landfills, and other disposal facilities.

GWP GHG sales, use and energy use reporting as well as inspection and maintenance (I/M) and leak repair for equipment, cylinders, products, or systems with capacities above some CO<sub>2</sub>E threshold; 3) requiring technician certification for sales, purchase, transport, recovery, reclamation, resale, I/M; and 4) establishing a high-GWP GHG deposit program and/or fines for emissive processes or leaky systems.

Currently, Section 608 of the CAAA limits intentional venting of ODSs and HFCs, requires record keeping for systems employing more than 50 lbs of an ODS, and requires technician certification for ODS systems (I/M, repair, recovery, reclamation). High-GWP GHG sales are only restricted to ODSs in cylinders (not pre-charged equipment); the sales restriction does not apply to HFCs.

Reporting, in addition to record-keeping for ODS systems > 50 lbs, is required in SCAQMD (Rule 1415), and it is proposed that ARB implements a high-GWP GHG reporting requirement rather than record-keeping only. Reporting would be for any high-GWP GHG above a specified CO<sub>2</sub>E threshold (extending beyond ODSs). The permanent reporting protocol could apply to any high-GWP GHG bought, sold, or used, by any manufacturer, retailer, distributor, repair person/technician, auditor, facility/corporate parent. Production plus imports into California (gas in cylinders or as an equipment charge) can be checked against use and exports out of California for mass balance purposes.

High-GWP GHG sales will be restricted to certified technicians (i.e., consumers cannot not buy cans or cylinders of high-GWP GHGs over some threshold value), which differs from current federal law which only limits sales of ODSs to certified technicians (except for ODS refrigerants contained in air conditioners and refrigerators).

The deposit program could apply to cylinders (raw chemical) or pre-charged equipment (such as refrigerators, A/Cs, vending machines, etc.)<sup>4</sup>. Furthermore, fines could be assessed based on annual use reporting and auditing for systems above some CO<sub>2</sub>E threshold. Reporting will have little to no impact on leaking/emissive equipment if there are not financial disincentives in excess of refrigerant costs (i.e., the deposit or fine should cost more than refrigerant needed to recharge a leaky system, so that leaks are promptly fixed).

Deposit/return and/or fine programs would encourage leak-tightness and recovery of high GWP GHGs, as well as encourage upgrading of old, leaky equipment. A similar program has been adopted in Australia, and industry groups are voluntarily considering a deposit/return program in the US.

Adoption of this measure will require a blend of regulatory/non-regulatory approaches, as it will extend current regulations and also require a collaborative effort with the US EPA to enforce what is already established by law.

#### **4. Potential Emission Reductions**

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<sup>4</sup> Consumer goods would be more difficult to subject to deposit and return since they are intended to be fully emissive, but it is believed that purchases over a given CO<sub>2</sub>E limited to certified technicians will inhibit consumers from buying more than small numbers of product.



**Refrigerant Recovery from Decommissioned Shipping Containers:** There is insufficient data on the emissions from this source. For the decommissioned shipping containers, it is estimated that the HFC-134a refrigerant bank at end-of-life could be approximately 15,000 MTCO<sub>2</sub>E per year in the area surrounding the Ports of Long Beach and Los Angeles. This is based on the estimated Los Angeles-Long Beach fraction of world shipping container activity of approximately 8 percent and 30 percent of the total container population consists of refrigerated shipping containers. The percent of refrigerated containers that a ship may carry varies between 10 to 50 percent of the total container capacity. The estimated Los Angeles-Long Beach fraction of world refrigerated shipping container activity applied to the estimated annual turnover rate of refrigerated shipping containers has been estimated to be 100,000. The refrigerant charge in modern shipping containers ranges from 13 to 16 pounds. If these containers are allowed to accumulate, the bank could become on the order of 0.1 MMTCO<sub>2</sub>E in a 5 to 10 year period assuming a 10 pound refrigerant charge at decommissioning. Thus, the reduction potential of a mitigation strategy for this source would be less than 0.1 MMTCO<sub>2</sub>E in 2020. In addition, given that these shipping containers may last from 20 to 30 years, there may be a significant number of older CFC-based systems. Finally, it is important to determine what happens to the shipping containers as they approach end-of-life.

**Residential Refrigeration Program:** Estimated annual emission reductions of 0.8 MMTCO<sub>2</sub>E are possible for refrigerant recovery<sup>5</sup>. Of the 0.8 MMTCO<sub>2</sub>E of annual emissions avoided for refrigerant recovery, about 0.7 is due to recovery of R-12 refrigerant. This estimate does not include the benefits from deploying more efficient systems sooner (see energy efficiency calculations, below).

Although refrigerant recovery is currently supposed to occur at the time of disposal, destruction of refrigerant is not required, and it is generally assumed that recovered/reused refrigerant will eventually be emitted.

The CO<sub>2</sub>E emissions avoidance was calculated for 2005, and only refrigerators and freezers going to landfills were considered; numbers of pre-2000 appliances in need of repair were not available. Inclusion of portable A/C units could increase emissions benefits, but numbers of portable units that are repaired or landfilled each year are unknown. Without knowledge of the numbers and age distributions of appliances in California, 2020 emissions reductions based on sector growth and transitional refrigerant/blowing agent use estimates were not possible. However, it is reasonable to assume that approximately 0.8 MMTCO<sub>2</sub>E reductions will be possible every year until refrigerators and freezers containing R-12 are gone, which will happen in large part by 2020.

Energy efficiency emissions avoidance in 2020 resulting from appliance retirement could not be calculated due to lack of data regarding age distribution of California appliances,

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<sup>5</sup> The following assumptions were used: 1) 20 year lifetimes for refrigerators, 2) R-12 use in refrigerators stopped in 1995; from 1995 – 2005 HFC-134a was used, 3) in 2005, half of disposed refrigerators contain R-12 as the refrigerant and the other half contain HFC-134a as the refrigerant, 4) 13,000,000 refrigerator/freezers are disposed of annually in the US and 60% go to landfills or transfer stations, 5) the California population fraction was roughly 13% in 2005, 6) 100-year direct GWPs of 8100 and 1300 were used for R-12 and HFC-134a, respectively, 7) refrigerant masses of 0.23 kg/appliance and 0.16 kg/appliance for R-12 and HFC-134a, respectively, were obtained from USEPA (Dave Godwin, personal conversation, 2/07).

but again it is reasonable to assume that an additional 0.45 MMTCO<sub>2</sub> reduction is possible annually<sup>6</sup>.

To summarize, by 2020, annual emission reductions of roughly 1.25 MMTCO<sub>2</sub>E are possible by recovering refrigerant from pre-2000 refrigerators and freezers, and by requiring upgrading to Energy Star or better appliances.

**High-GWP Tracking/Reporting/Repair/Deposit Program:** Staff believes that significant emission reductions may be realized through the proposed strategy; however, emission reductions cannot be estimated for this strategy, as there are no data to support emission avoidance calculations.

**Total Reductions:** The combined annual reductions possible with this group of strategies is 1.25 MMTCO<sub>2</sub>E, which is a lower-bound estimate that does not include CFC-containing shipping containers, appliances that are upgraded rather than repaired, and the impacts of requiring reporting/repair/deposits for systems over a given CO<sub>2</sub>E threshold.

## **5. Estimated Costs/Economic Impacts and the Impacted Sectors/Entities**

**Refrigerant Recovery from Decommissioned Shipping Containers:** Very little specific information on costs and economic impacts is known today. Per the federal regulation (40 CFR 82), refrigerant cannot be released to the atmosphere. Specialized equipment and certified technicians are required to properly carry out this measure. Equipment to recover the refrigerant may cost \$5,000. The training cost for servicing certification is minimal. Both the equipment and the certified technicians are something that businesses should already have if they are in compliance with the existing federal regulation. It is possible that existing businesses in the air conditioning and refrigeration servicing industry may be able to handle recovering the refrigerant from the decommissioned refrigerated shipping containers. There will also be a requirement to remove or disable the decommissioned refrigeration unit, which should be a minimal cost. It is believed that as these shipping containers age, they get sold to smaller shipping businesses and these may bear the brunt of the measure for decommissioned containers. In addition, some of these units may be sold to restaurants and other businesses for increased refrigeration capacity. If the federal regulation is applied to in-use containers, then all segments of the business would be affected.

**Residential Refrigeration Program:** The US EPA states that because of reduced energy demand, appliance incentive/disposal programs cost about \$0.04 on average to reduce each kWh of demand. This translates into about \$63/MTCO<sub>2</sub>, which includes the incentives and credits given to upgrade older appliances<sup>7</sup>.

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<sup>6</sup> USEPA estimates that 700 kWh/year savings are possible by replacement of a 20 yr old refrigerator with a current energy star appliance; an emission factor of approximately 1.4 lbs CO<sub>2</sub>/kWh for gas-generated electricity was obtained from Carbon Dioxide Emissions from the Generation of Electric Power in the United States, DOE, 7/2000: <http://tonto.eia.doe.gov/FTP/ROOT/environment/co2emiss00.pdf>

<sup>7</sup> See above footnote.

The impacted sectors and entities would mostly be appliance salvagers/recyclers and individuals disposing pre-2000 appliances; however, with incentives and rebates, the cost associated with disposal and some of the cost of a new appliance is avoided.

The US EPA RAD program was started in 2006 and the success of the program has not been gauged yet, although it is anticipated that a mandatory program would be more effective.

**High-GWP Tracking/Reporting/Repair/Deposit Program:** Record-keeping, I/M and repair is already required for systems containing > 50 lbs of an ODS refrigerant; in SCAQMD, reporting is required for these systems in addition to record-keeping. Even those entities who are not yet keeping records for reporting purposes must still have some records of refrigerant/product purchases for resale and income tax purposes. Therefore, the costs associated with record-keeping and reporting are believed to be negligible.

I/M costs are not believed to be significant<sup>8</sup>, but leak repair and/or high GWP GHG recovery for some processes may be expensive. The costs associated with I/M and leak repair cannot be estimated due to the large variety in numbers and types of equipment covered by this strategy. Costs associated with a deposit and return program are unknown, but will presumably be passed on to the consumer at the time of purchase.

## **6. Technical Feasibility**

The technology required to remove refrigerants from shipping containers and appliances is feasible and commercially available. Automated refrigerant and foam removal from appliances is also technically feasible, and can be performed during scrap metal processing and recovery<sup>9</sup>.

There are no anticipated technical feasibility issues for the tracking/reporting/repair/deposit program other than recovery of high-GWP GHGs for certain unknown, emissive processes.

## **7. Additional Considerations**

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<sup>8</sup> Presently, owners or operators of large RAC systems should maintain and repair their systems for optimal performance and reduced energy costs, so the incremental cost of the new rule is not expected to be significantly higher than current costs, unless leaks are going undetected and unrepaired. The costs to pay for yearly inspection and maintenance by certified technicians is not expected to be more than about \$200 (based on one 8-hour workday by a HVAC technician at a rate of \$22/hour in California:  
[http://www.payscale.com/research/US/Job=HVAC\\_Service\\_Technician/Hourly\\_Rate/by\\_State](http://www.payscale.com/research/US/Job=HVAC_Service_Technician/Hourly_Rate/by_State)).

The incremental costs per system associated with an owner, operator, or HVAC technician/auditor filling out several short reporting forms is also expected to be less than \$200 (see above).

<sup>9</sup>Guidance on the Recovery and Disposal of Controlled Substances Contained in Refrigerators and Freezers, SEPA, 2002:  
[http://www.sepa.org.uk/pdf/consultation/closed/2003/fridge/fridge\\_consultation.pdf](http://www.sepa.org.uk/pdf/consultation/closed/2003/fridge/fridge_consultation.pdf)

**All Strategies:** Ozone depleting substances (ODSs) were used in the past as refrigerants and foam-blowing agents; each of the strategies described above include ODSs as they exist in older refrigeration systems, appliances, and foams. Recovering and destroying ODSs from containers and appliances is a cost-effective way to reduce high-GWP gas emissions, and also reduces negative impacts on stratospheric ozone.

An enforcement component for the decommissioned container and tracking/reporting/repair/deposit measures is anticipated, since these are regulatory measures rather than voluntary measures.

**Refrigerant Recovery from Shipping Containers:** Staff will perform a needs assessment to improve the current understanding of overall refrigerant leakage emissions and refrigerant banks for both active and decommissioned refrigerated shipping containers. This is particularly important for the major port areas of Los Angeles, Long Beach, and Oakland. If mitigation action is supported by the analysis, the measure should involve a program enforcing the existing provisions of the existing federal regulation, 40 CFR 82. A basic inventory is needed to determine the extent that refrigerant emissions are unaccounted for. In addition, end-of-life accounting for these different types of refrigerated containers needs to be explored.

**Residential Refrigeration Program:** The impacted sectors and entities would mostly be appliance salvagers/recyclers and possibly individuals disposing of foam-containing appliances, as recovery costs are expected to be passed along to the user.

California trade associations associated with Certified Appliance Recyclers and recyclers of scrap metals are unknown.

Coordination with the US EPA with respect to this regulation is ongoing. Further coordination with utilities participating in appliance trade-in programs is anticipated.

**High-GWP Tracking/Reporting/Repair/Deposit Program:** The affected entities will be owners/operators/purchasers/sellers of high-GWP GHGs and systems containing those chemicals, as well as contractors/technicians who install/repair such systems.

A partial list of trade associations possibly impacted, either positively or negatively, by the regulation follows: ARAP (described previously), the Air-Conditioning and Refrigeration Institute (ARI), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), North American Technician Excellence (NATE), and many others unknown to staff (equipment trade associations, building trade associations, industrial chemical and consumer trade groups, semiconductor and other industrial process trade groups, etc.).

Coordination with the US EPA and SCAQMD with respect to this strategy would be ongoing.

8.     **Division:**                 Research Division  
       **Staff Lead:**           Whitney Leeman/Winston Potts  
       **Section Manager:**   Michael Robert/Tao Huai  
       **Branch Chief:**       Vacant/Alberto Ayala

## 9. References

American Association of Port Authorities (AAPA) web site: <http://www.aapa-ports.org/home.cfm>

Arthur D. Little, Inc., *Global Comparative Analysis of HFC and Alternative Technologies for Refrigeration, Air Conditioning, Foam, Solvent, Aerosol Propellant, and Fire Protection Applications*, Final Report to the Alliance for Responsible Atmospheric Policy, March 21, 2002.

David Godwin (USEPA), Marian Martin Van Pelt and Katrin Peterson (ICF Consulting), *Modeling Emissions of High Global Warming Potential Gases from Ozone Depleting Substance Substitutes*, 2003.

David Hatch, Carrier Transcold, personal communication, 5/07.

DOE, *Carbon Dioxide Emissions from the Generation of Electric Power in the United States*, DOE, 7/2000: <http://tonto.eia.doe.gov/FTP/ROOT/environment/co2emiss00.pdf>

EU (F-Gas Regulation), REGULATION (EC) No 842/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL:

[http://www.fluorocarbons.org/documents/library/Legislation/JO\\_L161\\_1\\_842\\_2006\\_Regulation.pdf](http://www.fluorocarbons.org/documents/library/Legislation/JO_L161_1_842_2006_Regulation.pdf)

Federal Register, Section 608 of the CAAA, and USEPA's related website:

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USEPA, *U.S. High GWP Emissions 1990-2010: Inventories, Projections and Opportunities for Reductions*, EPA 000-F-97-000, June 2001.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B03*  
ID NUMBER: *ARB 2-1 / EJAC-2*  
TITLE: *MANURE DIGESTER PROTOCOL FOR CALCULATING  
GREENHOUSE GAS MITIGATION*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 3<sup>rd</sup> quarter of 2008.

Specifically, staff recommends Board endorsement of the California Climate Action Registry (CCAR) manure digester protocol in order to promote voluntary greenhouse gas emissions reductions.

## 3. Early Action Description

Description of Protocol – The manure digester protocol provides methodologies for calculating reductions in the emissions of greenhouse gases resulting from the installation of a manure digester at an animal agricultural facility.

Technology Description – Manure digesters (also called biogas control systems) are systems which trap gaseous emissions from manure (primarily methane) and combust the gas. The trapping process is achieved by enclosing the manure, which often involves covering a manure lagoon with plastic or otherwise isolating the manure from the ambient environment. The combustion process occurs either by combusting the trapped methane biogas in an engine in order to generate electricity, or by venting and flaring the gases.

CCAR Protocol Development Process – CCAR began developing a protocol for calculating manure greenhouse gas emission back in April 2006. The protocol development process began with a first scoping meeting, included multiple working group meetings and document reviews, and included representatives from nearly every stakeholder group, including industry, government, academia, and the general public.

Need for Digester Protocol Endorsement – Although this protocol was adopted by CCAR, endorsement by the Board would send a clear signal that the ARB considers the protocols to be accurate and acceptable for voluntary GHG emissions reductions. To achieve this end, the ARB is initiating a process to continue discussions on the protocol by holding workshops to solicit comments on the protocol and to identify potential improvements. The ultimate goal is to present the protocol to our Board for endorsement as a voluntary greenhouse gas reduction measure.

Establishing a voluntary protocol can help incentivize the installation of manure digesters by legitimizing the technology and offering a pathway to quantify and verify the greenhouse gas benefits. Keeping this protocol a voluntary measure helps avoid premature technology mandates which could have significant cost and environmental drawbacks due to digesters currently being a costly, combustion-oriented technology.

#### **4. Potential Emission Reductions**

Digesters have the potential to provide a 50 percent reduction in GHG emissions resulting from manure storage (0.006 MMT CO<sub>2</sub>E per digester) as well provide electrical energy, offsetting the production of additional GHGs.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Cost per digester can range from the low hundreds of thousands of dollars to over a million dollars, depending on the digester type (covered lagoon, plug flow, etc.) and the amount of manure and biogas being processed. The captured biogas can be valuable if used for heating (water, animal housing) or combusted in an engine/ generator to produce electricity. Thus, the digester can reduce farm costs and may provide income if the gas or electricity is sold to other entities or back to the grid.

#### **6. Technical Feasibility**

Manure digesters are currently installed and operating at a limited number of farms in California.

#### **7. Additional Considerations**

**Affected Entities:** Farmers, energy companies, and any companies involved in the business of mitigating greenhouse gases (AgCert, CEERT, etc.)

**Trade Associations:** California Farm Bureau, Western United Dairymen, California Dairy Campaign.

**Government Agencies Coordination:** State Water Resources Control Board, local Air Pollution Control Districts, California Department of Food and Agriculture, California Climate Action Registry and others.

**Proposed Board Hearing Date: September 2008**

<b>8. Division:</b>	Planning and Technical Support Division
<b>Staff Lead:</b>	Kevin Eslinger
<b>Section Manager:</b>	Dale Shimp
<b>Branch Chief:</b>	Richard Bode

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B04*  
ID NUMBER: *EJAC-3/ARB 2-12*  
TITLE : *REDUCE METHANE VENTING/LEAKS FROM OIL AND GAS  
SYSTEMS*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE AND  
CALIFORNIA AIR POLLUTION CONTROL OFFICERS  
ASSOCIATION*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2010.

Staff recommends an evaluation of the effectiveness of the existing district rules. Most likely these rules can be amended and readily adopted by the ARB for statewide implementation. Staff also proposes to investigate the feasibility of deploying innovative technologies and to improve management practices, including the stakeholder's proposal to implement energy efficiency measures that will further promote recycling of otherwise vented gases. These combined actions could potentially reduce methane emissions from both gas and oil systems by approximately 1.0 MMTCO<sub>2</sub>E in 2020<sup>1</sup>.

## 3. Early Action Description

Emissions from natural gas systems are primarily methane gas. There are four major sources of methane emissions from the systems: production, processing, transmission, and distribution of natural gas. These emissions are process related, mostly stemming from normal operations, routine maintenance, and system upsets. Also, a relatively smaller amount of methane emissions results from oil systems.

Several air districts have adopted and implemented rules to reduce volatile organic compound (VOC) emissions from natural gas and crude oil production and processing facilities. These existing rules may also reduce methane emissions. In addition, there are several proven cost-effective technologies and management practices that would result in a significant reduction of methane emissions.

Staff will take the following approach to achieve the GHG reduction goal from oil and gas systems as stated in the 2006 CAT report:

- Amend existing rules<sup>2,3</sup>  
Form a working group that consists of ARB, district, and interested stakeholders to review the existing rules to identify potential methane emissions reduction measures.



- Improve management practices<sup>4</sup>  
Encourage districts with oil and gas systems under their jurisdiction to practice directed and more frequent inspections of compressor stations, gate stations, surface and storage facilities, transmission pipelines, and off-shore platforms.
- Require the installation of cost-effective technologies<sup>4</sup>  
Numerous technologies have been identified and proven in the U.S. EPA Natural Gas STAR program<sup>5</sup>, a voluntary program partnership with the oil and natural gas industries, that will pay back investments in a short period of time through saleable gas savings. These technologies include replacement of high- with low-bleed pneumatic devices, installation of a flash tank on glycol dehydrators, retrofitting compressors to capture vented gas, and using an infrared aerial imaging camera to detect leaks, etc.

#### **4. Potential Emission Reductions**

Among the above identified strategies, staff estimated installation of new technologies will provide the greatest potential GHG emissions reduction, about 70 percent of the targeted goal of 1.0 MMTCO<sub>2</sub>E in 2020, while the rest will come from the existing rule amendments (~10 percent) and enforcement (~20 percent). Collectively, these strategies will provide a medium potential of GHG emissions reduction. They will also provide further emissions reduction of VOCs and toxics, with no incurred fuel penalty.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors/ Entities**

ARB will develop this measure in partnership with CAPCOA. ARB will need additional resources to develop and enforce the new rule. CAPCOA may also require additional resources for complementary rulemaking to ensure that the rules are consistent.

As for the oil and gas industries, investment in new technologies will likely pay for itself through net fuel savings to offset the costs. As a result, staff believes that none of the proposed strategies will cause any potential disproportionate economic impacts on small businesses or environmental justice communities from increased utility rates.

#### **6. Technical Feasibility**

Natural Gas STAR partner companies have implemented most of the new technologies identified through a voluntary program established by the U.S. EPA when the natural gas prices were relatively low. These technologies were proven to be reliable and cost-effective. With the higher gas prices today, these technologies are even more cost-effective and attractive to the industry.

#### **7. Additional Considerations**

Staff has reviewed several districts' rules, addressing VOC emissions, that may have reduced methane emissions, and will work together with the districts to identify if any oil and gas industries have implemented fuel saving technologies. The ARB has legal

authority to develop regulations and outreach programs to speed up the deployment of these technologies. However, staff believes a comprehensive and uniform regulation for this CAT strategy cannot be achieved in 18 months.

**Affected Entities:**

Oil and gas industries, pipeline operators, gas processing and storage facilities, utility companies

**Trade Associations:**

American Gas Association (AGA), Gas Processors Association (GPA), Interstate Natural Gas Association of America (INGAA), Kinder Morgan, Natural Gas Supply Association (NGSA), Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SoCalGas), San Diego Gas & Electric (SDG&E), Western States Petroleum Association (WSPA)

**Government Agencies to coordinate with:**

Air Districts, California Air Pollution Control Officers Association (CAPCOA), California Energy Commission (CEC), California Public Utility Commission (CPUC), California State Land Commission (CSLC), Federal Energy Regulatory Commission (FERC), United States Environmental Protection Agency (U.S. EPA)

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Win Setiawan
<b>Section Manager:</b>	Terrel Ferreira
<b>Branch Chief:</b>	Barbara Fry

**9. References:**

<sup>1</sup>*California Climate Leadership: Strategies to Reduce Global Warming Emissions*  
July 2005, Tellus Institute.

<sup>2</sup>Stakeholders' comments to the ARB Proposed Early Action Measures to Reduce Greenhouse Gases, June 2007 Board Hearing, Los Angeles:

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<sup>3</sup>*Various Air Districts Rules.*

<sup>4</sup>*U.S. Methane Emissions 1990-2020: Inventories, Projections, and Opportunities for Reductions*, EPA 430-R-99-013, September 1999, U.S. EPA.

<sup>5</sup>*The EPA Natural Gas STAR Program:*  
<http://www.epa.gov/gasstar/>

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B05*  
ID NUMBER:        *EJAC-4/ARB 2-14*  
TITLE:              *SMARTWAY TRUCK EFFICIENCY*  
PROPONENT:       *2006 CAT REPORT AND STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, it is recommended that this measure be reclassified as a discrete early action. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2008.

The rationale for staff's recommendation is based on the commercial availability of a wide variety of technologies that improve fuel efficiency of heavy-duty vehicles that pay for themselves from fuel savings in a very short time. Although these technologies are commercially available, the trucking industry has been reluctant in using them due to the high initial capital investment and logistic issues related to using some of the technology at loading docks and other locations. However, staff believes these issues can be resolved. Therefore, staff recommends developing a regulatory program and evaluate whether financial assistance would be needed to help small businesses comply with the proposed regulation.

## 3. Early Action Description

The strategy would require existing trucks/trailers to be retrofitted with the best available fuel efficiency "SmartWay Transport"<sup>1</sup> and/or ARB approved technology. Technologies that improve fuel efficiency of trucks may include devices that reduce aerodynamic drag and rolling resistance. Aerodynamic drag may be reduced using devices such as cab roof fairings, cab side gap fairings, cab side skirts, and on the trailer side, trailer side skirts, gap fairings, and trailer tail. Rolling resistance may be reduced using single wide tires or low-rolling resistance tires and automatic tire inflation systems on both the tractor and the trailer.

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<sup>1</sup> The United States Environmental Protection Agency (U.S. EPA) in collaboration with the freight industry has developed a voluntary program designed to increase energy efficiency while significantly reducing greenhouse gases and criteria pollutants. The program, known as the SmartWay Transport Partnership (SmartWay Transport), encourages trucking companies to use technologies that improve fuel economy and reduce emissions. The SmartWay Transport also designates highly fuel efficient and emission reduction technology packages as SmartWay Upgrade Kits which can be purchased at various SmartWay partner centers, dealerships, and service centers. (<http://www.epa.gov/otaq/smartway/documents/420f07027.htm>)

The requirements would apply to California and out-of-state registered Class 8 trucks (gross vehicle weight rating greater than 33,000 pounds) that travel to California. Most of the newer Class 8 combination trucks are long haul trucks for which technologies that reduce both aerodynamic drag and rolling resistance would be appropriate. The older model combination trucks are typically considered short haul trucks and thus spend considerably less time at highway speeds, reducing significantly any benefits associated with aerodynamic improvements since drag varies with the square of the vehicle speed. Thus, it would be most appropriate to require only rolling resistance improvements for these trucks. Straight trucks (trucks with an integrated cargo area) would likely be required to be equipped with devices that reduce aerodynamic drag as well as rolling resistance.

Staff's preliminary thinking is that the rule could be implemented through a phase-in schedule with 10 percent of the trucks and trailers meeting the requirements in 2010, 25 percent in 2011, 60 percent in 2012, and 100 percent in 2013. This rule should also require that new 2010 and subsequent trucks and trailers that are sold in or service California be "SmartWay" certified tractors and trailers<sup>2</sup>.

Although the cost of retrofitting the trucks and trailers would eventually be recovered through fuel savings, the upfront investment capital needed to comply with the requirements may become a financial burden to businesses, especially small businesses and those that own multiple trailers per tractor. Therefore, staff recommends that an evaluation be conducted to determine whether a financial assistance program would be needed to help small businesses comply with the requirements.

#### **4. Potential Emission Reductions**

Potential GHG emission reductions were estimated for calendar years 2010 and 2020. For 2010, the scenario assumes that 10 percent of the existing 2009 and older model year (MY) trucks and tractor-trailer combinations and all 2010 MY trucks and tractor-trailer combinations comply with the requirements. MYs 2006 to 2010 trucks were assumed to be long haul, MYs 2000 to 2005 medium haul, and MYs 1990 to 1999 short haul. Based on these assumptions and considering the total vehicle miles traveled both inside and outside of California, in 2010, the estimated GHG reductions could be up to 6 MMTCO<sub>2</sub>E of which about 7% would occur within California. Similarly in 2020, MYs 2016 to 2020 were assumed to be long haul, MYs 2010 to 2015 medium haul and MYs 2000 to 2009 as short haul trucks. Thus, the 2020 estimated GHG reductions could be up to 20 MMTCO<sub>2</sub>E of which about 11% would occur within California. Requiring compliance by California registered trucks and trailers would significantly reduce the

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<sup>2</sup> U.S. EPA Certified SmartWay tractors and trailers are long haul tractors and trailers equipped with components that significantly reduce fuel consumption and emissions. The specifications for a U.S. EPA Certified SmartWay tractor include a model year 2007 and later engine, integrated cab-high roof fairings, cab side fairing gap reducers, tractor fuel-tank side fairings, aerodynamic bumper and mirrors, options for reducing extended engine idling, and options for low-rolling resistance tires. The specifications for a U.S. EPA Certified SmartWay trailer are side skirts, weight-saving technologies, gap reducers on the front of the trailer or trailer tail, and options for low resistance tires. For further information refer to: <http://www.epa.gov/smartway/documents/420f07033.htm> .

GHG benefits of this rule to 0.2 and 1.3 MMT CO<sub>2</sub>e in 2010 and 2020, respectively. The strategy is also expected to reduce emissions of criteria pollutants and especially emissions of oxides of nitrogen (NO<sub>x</sub>) since NO<sub>x</sub> is directly related to the tractive power requirements. Staff has not yet precisely quantified the reductions in emissions of criteria pollutants that may result from this strategy, but expect them to be on the order of 10 percent reduction for pollutants such as NO<sub>x</sub>, which are closely related to fuel use.

## **5. Estimated Costs/ Economic Impacts and the Impacted Sectors / Entities**

Entities that may be affected by this strategy include the freight industry, trailer manufacturers, truck manufacturers, tire manufactures, businesses that own trailers to haul their freight into and out of California, and cab and trailer aerodynamic device manufacturers. The strategy is expected to provide cost savings to trucking businesses over the useful life of the tractor trailer combination by reducing fuel consumption. Assuming that add-on devices result in 13.9 percent fuel economy gain, the savings are approximately \$5,400 per year for a truck with a baseline fuel economy of 6.1 miles per gallon and an average mileage accrual rate of approximately 90,000 miles per year, and a fuel cost of \$3.00 per gallon. The cost of the add-on devices for a tractor trailer combination, which staff estimates to be approximately \$12,000<sup>3</sup>, can therefore be recovered within 2 to 2.5 years for a trailer-to-tractor-ratio of 1 and within 8 to 10 years for a trailer-to-tractor ratio of three<sup>4</sup>. Businesses that own only trailers and no tractors may not be able to recover the cost of retrofitting their trailers through fuel savings, and therefore, they may need to recover their investment either by paying less to haulers or by passing it to customers by increasing the cost of their merchandise.

## **6. Technical Feasibility**

As indicated above, technologies that improve fuel economy of trucks are currently commercially available. Most of the tractors currently on the road are equipped with cab roof fairings and cab side fairing gap reducers. Trailer side skirts, trailer side fairing gap reducers, single wide tires and automatic tire inflation systems are also commercially available as SmartWay Upgrade Kits. However, there are some minor technical issues with these technologies that will need to be resolved. Retrofit of cab aerodynamics may or may not be possible depending on whether the tractor has factory installed reinforcements or not. Trailer side skirts may be problematic on some trailers where the side skirt interferes with access to equipment. Also, some fleets have expressed concern on trailer side skirts getting damaged when driving over road dips or bumps. The use of trailer tails is currently very limited due to functionality problems at loading docks. Currently, manufacturers of SmartWay devices are working on solutions to these problems and staff believes that these minor technical problems will be resolved by the time the rule is implemented or can be addressed in the development of this rule.

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<sup>3</sup> The \$12,000 estimate includes the cost for trailer aerodynamics (side skirts, gap fairings, and trailer tail), single wide tires and wheels for the tractor and trailer, automatic tire inflation system, and installation cost.

<sup>4</sup> The industry average trailer-to-tractor ratio is not exactly known. However, the most commonly cited numbers range between 2 to 3 trailers-per-tractor. The higher the number of trailers per tractor, the longer it takes to recover the cost from fuel savings.

## **7. Additional Considerations**

This regulatory strategy is motivated primarily by its potential to reduce GHGs. All portions of this strategy can be accomplished under the authority granted by the California Global Warming Solutions Act of 2006, Assembly Bill 32 (AB 32). AB 32 provides the Air Resources Board (Board) with the authority to regulate sources of GHGs to achieve the maximum and cost-effective GHG emission reductions from these sources. The item can be taken to the Board by the 4<sup>th</sup> quarter of 2008 but requires additional resources.

**Affected Entities:** Truck carriers, shipper carriers, trailer manufacturers, truck manufactures, truck and trailer aerodynamic device manufacturers, tire manufacturers, businesses that own trailers to haul their freight into and out of California

**Trade Associations:** American Trucking Association, California Trucking Association, Truck Manufacturers Association, Truck Trailer Manufacturers Association, California Chamber of Commerce.

**Government Agencies to coordinate with:** None.

**8. Division:** Mobile Source Control Division  
**Staff Lead:** Daniel Hawelti  
**Section Manager:** Stephan Lemieux  
**Branch Chief:** Michael Carter

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B06*  
ID NUMBER:         *EA 2-15*  
TITLE:                *COOL PAINTS FOR AUTOMOBILES*  
PROPONENT:        *EARLY ACTION REPORT OF APRIL 21, 2007 AND*  
                              *STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 2<sup>nd</sup> quarter of 2009.

## 3. Early Action Description

Cool paints are highly solar energy reflective coatings formulated with pigments that have low absorption (high reflectance) of sunlight. White is considered to reflect more sunlight than any other color. But while white paints reflect the visible light, they may or may not reflect the balance of the sunlight. The majority of solar energy is not in the visible range, therefore careful formulation of pigments can allow the reflectance of near-infrared (NIR) sunlight which contains about 52 percent of the solar energy, while maintaining visible light reflectance (i.e., perceived color). For vehicles, the more solar energy is reflected, the less the vehicle's interior will heat up when it is parked in the sun.

Cool paints have been demonstrated by the Society of Automotive Engineers as part of the Improved Mobile Air Conditioning Cooperative Research Program. They are technically feasible in the near-term for new vehicles. Researchers at Lawrence Berkeley National Laboratory (LBNL) tested various automotive paints formulated for use between 1992 and 2002<sup>1</sup>. Using a solar spectrometer, they determined the reflectance of both visible and NIR light wavelengths. Table 1 presents the reflectance of light (higher reflectance equals cooler paint). As expected, the dark colors tended to reflect less light; more light energy is absorbed. The potential of cool paints can be readily seen when examining the results for red paints, shown in **bold** on the table. The red paints ranged from a reflectance of 0.13, not much better than the black paint tested, to a high of 0.37. While that does not approach the 0.70 seen for the white vehicle, it is nearly three times more reflective than the worst performing red paint.

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<sup>1</sup> These paints were all tested with a white primer.

Table 1. Reflectance of Vehicle Paints

Vehicle Paint Color	Visible light	NIR	Total
Black, 1998 Ford	0.04	0.04	0.04
Dark Grey, 1998 Dodge Intrepid	0.06	0.05	0.06
Grey Metallic, 1992 GM Buick	0.21	0.25	0.22
Silver, 1992 Ford Escort	0.49	0.54	0.50
Gold Metallic, 1998 Ford Taurus	0.46	0.56	0.49
Light Blue Metallic, 1994 Honda Accord	0.33	0.44	0.39
Blue Metallic, 2001 GM	0.06	0.13	0.10
Green, 1995 Chevy Camaro	0.07	0.08	0.08
<b>Red, Chevy</b>	<b>0.08</b>	<b>0.18</b>	<b>0.13</b>
<b>Red, 2000 Ford Escort</b>	<b>0.14</b>	<b>0.50</b>	<b>0.33</b>
<b>Red, 2002 Chevy Avalanche</b>	<b>0.15</b>	<b>0.35</b>	<b>0.25</b>
<b>Red, 1993 Chevy S10 Blazer</b>	<b>0.15</b>	<b>0.57</b>	<b>0.37</b>
White, 1997 GM Park Avenue	0.70	0.77	0.70

#### 4. Potential Emission Reductions

The concept behind this proposed action item is that the use of cool paints would reduce the solar heat gain in a vehicle parked in the sun. A cooler interior would provide drivers with less need to activate the air conditioner (A/C).

LBNL researchers have investigated the CO<sub>2</sub> reduction that would result from a 5°F reduction in vehicle temperature at start up.<sup>2</sup> LBNL's Dr. Hashem Akbari estimates that such a reduction in temperatures, applied to the light duty vehicle fleet in California, would reduce CO<sub>2</sub> emissions from A/C use by about 25 percent, reducing current CO<sub>2</sub> estimates of A/C related emissions of 10.2 million metric tons per year (MT/yr) to 7.8 MT/yr, a 2.4 MT/yr reduction.<sup>3</sup>

Staff also requested input from Dr. John Rugh, National Renewable Energy Laboratory, on the probability of A/C use for a given reduction in temperatures. Dr. Rugh is currently involved in a global effort led by the Society of Automotive Engineers (SAE) to come up with an agreed upon method to determine life cycle climate performance. This effort is known as SAE's Improved Mobile Air Conditioning Cooperative Research Program. Dr. Rugh provided a draft analysis from Phoenix, showing the percent of time the A/C is in use for given ambient temperature ranges. As would be expected, at low ambient

<sup>2</sup> A 5°F reduction in interior temperature has been measured by Toyota when changing from a metallic blue paint with a solar reflectivity of 10 percent to one with a reflectivity of 20 percent. Table 1 shows NIR reflectivity of 0.77 for white paint. This could be applicable to all paints, and could probably be improved to reach values closer to 100 percent reflectivity. Therefore, even the metallic blue paint should be able to achieve a reflectivity of at least 50 percent. Thus, the anticipated CO<sub>2</sub> reduction should be conservative.

<sup>3</sup> Literature on cool paints and window glazings typically model the potential for downsizing the A/C unit that exists due to measured reductions in soak temperature. Statements of the amount of downsizing feasible for equivalent cooling times are typically followed by an associated reduction in CO<sub>2</sub> emissions. Dr. Akbari presumes improvements in emissions would result whether the A/C unit was downsized or the existing unit was simply used less frequently.



temperatures, very little A/C is used: As temperatures increase to around 18°C, A/C use begins to increase. Use continues to increase steadily until the A/C is in use nearly 100 percent of the time, around 38°C. During the rising portion of the curve, A/C use increases about 5 percent per °C. If it is presumed that increased ambient temperatures are associated with increased soak temperatures, it would be logical to correlate a reduction in soak temperature in the midsection of the graph with a reduction in A/C use. Thus, a reduction in temperature of about 2.7°C (5°F), as seen in the Toyota test, would be expected to result in 14 percent less A/C use when ambient temperatures are in the rising portion of the curve. Staff applied that figure to the methodology developed by Dr. Akbari, and found a predicted reduction in CO<sub>2</sub> emission from a 2.7°C reduction in temperature of 2.1 MT/yr, which is comparable to the estimate presented by Dr. Akbari.

The following bullets summarize the issue:

- Slightly over half of all solar energy is in the form of NIR radiation, which is not visible to the naked eye. Cool paints use pigments that have low absorptance of NIR while maintaining a variety of visible colors.
- The benefits of cool paints include:
  - Lower external surface temperatures, reducing burn hazard and the transfer of heat to the interior of the vehicle.
  - Lower interior temperatures, resulting in greater driver comfort and potentially reduced A/C demand.
  - Potential to reduce size of air conditioner. According to LBNL staff, a vehicle's A/C is currently designed to cool a black vehicle parked for 4 hours in the summer sun in Phoenix within a set time period. If that vehicle is painted with cool black paint, the soak temperature would be reduced and the A/C load reduced. Downsizing the A/C would allow it to operate at more efficient loads while maintaining desired interior temperatures.
  - Reduced use of and/or downsizing of an A/C would result in reduced GHG emissions. Analyses indicate a reduction of 2.1 to 2.4 MT/yr CO<sub>2</sub>e could be achieved for the light duty fleet with a relatively small improvement in solar reflectivity. Additional reductions for the medium and heavy duty fleets would likely increase this figure.
  - Possible increased lifespan of exterior paint, interior plastics and other materials

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

There are few disbenefits to this technology beyond a slight increase in coating cost. This may be more than offset by reduced A/C use or A/C downsizing, if this occurs. Cool paints currently cost about \$10 more per vehicle than traditional paints. Literature indicates these paints are applied with standard equipment and methods. The small increased cost could be more than offset by a downsized A/C unit, and would be offset by improvements in operational costs due to reduced A/C use. In addition, the increased comfort should be of value to many consumers.

These paints would have the most benefit if used in conjunction with other technologies (e.g., window glazing, passive ventilation) to reduce a vehicle's interior temperatures. Therefore with the development of this rulemaking, staff will also evaluate other

technologies that will reduce the heat load on the vehicle's A/C and determine if it would be appropriate to include these technologies in the "cool paints" proposal.

## **6. Other Considerations:**

Cool paints can be formulated with existing paint formulations such that supply should not be an issue. BASF, DuPont, Sherwin Williams, many other paint manufacturers do have cool versions of at least some paints developed. Cool paints do not limit consumer choice of color. Cool paints use pigments that have low absorbance of the non-visible spectrum while maintaining the same variety of visible colors that consumers demand. Presently, cost and car maker acceptance appear to be the only show-stoppers for the use of cool paints and other complimentary cool car technologies.

An evaluation should be done to determine if the reformulated "cool paint" will result in an increased toxic exposure risk during the paint application process and disposal. Staff believes this exposure risk should be minimal due to the fact that research thus far, shows that "cool paints" can be formulated using existing pigments; however it is an issue that needs to be addressed during the formal rulemaking process.

<b>7. Division:</b>	Mobile Source Control Division
<b>Staff Lead:</b>	Marijke Bekken
<b>Section Manager:</b>	Sharon Lemieux
<b>Branch Chief:</b>	Michael Carter

## **8. References:**

Akbari, Hashem, "Coatings for Cool Vehicles" Presentation, March 16, 2007

Lawrence Berkeley National Laboratory, Heat Island Group, <http://CoolColors.LBL.gov>

Rugh, J., "Assessing the Vehicle Level and National A/C Fuel Use Impact of Advanced Climate Control Technologies," International Energy Agency Workshop – Cooling Cars with Less Fuel, Paris, France, Oct. 23, 2006.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B07*  
ID NUMBER:        *EJAC-14/SCAQMD-6/EA 2-16/ARB A-14*  
TITLE:              *GREEN PORTS*  
PROPONENT:       *2006 CAT REPORT AND STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, it is recommended that this measure be reclassified as a discrete early action. The Board date for consideration of this item is anticipated in 1<sup>st</sup> quarter of 2008.

Staff proposes to present the draft regulation to the Board as a measure to reduce nitrogen oxides (NO<sub>x</sub>) and diesel particulate (PM) emissions and to quantify the associated (carbon dioxide) CO<sub>2</sub> emission reductions. By focusing on NO<sub>x</sub> and PM reductions, staff will address the local and regional health impacts of ships docked in California's ports, including any disproportionate impacts those emissions may have on surrounding communities.

## 3. Early Action Description

This early action allows docked ships to shut off their auxiliary engines by plugging into shoreside electrical outlets or other technologies. The Air Resources Board identified port electrification as a strategy to reduce the emissions of nitrogen oxides (NO<sub>x</sub>) and diesel particulate matter (PM) when the Board approved the Goods Movement Emission Reduction Plan in April 2006. Furthermore, the Climate Action Team (CAT) recommended port electrification as a greenhouse gas (GHG) emission reduction strategy in 2006.

While a ship is docked at a berth, or "hotelled," it continuously runs at least one auxiliary engine to power lighting, ventilation, pumps, communication, and other onboard equipment. Ships can hotel for several hours or several days.

Port electrification provides an alternative source of power for these ships while they are docked. The ships can use cables to receive electricity from the shore, thereby allowing them to shut off their auxiliary engines, reducing emissions of air pollutants. Although the generation of electricity creates emissions—typically from power plants located elsewhere—these emissions are much less than those from the auxiliary engines located on the ships. Port electrification of a ship can reduce its emissions of NO<sub>x</sub> and diesel PM by more than 90 percent. Greenhouse gas (GHG) emissions, as carbon dioxide (CO<sub>2</sub>), are also reduced, depending on the source of electricity provided to the berth.

To be an attractive candidate for shore electrification, a ship must visit a California port frequently, spend a sufficient number of hours in berth, and have an ample power demand while docked. The ship categories that typically meet these criteria are container ships, passenger ships, and refrigerated cargo ships. (Passenger ships, although in port for only about 10 hours, visit frequently and have tremendous power needs.) Ship categories that are not attractive candidates include bulk cargo ships, vehicle carriers, and most tankers. The ports that receive numerous calls by container ships, passenger ships, and refrigerated cargo ships—and therefore the ports most likely to employ port electrification—are Los Angeles, Long Beach, San Diego, Oakland, San Francisco, and Hueneme.

ARB staff is currently working with ports, ship operators, utility companies, local air districts, and other interested stakeholders to develop a regulation to reduce emissions from ships while docked. Although the proposed regulation will allow alternative technologies to reduce emissions, the key component of the regulation will be port electrification. Staff expects to take the proposed regulation to the Board for its consideration by the end of 2007.

#### 4. Potential Emission Reductions

ARB staff is pursuing the port electrification strategy as a measure to reduce NO<sub>x</sub> and diesel PM emissions. This strategy was identified in the Goods Movement Emissions Reduction Plan (GMERP), approved by the Board in April 2006. The reduction of these pollutants is essential for protecting public health near California's ports and for the South Coast Air Basin to eventually achieve and maintain health-based ambient air quality standards for ozone and fine particulate matter. The reduction of CO<sub>2</sub> is a co-benefit of the proposed at-berth emission reduction regulation.

Although the proposed regulation is not yet fully developed, staff estimates that the regulation may result in the following emission reductions:

Pollutant	2015	2020
NO <sub>x</sub> (Tons)	15,000	19,000
Diesel PM (Tons)	400	500
CO <sub>2</sub> (Million Metric Tons)	0.3	0.5

Staff expects port electrification to achieve emission reductions in 2010—largely due to the commitments of the Port of Los Angeles and the Port of Long Beach through their Clean Air Action Plan—however, the emission reductions from the proposed regulation will not be substantial until after 2010.

The potential CO<sub>2</sub> emission reductions of port electrification are dependent on the source of the electricity provided to the port. If the electricity portfolio of the utility company has a significant portion of renewable sources, such as wind, solar, or biomass, then the CO<sub>2</sub> reductions may be substantial. Similarly, if the portfolio contains sources of electricity that generate considerable amounts of CO<sub>2</sub>—say, out-of-state coal-fired plants—then the potential CO<sub>2</sub> emissions would be diminished.

For the purpose of this analysis, ARB staff used a CO<sub>2</sub> emission factor of 0.25 MMT CO<sub>2</sub>/MW-hr for the electrical grid and 0.69 MMT CO<sub>2</sub>/MW-hr for the auxiliary engines. Staff will consider utility-specific CO<sub>2</sub> emissions and marginal electricity generation CO<sub>2</sub> emissions (typically combined-cycle gas turbines) as the development of the regulation proceeds.

As mentioned earlier, the proposed regulation will allow alternative technologies to achieve required emission reductions. These alternatives may include ship-side technologies, such as post-combustion devices, alternative fuels, or cleaner engines, or shore-side technologies, including distributed generation or emission-capture-and-treatment devices. These technologies will probably be less effective in reducing GHG emissions when compared to port electrification; however, their overall deployment and impact are uncertain.

As a GHG emission reduction strategy, port electrification has the potential to reduce CO<sub>2</sub> emissions on the order of 0.3 to 0.5 MMTCO<sub>2</sub> per year. This estimate does not consider the climate benefit associated with reduction of black carbon, a component of diesel PM.

## 5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities

Staff estimates that port electrification, as currently proposed, will cost more than \$1.2 billion, roughly one-third of that cost borne by the ports and terminals, two-thirds by the ship operators.

The growth in port activity—especially the substantial increase in containers expected to be handled by the ports and the projected surge in cruise-ship vacations—will have a significant impact on the number of ships that must be built or retrofitted to accommodate port electrification. ARB staff estimates the number of ships to be affected by the proposed regulation as:

<b>Ships Affected</b>	<b>2015</b>	<b>2020</b>
Container	500	1,200
Passenger	76	110
Refrigerated Cargo	10	25

In addition to the recovery of that capital expenditure, annual operating expenses will include labor costs necessary to connect and disconnect the ships to shore power and the cost of the electricity itself. Fuel savings realized by shutting down the auxiliary engines will help offset the electricity costs.

Staff estimates that the annual costs of port electrification are as follows:

<b>Annual Costs</b>	<b>2015</b>	<b>2020</b>
Capital Costs	\$148 million	\$250 million
Operating Costs	\$42 million	\$ 75 million
<b>Total</b>	<b>\$190 million</b>	<b>\$325 million</b>

As mentioned above, port electrification is considered foremost a measure to reduce NO<sub>x</sub> and diesel PM emissions with GHG emission reductions being a co-benefit. The cost effectiveness of port electrification for 2020 is estimated at \$17,000/ ton for NO<sub>x</sub> or \$640,000/ ton for PM. These values represent the cost of the regulation completely allocated to either NO<sub>x</sub> or diesel PM; a sharing of the total costs between these two pollutants would further enhance their cost effectiveness.

If NO<sub>x</sub> and diesel PM emission reductions were not considered, and port electrification were considered solely as a GHG emission reduction measure, the cost effectiveness in 2020 would be \$650/MT CO<sub>2</sub>.

Staff proposes to present the draft regulation to the Board as a measure to reduce NO<sub>x</sub> and diesel PM and to quantify the associated co-benefit of CO<sub>2</sub> emission reductions. By focusing on NO<sub>x</sub> and PM reductions, staff will address the local and regional health impacts of ships docked in California's ports, including any disproportionate impacts those emissions may have on surrounding communities.

## **6. Technical Feasibility**

Port electrification is a proven technology. The U.S. Navy has been employing it worldwide for decades. Princess Cruise Lines currently uses port electrification in Juneau, AK and Seattle, WA, as does China Shipping at the Port of Los Angeles (POLA). The NYK Atlas has recently plugged in at POLA, and British Petroleum is expected to utilize port electrification by the end of the year at the Port of Long Beach for two of its diesel-electric tankers.

Although technically feasible, port electrification is not without its challenges, including the availability of electricity, the standardization of electrical hookups, and sufficient visits to electrified berths by retrofitted ships to make the emissions reductions cost-effective. Staff has been discussing the necessary electrical infrastructure and supply with the major ports and utility companies. The International Maritime Organization (IMO) is considering standard electrical connections for port electrification, and several California ports and other organizations are participating in that effort.

## **7. Additional Considerations**

California will be the first state to require port electrification, or its equivalent, if the Board adopts a proposed regulation within the next six months. Current port electrification projects within California and the United States have been required on a case-by-case basis.

The requirement to reduce emissions from ships while docked at California ports is clearly within the jurisdiction of the Air Resources Board. Port electrification has been identified as a strategy to reduce NO<sub>x</sub> and diesel PM in the Goods Movement Emission Reduction Plan and as a GHG emission reduction strategy by the CAT. Staff will bring a proposed regulation to the Board within the next six months.

**8. Division:** Stationary Source Division  
**Staff Lead:** Grant Chin

**Section Manager:** Mike Waugh  
**Branch Chief:** Mike Tollstrup

**9. References:**

*Draft Evaluation of Cold-Ironing Ocean-Going Vessels at California Ports (ARB, March 2006)*

*Documentation to Climate Action Team, December 2006*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Action Strategy Name and Proponent

SUMMARY #            *B08*  
ID NUMBER:         *EJAC-7/ARB 2-17*  
TITLE:                *TRANSPORT REFRIGERATION UNITS, ELECTRIC STANDBY*  
PROPONENT:        *2006 CAT REPORT AND ENVIRONMENTAL JUSTICE*  
                             *ADVISORY COMMITTEE*

## 2. Staff Recommendation

This strategy was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this strategy is recommended. Costs for this strategy are high and new information indicates costs may be 30 to 50 percent higher than originally estimated. An extensive amount of coordination with industry remains to be completed before any regulatory action can proceed. This is due to a variety of factors, including the lack of industry standards for electric power use on transport refrigeration units (TRUs). For example, more than four optional voltages are used, along with both single phase and 3-phase frequencies, and many electric power plug configurations are in use (see Part 7 for more information). Therefore, a Board hearing date is not indicated.

## 3. Description

Transport refrigeration units are refrigeration systems powered by integral internal combustion engines designed to control the environment of temperature sensitive products that are transported in trucks, trailers, shipping containers, and railcars. In 2004, the TRU Airborne Toxic Control Measure (ATCM) was adopted to reduce diesel particulate matter (PM) emissions from TRU engines. ARB staff is currently implementing this ATCM. As conceived, this strategy would go beyond current ATCM requirements with a regulatory action to require that no TRU-equipped trucks, trailers, shipping containers, or railcars that are used at a large distribution center for outbound loads would be allowed to be powered by internal combustion engines for more than 30 minutes in a 24-hour period.

An optional component of this strategy would prohibit the use of internal-combustion engine-powered TRUs on trucks, trailers, shipping containers, and railcars from being used for extended cold storage at California distribution centers, grocery stores, and elsewhere. This practice occurs during the 4-to-6 week period before all of the major holidays because distribution center cold storage warehouse capacity is exceeded at about 30 percent of the distribution facilities and at an unknown number of grocery stores.



#### **4. Potential Emission Reductions**

For this strategy, staff estimates a reduction of 3.4 to 4.3 million gallons of diesel fuel used per year (with 51 to 64 GWh of new electricity use); the optional component (extended cold storage prohibition) would result in an additional reduction of 1.7 million gallons of diesel fuel used per year (with 26 GWh new electricity use). This strategy would also provide emission reduction co-benefits due to reduced diesel engine operating times; therefore, emissions of ozone precursors and diesel PM particulates would also be reduced. However, ARB staff estimates only about 0.04 million metric tons per year of CO<sub>2</sub> reductions could be achieved (0.45 million metric tons total by 2020).

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Capital costs are estimated to be \$105 million for the first year and \$3.1 to \$3.6 million per year thereafter. The optional component would require an additional one-time capital cost of \$44 million. New information indicates capital costs may be 30 to 50 percent higher than these early estimates. Without including these potential increases, inflation or discount factors, ARB staff estimates rough annual costs at \$16.7 million per year (total accrued costs, with savings, would be approximately \$167 million in 2020). Staff is still working on refining cost and is not able to provide a cost-effectiveness estimate at this time.

#### **6. Technical Feasibility**

Compliance is a critical issue which will most likely require the use of various technologies in order to ensure that adequate enforcement of the regulation occurs. Technologies exist that could be applied toward automated compliance assurance and reporting systems, but it may take several years to develop and test the reliability of such systems such that they could be used for this application. Additional regulatory action may also be necessary to ensure these compliance assurance systems provide an enforceable reporting mechanism.

#### **7. Additional Considerations**

Industry standards need to be developed and adopted to address compatibility issues, plug types, and configurations. Although electric standby (E/S) technology is available for some TRU models, less than one percent of trailer TRUs are currently equipped with E/S and retrofitting with E/S is extremely expensive and has never been attempted. Extensive design and development work is needed before E/S use could be required. Most existing TRU models will need to be redesigned to use smaller, more efficient refrigeration compressors or to use larger, more powerful electric motors to provide enough capacity for quick initial trailer cool-down prior to loading perishable goods. Current E/S designs use under-powered electric motors that are intended only to maintain a temperature set point after the diesel engine completes the initial chill down. Additionally, further investigation on the feasibility of prohibiting the use of diesel-powered TRUs for extended cold storage is needed as it may require a significant change in business practices and have unforeseen economic impacts.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Rod Hill
<b>Section Manager:</b>	Richard Boyd
<b>Branch Chief:</b>	Dan Donohoue

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B09*  
ID NUMBER: *EJAC-9/ARB 2-19*  
TITLE: *TRUCK STOP ELECTRIFICATION WITH INCENTIVES FOR TRUCKERS*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is waiting to be determinate.

Staff recommends that ARB considers an incentive-based strategy to expedite a comprehensive deployment of on-shore electric power infrastructure to eliminate idling emissions from heavy-duty trucks. This incentive program must consider the existing requirements of the idling regulations in order to design an approach that would yield surplus emissions through the use of financial incentives. The incentives could be structured to pay a portion of the plug-in usage fee either to the truckers or to the technology vendors. The advantage of this strategy would be the elimination (exclusive of power plant emissions) of greenhouse gas and criteria pollutant emissions resulting from truck idling activities. This approach would also provide an alternative for the trucking industry to not just comply with the idling requirements, but would allow them to go beyond those requirements to achieve zero emission through the use of financial incentives. The disadvantage of this strategy would be the high costs to obtain relatively small incremental benefits since existing regulations have already established very low emission thresholds for this source category.

## 3. Early Action Description

This strategy would require truck stops to install electrical power infrastructure (i.e., on-shore electrical power) to reduce heavy-duty trucks idling emissions, perhaps through the use of financial incentives. On-shore electric power involves the electrification of truck parking spaces to provide power for heating, cooling and on-board truck accessories. Affected entities of this strategy include owners and/or operators of heavy-duty trucks, truck stops owners and technology vendors.

Heavy-duty trucks idle their engines an estimated 6 hours per day, resulting in emissions of criteria pollutants and greenhouse gases. These emissions could be eliminated with the proposed electrification strategy as a result of eliminating the combustion of diesel fuel from either the truck engine or the auxiliary power unit (APU) engine. The ARB has already adopted regulations limiting the idling time of heavy-duty trucks unless the truck

is installed with appropriate low-emission technology. Starting in 2008, all trucks must comply with a 5-minute idling limit unless it has a certified APU coupled with a PM trap. Engine manufacturers also have the option of certifying model year 2008 and newer main truck engines to a low idling NOx emission level of 30 grams per hour (ARB, 2005). Since the existing regulations have already set limits and requirements on truck idling activities, this proposed strategy would provide additional emission reductions beyond those regulations by eliminating the emissions resulting from operation of the APU, or from low-idling emission engines.

Currently, there are already two on-shore power technologies that have been commercially established and have been used to eliminate truck idling emissions. The two technologies are commonly referred to as on-board power infrastructure and off-board infrastructure technologies.

On-board power infrastructure provides trucks with 110-volt AC electrical power at truck stops to run the air conditioning, heating and on-board accessories. This would require truck stops to be equipped with electrical outlets throughout the parking spaces and trucks need to be equipped or retrofitted with inverter/chargers, electrical power connections and electrically driven heating and air conditioning units. The drawbacks of this approach include the high initial infrastructure cost, cost for equipment add-ons to trucks, and its availability, which is limited to where the infrastructure is installed. The aftermarket cost for add-ons and installation is about \$4,000 per truck and power infrastructure installation is about \$3,500 to \$6,000 per truck parking space depending on the number of power pedestals installed (Perrot, et al, 2004).

Off-board power infrastructure provides 110-volt AC electrical power through an externally installed heating and air conditioning unit, as well as hook-ups for basic telephone, internet and television services at each truck parking space. The unit is connected to the truck through a console installed to the truck window using a template insert. The console contains all the necessary connections and controls, including a card reader for the billing system. Currently the usage fee for basic services range from \$1.25 to \$1.50 per hour. The off-board power infrastructure installation cost is approximately \$12,000 to \$20,000 per parking space depending on the number of parking spaces installed (Antares, 2005). The advantage of this system is that the truck does not need to be modified with any alternative cab comfort technology, resulting in immediate benefits to the truck owner using the service through reduced fuel consumption and maintenance savings.

This strategy could be crafted as a regulation requiring all truck stops to install electric infrastructure that could be used by truckers to eliminate truck engine idling. To be effective, that regulation would also need to require the truckers to use the electric infrastructure for their idling needs instead of idling the truck engine or using the APU. However, since ARB already has existing idling regulations, one of which has already been implemented and the other will become effective in January 2008, it will be challenging to develop another regulation on top of the existing idling regulation. A less contentious approach would be through an incentive-based program to spur the installation of the appropriate electric infrastructure that would allow truckers the option to "plug in" when they park at these truck stops.

ARB has already had direct experience in implementing an incentive-based on-shore power infrastructure program. ARB executed a grant with IdleAire, a company that

developed an off-board power infrastructure technology, to assist in the installation and operation of off-board power infrastructure at various truck stops located in the San Joaquin Valley. The grant, totaling \$1,334,536, was used to pay for usage (\$1.50 per hour) of the IdleAire device at the 415 parking spaces at six truck stops that are spread throughout the San Joaquin Valley. The South Coast Air Quality Management District (SCAQMD) has also funded IdleAire projects in the South Coast with funding from the Carl Moyer Program and the U.S. EPA. In addition to paying for usage, at a rate of \$3.94 per hour, the SCAQMD program also pays for a portion of the installation cost (\$8,726 per unit) of the IdleAire power unit.

#### **4. Potential Emission Reductions**

The existing truck idling regulation limits idling time from heavy-duty trucks to 5 minutes unless the truck is equipped with an APU coupled with a particulate trap or, alternately, unless the truck is a 2008 and later model year that is certified to the low idling NOx emission standard of 30 grams per hour. Because of this requirement, the NOx idling emission rate of 30 grams per hour was used as the baseline emission level. Since existing idling regulations do not specify optional idling emission rates for pollutants other than NOx emissions, the truck baseline idling emission levels for other pollutants such as HC, PM, and CO<sub>2</sub> were established using EMFAC2002 idling emission rates. The surplus emission reductions are calculated as going from these baseline levels to a zero emission level for each truck stop parking space that is electrified.

Based on data from Report to Congress of Adequacy of Parking Facilities, there is currently about 7,500 spaces at truck stops and 1,300 spaces in Caltrans public rest areas. Currently, about 900 parking spaces at truck stops are installed with electric power infrastructure, resulting in an estimated 2010 annual reduction of about 55,000 tons of CO<sub>2</sub> per year (0.055 MMTCO<sub>2</sub>E). If the remaining truck stop parking spaces are electrified, an additional annual reduction of about 405,000 tons of CO<sub>2</sub> (0.4 MMTCO<sub>2</sub>E) would result. Depending on the expected growth of available parking spaces at truck stops, the 2020 emission benefits could be adjusted accordingly. The expected CO<sub>2</sub> emission reduction from this strategy, if fully implemented, could be on the order of >0.1 to 1.0 MMTCO<sub>2</sub>E. Emission reductions of criteria pollutants (HC, NOx, and PM) are estimated to be about 530, 1,300, and 120 tons per year, respectively, in 2010.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Given the cost of the existing on-shore electric power infrastructure technology and the expected baseline emission rates, it is estimated that the cost to reduce CO<sub>2</sub> emissions to range from a low of about \$135 per metric ton to a high of about \$359 per metric ton. There are about 6,600 parking spaces at truck stops and about 1,300 parking spaces in Caltrans public rest areas that are currently do not have electric power infrastructure, for a total of about 7,900 truck non-electrified parking spaces. Assuming the cost of on-shore power infrastructure to range from \$7,500 to \$20,000, including the cost of on-truck equipment in the case of the on-board power infrastructure technology, the total cost to electrify all 6,600 parking spaces at truck stops would be about \$49,500,000 to \$132,000,000. If the 1,300 parking spaces at Caltrans public rest areas are also to be installed with on-shore electric power infrastructure, it would cost an additional \$9,750,000 to \$26,000,000.

A requirement for an on-shore electric power infrastructure would impact truck stop owners, truck drivers, and technology vendors. The economic burden on truck stop owners would depend on how they structured their approach towards establishing the required infrastructure. They could purchase the equipment and have it installed at their facilities, or they could opt to lease the parking spaces to technology vendors for them to install the equipment. The cost to truckers could range from the cost to install the necessary equipment on their trucks in the case of an on-board technology to simply just paying for the hourly cost of plugging in when they use the facility. The cost to technology vendors would be the cost to manufacture, install, and operate the power infrastructure.

## **6. Technical Feasibility**

On-shore electric power infrastructure is an established, proven commercial technology. This technology is currently being deployed at various truck stops throughout the country. In California, approximately 900 truck stop parking spaces already have on-shore electric power infrastructure. The main obstacle to more widespread deployment of this technology appears to be the relatively high initial cost of installing the necessary infrastructure.

## **7. Additional Considerations**

Additional analysis is needed before deciding on an implementation path. It is possible that other jurisdictions have taken this action as an incentive program. Also, this strategy clearly falls under ARB jurisdiction and authority as idling limits have been adopted. Although an incentive program appears to be the best option, a regulation could be developed in the next 18 months, making the strategy a discrete early action.

Affected Entities: Truck stop owners, truck drivers, technology vendors

Trade Associations: Trucking associations, utilities companies

Government Agencies to coordinate with: Local air districts, local governments regarding permitting requirements

<b>8. Division:</b>	Mobile Source Control Division
<b>Staff Lead:</b>	Bob Nguyen
<b>Section Manager:</b>	John Kato
<b>Branch Chief:</b>	Jack Kitowski

## **9. References:**

*ARB, Notice of Public Hearing to Consider Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008, Sacramento, September 1, 2005*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B10*  
ID NUMBER:         *EA 2-20*  
TITLE:                *TIRE PRESSURE PROGRAM*  
PROPONENT:        *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, it is recommended that this measure be reclassified as a discrete early action. The Board date for consideration of this item is anticipated in 1<sup>st</sup> quarter of 2009.

Maintaining a vehicle's tire pressure to the manufacturer's recommended specifications is a practical strategy to achieving early greenhouse gas (GHG) emission reductions. Current Federal law requires auto manufacturers to install tire pressure monitoring systems in all new vehicles beginning September 1, 2007. Staff recommends that the ARB investigate strategies to ensure that the tire pressures in older vehicles are also monitored, as well as requiring the tires to be checked and inflated at regular service intervals. One potential strategy would be to require all vehicle service facilities, such as, dealerships, maintenance garages, and smog check stations, to check and inflate tires.

Staff also recommends that the feasibility of conducting an extensive outreach program be investigated. The outreach program could entail placards being placed above each fueling dispenser to encourage drivers to properly maintain their tires each month. The placards would highlight the amount of money consumers could save as a result of lower fuel consumption, as well as, how each consumer is doing their part to help prevent climate change.

## 3. Early Action Description

According to the National Highway Traffic Safety Administration (NHTSA), 74% of all vehicles have at least one significantly under inflated tire<sup>1</sup>. The U.S. Department of Energy (DOE), California Energy Commission (CEC), and NHTSA, state that every 1 pound per square inch (PSI) drop in tire pressure equals an approximate 0.4% drop in a vehicle's gas mileage. Establishing a program to monitor and correct vehicle tire pressure could save Californians a minimum of 61 million gallons of fuel, which equates to 0.54 MMT of CO<sub>2</sub> emissions in 2010 (first year of implementation) and 22.5 million gallons of fuel and 0.20 MMT of CO<sub>2</sub> emissions in 2020. Potential savings from a program that was 100 percent effective in ensuring proper tire inflation are on the order of 96 millions gallons of fuel saved in 2010.

#### **4. Potential Emission Reductions**

The GHG emission benefit of this program is associated with the reduction in gallons of fuel consumed by California drivers. The reduction in gallons of fuel consumed is based upon 10 million vehicles visiting a repair facility at least once a year and having their tires checked and inflated to the manufacturer's recommended pressure<sup>2</sup>. Approximately 74 percent of vehicles in California have under inflated tires, of which, 27 percent have at least one tire severely under inflated (25 percent or more of the manufacturer's recommended pressure)<sup>1</sup>. On average, a vehicle tire loses approximately 1 PSI per month<sup>2</sup>. For every loss of 1 PSI in tire pressure, a corresponding loss in fuel economy of 0.4% can be expected<sup>2</sup>.

It is estimated that Californians will consume approximately 14.1 billion gallons of gasoline in 2010 and 16.2 billion gallons in 2020<sup>3</sup>. In 2010 (first year of implementation), the predicted reduction in the consumption of fuel is 61 million gallons which equates to 0.54 MMT of CO<sub>2</sub>. This is based on 27 percent of vehicles having at least one tire severely under-inflated, 47 percent having tires under inflated by 1 PSI, and 26 percent having the correct pressure<sup>1</sup>. In 2020, emissions reductions are expected to be lower due to the recommended strategy and outreach programs and the federal requirement for tire pressure monitoring systems in all new vehicles. The reduction in gallons of fuel consumed will be approximately 22.5 million gallons which equals 0.20 MMT of CO<sub>2</sub>.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Costs associated with this program include public outreach and education, equipment costs such as compressors and accessories, and labor. One study suggested the labor rate to check and inflate tires will be approximately \$3.75 per vehicle<sup>2</sup>. In addition, some vehicle repair facilities may be required to purchase an air compressor and accessories at an approximate cost of \$500<sup>4</sup>.

Retrofit technologies exist that can monitor tire pressure at costs ranging from \$20 to \$600 depending on the system and installation variables (i.e., make and model of vehicle, brakes, ABS, hourly installation rate, etc.)<sup>4</sup>. Additional staff work is needed to determine the feasibility and cost effectiveness of retrofits.

#### **6. Technical Feasibility**

There are no technology limitations for this strategy.

#### **7. Additional Considerations**

Several State and Federal agencies have public outreach websites that highlight the relationship between tire pressure and saving money (e.g., U.S. DOT – It All Adds Up, CEC – Fuel Efficient Tire Program, California's Energy Efficiency Program – Flex Your Power, IWMB – National Tire Safety Week). Enforcement of this type of strategy will be extremely difficult.

Affected Entities: California's vehicle repair facilities and refueling stations and vehicle owners.

Government Agencies to coordinate with: U.S. DOT, CEC, IWMB, and others as outreach information becomes available.



**8. Division:** Stationary Source Division  
**Staff Lead:** Theresa Anderson  
Wayne Sobieralski  
**Section Manager:** Mike Miguel  
**Branch Chief:** Mike Tollstrup

**9. References:**

<sup>1</sup> U.S. Department of Transportation, NPRM on Tire Pressure Monitoring System FMVSS No. 138, 09/2004

<sup>2</sup> California Inspection and Maintenance Review Committee, Review of the Smog Check Program, 11/2006

<sup>3</sup> Based on Air Resources Board's California Emissions Forecasting System, Population and Vehicle Trends Report, Statewide Daily Vehicle Fuel Consumption (Gasoline), EMFAC 2002, Version 2.2

<sup>4</sup> Based on retail quotes obtained by the Air Resources Board, 07/2007

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B11*  
ID NUMBER:        *EJAC- 11/ARB 2-22*  
TITLE:              *REQUIRE LOW GWP REFRIGERANTS FOR NEW MACS<sup>1</sup>*  
PROPONENT:       *2006 CAT REPORT AND ENVIRONMENTAL JUSTICE*  
                         *ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2010.

This strategy is also not a stand-alone measure. It is anticipated to be integrated into larger new measures focused on new vehicle GHG emission standards (e.g., *Pavley II* described as Summary # B33, page B-110 later in this appendix).

The central premise of the proposed strategy is the replacement of high global warming potential (GWP) refrigerants used in California's mobile air conditioning systems (MACS) with lower GWP alternatives that also represent better lifecycle climate performance (LCCP) than the current refrigerant. MACS in today's motor vehicles use nearly universally the refrigerant HFC-134a with a GWP of 1,300. A two-fold approach will be explored under the proposed new regulation. First, the core of the strategy would focus on developing new regulations requiring that new MACS use refrigerants with a lower GWP (e.g., 150 or less) in new vehicles currently not subject to the existing vehicle GHG emission standards (AB 1493). For vehicles subject to AB 1493, this strategy would explore further MACS improvements after the regulation is fully phased in 2016. Second, staff will explore the potential climate benefits from a universal phase out of HFC-134a (or other high GWP refrigerants) used in other remaining vehicle classes in the California fleet such as heavy-duty on- and off-road vehicles including new as well as in-use systems. Again, the identification of suitable alternatives would be based on lifecycle climate performance.

Alternative refrigerant development has been a highly contested arena in recent times. Driven primarily by Europe's landmark directive to phase out the use of HFC-134a in the MACSs of new vehicle types starting in 2011, several low GWP refrigerants are currently

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<sup>1</sup> New alternative low GWP refrigerants in MACS are desired to the extent that these alternatives have lifecycle climate performance (LCCP) that exceeds the performance of the current refrigerant HFC-134a. Thus, new low GWP refrigerants are sought in systems that leak less and are more efficient than current systems.

under investigation and evaluation for toxicity, safety, energy efficiency, and technical feasibility by multiple industry entities. Identification of an eligible replacement for the European car market, the largest in the world, would boost efforts in California and could accelerate the implementation of new regulations mitigating the impact of refrigerants in MACS.

### **3. Early Action Description**

This strategy explores the phase out of HFC-134a in all MACS in new vehicles certified for sale in California (heavy- and light-duty, on- and off-road) with the intent to reduce direct and indirect emission impacts and promote only the use of alternative refrigerants with superior lifecycle climate performance. Opportunities in the in-use fleet will also be evaluated.

Regulation of refrigerants is happening globally. The European Union (EU) is taking the lead. In 2006, the European Parliament and the Council decided that the dates for the phase-out of refrigerant HFC-134a in the European community shall be set at January 1, 2011 for new types of vehicles and January 1, 2017 for all new vehicles<sup>1</sup>. The US EPA's I-MAC Program<sup>2</sup> has generated significant debate and progress regarding alternative refrigerants and the options for the US car MACS market with the best lifecycle climate performance. Extensive cooperation between government agencies, NGOs, and industry is needed to accomplish this strategy and fully realize its benefits.

### **4. Potential Emission Reductions**

The proposed strategy was included in the Climate Action Team report of March 2006 and it emerged from ARB's regulatory work for the motor vehicle greenhouse gas emissions regulation (AB1493). That work suggests that potential GHG emission reductions for a universal phase out of HFC-134a in new and in-used MACS in California are on the order of 2.5 MMTCO<sub>2</sub>E by 2020. However, the uncertainty with the estimate is on the order of 50%.

### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Preliminary cost estimates were developed for the revisions to the Climate Action Team Report of March 2006 that ARB and other agencies are undertaking. The numbers generated for that report are first-order estimates based on simple assumptions gleaned from the published literature about alternative MACS. Only estimated capital costs were considered. Additional staff analysis is needed to determine operating costs, cost savings, and economic impacts. The air conditioning system life is expected to be the same as current systems. Capital costs for the introduction of new refrigerants in the California fleet were estimated to be on the order of \$150 million by in 2020 based on assumptions that changes begin to phase in around 2013. This estimate is based on an incremental cost per vehicle of €20 to €25 per LDV in 2003<sup>3</sup> and is also applied to the other vehicle categories. For the HFC-152a alternative refrigerant, it is not expected that maintenance costs will change significantly or that there would be cost implications when converting an existing HFC-134a system design to use HFC-152a since development is fairly advanced. Selection of some other alternative refrigerants, for example CO<sub>2</sub>, could be significantly costlier. Incremental energy consumption estimates are not presented here. The reference below cites a potential 10% reduction in energy consumption for the

HFC-152a alternative for LDVs, but this will almost certainly vary significantly with vehicle category, engine type, operating cycle, extent of optimization achieved during system redesign, etc. Also, energy consumption for some other alternative refrigerant selections, for example CO<sub>2</sub>-refrigerant systems, can actually show an increase under some operating conditions. Significant additional analysis is needed to enable and improve cost and performance estimates of the various alternative technologies.

## **6. Technical Feasibility**

New HFC refrigerants with GWP values less than 150, such as those currently under development for the US market by Honeywell and DuPont, and existing alternative refrigerants such as HFC-152a (with GWP approximately 120<sup>4</sup>) or R744 (CO<sub>2</sub>, GWP=1), are possible substitutes for HFC-134a in new vehicles. The feasibility of these low GWP refrigerants is being investigated and evaluated extensively by multiple entities. As suggested by the European directive, all indications are that a feasible refrigerant alternative to HFC-134a is eminent.

## **7. Additional Considerations**

The EU regulation timeline calls for the phase out of HFC-134a beginning with new vehicles types in 2011. Thus, auto makers serving that market face at present time a critical go, no-go decision point regarding refrigerant selection for their systems.

The outcome of the AB1493 legal challenges, including the pending California waiver request to the US EPA, will impact significantly the form and function of the measure as proposed.

Each alternative new refrigerant will be evaluated from a lifecycle emissions standpoint to ensure that the net impact on greenhouse gas emissions is properly characterized and in order to promote improvements not only on refrigerant containment to minimize leakage, but also in system performance to reduce the parasitic impact of the MACS on the vehicle engine.

Affected Entities: Vehicle owners and operators, vehicle manufacturers, mobile air conditioning system repair facilities, mobile air conditioning system and component manufacturers, and air conditioning refrigerant manufacturers.

Government Agencies to coordinate with: U.S. EPA and the European Commission.

<b>8. Division:</b>	Research Division
<b>Staff Lead:</b>	Pablo Cicero
<b>Section Manager:</b>	Tao Huai
<b>Branch Chief:</b>	Alberto Ayala

## **9. References:**

<sup>1</sup> Schulte-Braucks, R., "Implementation of the R134a Phase Out," 2006 Mobile Air Conditioning Summit, Saalfelden, Austria, Feb. 17, 2006.

<sup>2</sup> The I-MAC Program is a consortium of government, industry, academia, and other stakeholders led by the US EPA with the objective to develop superior and improved HFC-134a mobile air conditioning technology with 50% lower leakage and 30% greater efficiency than current production-ready systems.

<sup>3</sup> Alternative Refrigerants Assessment Workshop, Presentation at the SAE 2003 Alternative Refrigerant Systems Symposium, Phoenix, Arizona, July 14, 2003

<sup>4</sup> The GWP limit is intended to be that of HFC-152a, for which the IPCC 3rd Assessment Report suggested a 100-year forcing of 120. The more recent IPCC/TEAP Special Report on HFCs and PFCs suggests a direct forcing of 122.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B12*  
ID NUMBER:        *EJAC-12/ARB 2-23*  
TITLE:              *ADDITION OF AC LEAK TEST AND REPAIR REQUIREMENTS  
                                 TO SMOG CHECK*  
PROPONENT:       *2006 CAT REPORT AND ENVIRONMENTAL JUSTICE  
                                 ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 1<sup>st</sup> quarter of 2011.

The strategy proposes to explore the addition of a new motor vehicle air conditioning system (MVACS) leak test and repair requirements to the existing California Smog Check program for HFC-based MVACSS. To the extent that a cost-benefit analysis supports this measure, implementation will require the 1) identification, selection and verification of one or more reliable and low cost HFC refrigerant leak detectors to be used in the Smog Check station setting; 2) development of a new Refrigerant Leak Check I/M procedure and protocol; 3) new and additional training of the Smog Check technicians including achieving appropriate technician A/C repair certification; and 4) working with the Bureau of Automotive Repair (BAR) of the Department of Consumer Affairs (DCA) for mandating the new procedure to be integrated into the statewide Smog Check program. Research will be needed to evaluate the feasibility of the new test and extensive discussions among multiple stakeholders, including first and foremost BAR and legislature staff are anticipated. For this reasons, this strategies cannot be developed before 2010 to meet the definition of a discrete early action.

## 3. Early Action Description

The proposed strategy will explore the addition of a refrigerant leak check to the "pass" criteria for the California vehicular inspection and maintenance (I/M) program, Smog Check, for all vehicles that undergo the test. As a result, all vehicles that pass Smog Check would have MACS that are either nearly leak-free or empty and excluded from further use of the AC system unless the leak is repaired. Vehicles that are determined to have unacceptable leak rates would be required to be repaired as a condition for registration. A similar requirement is already in place and enforced by some local air quality management districts. Thus, the proposed early action seeks to expand these local requirements statewide.

#### **4. Potential Emission Reductions**

The proposed strategy was included in the Climate Action Team report of March 2006 and it emerged from ARB's regulatory work for the motor vehicle greenhouse gas emissions regulation (AB1493). That work suggests that potential GHG emission reductions for a leak test and repair program in California are on the order of 0.45 MMTCO<sub>2</sub>E by 2020. However, the uncertainty with the estimate is on the order of 50%.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Some preliminary, but incomplete cost information exists. In 2005, BAR licensed approximately 9,700 Smog Check stations and almost 14,000 Smog Check technicians. Approximately 9.2 million Smog Check inspections were conducted at these Smog Check stations in 2005<sup>1</sup>. Each Smog Check station would have additional one-time estimated expenditures of about \$200-\$300 for each hand-held HFC leak detector. Technician training for AC service certification would cost up to \$280 per person. Based on above information, the total cost for equipment and training in California would be approximately \$6M; \$2M for equipment and \$4M for training. In addition, the leak test would add time to the current Smog Check test, impacting the shop and the customer. Finally, in the case where a MVACS is found to require repairs, the customer would incur additional and potentially significant costs. Technology is also rapidly evolving and improving. Today's MVACS are much tighter than older system and the industry, in response in part to regulatory interest, is proactively seeking refrigerant leak improvements in the system sold to car makers. These factors and many other economic impacts have not been thoroughly researched and additional time is needed to complete a full cost-benefit analysis of the proposed measure.

#### **6. Technical Feasibility**

There are several commercially available hand-held HFC leak detectors or "sniffers" on the market. These detectors are currently in use by the AC service and repair industry. The detectors would need to be demonstrated capable of reliable and accurate determination of refrigerant leaks in the Smog Check station setting at rates as determined in the proposed strategy. All MVACSs leak refrigerant naturally as the systems are not hermetic and deterioration is expected. A pass criterion based on a reasonable threshold leak rate requiring professional AC servicing or system disabling needs to be defined rigorously, perhaps as a fraction of the original system charge or other appropriate metric. The current commercially available sniffers can detect a concentration of refrigerant in a sample volume of some currently unknown combination of leakage and ambient air. Further investigation is needed to define the pass criterion for either a threshold concentration or leak rate.

Currently, the service industry standard established by the Society of Automotive Engineers, SAE J1628 Standard<sup>2</sup>, requires charging the AC with sufficient refrigerant prior to conducting a leak check. This procedure might be not suitable for the implementation of this strategy because the leak check would be conducted at Smog Check Stations, which normally do not have AC charging equipment. A new leak check protocol would be necessary. The measure must also require professional AC servicing or system disabling when leakage is found. Other methods, such as injection of dye gases, are under investigation.

## 7. Additional Considerations

ARB and BAR would need to work closely as both agencies share responsibility for Smog Check. Roles and responsibilities for both agencies in the context of the proposed strategy should further analysis suggest to proceed to full development and implementation will need to be defined.

**Affected Entities:** The I/M program operators at the Smog Check stations, the owners of all vehicles required to undergo I/M, shops that repair vehicular AC systems, BAR, and DCA, The I/M operators would have to become certified for AC maintenance, purchase new instruments for detection of HFC emissions, and adopt the new protocols for including the new test into the Smog Check procedure. BAR and DCA would be expected to develop a new I/M procedure and protocol to accommodate the new HFC leak check. The agencies would be impacted with additional enforcement requirements for the proposed strategy.

<b>8. Division:</b>	Research Division
<b>Staff Lead:</b>	Tao Zhan
<b>Section Manager:</b>	Tao Huai
<b>Branch Chief:</b>	Alberto Ayala

## 9. References:

<sup>1</sup> *California Inspection and Maintenance Review Committee, Review of the Smog Check Program, September 29, 2006. [http://www.imreview.ca.gov/reports/final\\_report.pdf](http://www.imreview.ca.gov/reports/final_report.pdf)*

<sup>2</sup> *SAE J1628, Technician Procedure for Using Electronic Refrigerant Leak Detectors for Service of Mobile Air-Conditioning Systems, November 1998.*



# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B13*  
ID NUMBER:         *EA B-1, B-2*  
TITLE:                *WAFFLEMAT SYSTEMS*  
PROPONENT:        *STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009.

## 3. Early Action Description

The WAFFLEMAT System (registered trademark) is a set of interconnected WAFFLEBOXES equally spaced within the area of a new foundation. Concrete is then poured over the WAFFLEBOXES to create a concrete slab, thereby decreasing the volume of concrete used on new foundations and indirectly reducing the amount of CO<sub>2</sub> emitted from the production and transportation of Portland cement. The WAFFLEMAT System is advertised by the manufacturer to reduce CO<sub>2</sub> emissions by 20% when used for new residential home concrete slab foundations built on "marginal" soils (e.g., expansive soil, rocky soil, and/or hydro-collapsible soil), where an increase in slab thickness is required. The 20% CO<sub>2</sub> emission reduction was calculated by comparing the WAFFLEMAT System to a 10 inch uniform thickness slab. The actual percentages of CO<sub>2</sub> emission reductions will vary depending on the type and thickness of the slab which the WAFFLEMATs are compared against.

## 4. Potential Emission Reductions

Based on information from the manufacturer, ARB staff estimated that utilization of the WAFFLEMAT System on new residential home construction may reduce 3.5 metric tons (MT) of CO<sub>2</sub> emissions per slab for a 2,000 square foot home. If one assumes that 200,000 new residential homes are built each year in California, 25% of those homes are located on marginal soils and all 25% of those homes utilize the WAFFLEMAT System, there may be an annual CO<sub>2</sub> emission reduction of 0.18 million MT. Using 2008 as the baseline year, by 2010 there will be a cumulative 0.35 million MT CO<sub>2</sub> emission reduction and by 2020 there will be a 2.1 million MT CO<sub>2</sub> emission reduction. The primary purpose of the WAFFLEMAT System is to displace the total amount of concrete needed in a residential foundation and still meet or exceed construction requirements. In theory, if less concrete is needed, less needs to be produced. Emission reductions of oxides of nitrogen (NO<sub>x</sub>), particulate matter (PM), hydrocarbons, and carbon monoxide

(CO) will also be achieved with the use of the WAFFLEMAT System if it is assumed that overall less concrete will have to be used.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The WAFFLEMAT System is estimated to cost \$1.20 per square foot of foundation. When compared to the cost of concrete for a 10 inch uniform thickness slab foundation on a 2,000 square foot footprint, the WAFFLEMAT System and its reduced volume of concrete may increase the price of a foundation by \$1,200. This equates to an approximate cost effectiveness of \$340 per MTCO<sub>2</sub>E. Additionally, the WAFFLEMAT System is advertised to provide cost savings in labor and ground preparation. ARB staff does not have information to quantify labor and ground preparation cost savings at this time.

The use of the WAFFLEMAT System is limited to use with marginal soils that generally require thicker slab foundations. Use of the WAFFLEMAT System with good soils may result in an increased use of concrete.

## **6. Technical Feasibility**

The WAFFLEMAT System was developed in 1995 and has had over 6.5 million square feet of concrete poured on it without one structural callback or failure. Pacific Housing Systems, Inc. (the distributor) and two engineering firms conducted studies to determine the design compliance and capability of the WAFFLEMAT System. Their results showed that the WAFFLEMAT System is technically feasible and has advantages over the traditional slab foundation in areas with marginal soils. Those advantages include, but are not limited to: the slab's ability to withstand larger cantilevers, reductions in labor costs, provides a more definite value for concrete costs, and reductions in overall installation time.

## **7. Additional Considerations**

- The use of the WAFFLEMAT System does not ensure reduction in the production of cement. CO<sub>2</sub> emission reductions are achieved with the use of the WAFFLEMAT System if cement plant operators reduce the production of Portland cement.
- Currently, not every new single-family residence home is built on marginal soils. We are not certain what percentage of new homes is built on marginal soils versus good soils. This could impact the CO<sub>2</sub> emission reduction estimates.
- Geotechnical engineers should be employed to recommend which foundation is suited for a site's soil type.
- ARB will need to work with other state and local agencies to ensure that the use of the WAFFLEMAT System meets building codes.
- ARB staff needs to work closely with legal to determine scope of authority for requiring the use of WAFFLEMAT Systems on new construction.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Alicia Violet
<b>Section Manager:</b>	Todd Wong
<b>Branch Chief:</b>	Michael Tollstrup

## **9. References:**

*Altshuler, Sam. "Lowering the Carbon Footprint When Using the Wafflemat System for Concrete Slab Foundations." Suncoast Post-tension - Pacific Housing System, Inc.. February 2007.*

*Charlton, Aurora. "Structural Engineering Case Study Report: Wafflemat Slab On Grade Post Tensioned Foundation System." Front Range Engineering, LLC. August 2006.*

*Cook, John. "Wafflemat System Design Considerations." Pacific Housing Systems, Inc. and MKM and Associates. April 2006.*

*Richards, Tom. "A Sales/Marketing Comparison and Positioning Statement of the WAFFLEMAT System to Post-Tensioned Slabs." Pacific Housing Systems, Inc.. March 2006.*

*Richards, Tom. Telephone Interview and email. July 16 and 24, 2007.*

*State of California – Business, Transportation, and Housing Agency; Department of Housing and Community Development. "California's Deepening Housing Crisis." June 2007.*

*Treanor, Rich. "Wafflemat Frequently Asked Questions." Pacific Housing Systems, Inc.. March 2006.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B14*  
ID NUMBER:        *EJAC-15/ARB A-15*  
TITLE:              *GREEN SHIP INCENTIVE PROGRAM*  
PROPONENT:       *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

This measure is focused on reducing emissions of diesel particulate matter (PM) and nitrogen oxides (NOx) by phasing in the installation of emission control devices on new or existing vessels. While reductions in NOx and the elemental carbon portion of PM may reduce global warming, other aspects of this measure may contribute to it. For example, some of the emission control devices that can be used to significantly reduce PM and NOx will have fuel penalties associated with them, resulting in higher carbon dioxide (CO<sub>2</sub>) emissions. Other control strategies may reduce fuel consumption and CO<sub>2</sub> emissions. However, the overall effect of this measure on GHG emissions is expected to be minimal.

We do intend to analyze the potential to modify this measure to also address GHG emissions. However, for several reasons, this analysis cannot be conducted in a short timeframe due to the complexity of the technical and jurisdictional issues. For example, more advanced ship hull and propeller designs have been proposed as a way to reduce fuel consumption and CO<sub>2</sub> emissions in some studies. However, it is uncertain whether we can influence design changes on vessels built outside the United States. In addition, it is expected that ship operators would already incorporate such changes to reduce their operating expenses unless there are extremely high capital cost impacts or other barriers. Furthermore, to fully address GHG emissions, a review of all the various emissions from ships and their impact on global warming would need to be conducted. The relevant emissions would include CO<sub>2</sub>, methane, black carbon PM, sulfur oxides, refrigerants, and NOx. Some of these emissions contribute to global warming, while others have the opposite effect. In addition, some emissions effects may be localized whereas others are not. Finally, the potential control strategies for each type of emissions would need to be determined.

## 3. Early Action Description

This measure is included in the ARB's Emission Reduction Plan for Ports and Goods Movement. The measure, as currently proposed, seeks to reduce emissions of PM and

NOx by phasing in the use of cleaner ships at California ports. There are two levels of clean ships: "30/30 vessels" that are 30 percent lower in NOx and PM than current vessels meeting International Maritime Organization (IMO) standards, and "60/90 ships" that are 60 percent lower in PM and 90 percent lower in NOx than IMO compliant vessels. By 2020, the goal is to have clean ships make 90 percent of all California port visits, with 30/30 vessels making 40 percent of ship visits, and 60/90 vessels making 50 percent of ship visits. The ship operator would be expected to choose the specific emission control devices. Examples of potential emission controls include selective catalytic reduction, more advanced fuel injectors, fuel/water emulsions, onboard water scrubbers, and cylinder lubricant control systems. This measure seeks to encourage or direct ship operators to either retrofit existing vessels or incorporate emission control devices into new build vessels. The measure could be an incentive program, a voluntary agreement, a regulation, or use some other mechanism.

Although this measure is currently designed to focus on PM and NOx emissions, it could be modified to also control GHG emissions. As a first step, the impact of the existing NOx and PM controls on GHG emissions should be evaluated. Next, additional opportunities to address GHG emissions would need to be investigated. Existing studies suggest a number of potential control measures that would reduce fuel consumption and therefore CO<sub>2</sub> emissions (as well as other pollutants). These measures include the incorporation of optimized hull and propeller designs in new ship builds, operational changes focused on fuel efficiency, new methods of hull maintenance to reduce fouling, and the use of wind, solar power, and fuel cells.

#### **4. Potential Emission Reductions**

As mentioned above, this measure is not currently designed to reduce GHG emissions, and the potential impact on GHG emissions has not been quantified. Staff believes that the impact will range from a slight increase to a slight reduction in GHG emissions.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

TBD

#### **6. Technical Feasibility**

Improved engine design in new marine engine can improve combustion characteristics and reduce CO<sub>2</sub> emissions. However the impact of control measures to reduce PM, NOx, and SOx may increase CO<sub>2</sub> emissions.

#### **7. Additional Considerations**

See discussion under "**Staff Recommendation.**"

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Paul Milkey
<b>Section Manager:</b>	Peggy Taricco
<b>Branch Chief:</b>	Daniel Donohoue

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B15*  
ID NUMBER: *EJAC-16/ARB A-19*  
TITLE: *ANTI-IDLING REQUIREMENT FOR CARGO HANDLING EQUIPMENT AT PORTS*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

Staff believes significant informational gaps or constraints exist due to the dynamics of mobile cargo handling equipment operations, union labor contracts, and safety and security concerns, which prevent the implementation of an anti-idling requirement within the timeframe required for early action measures. The very nature of these operations makes it extremely difficult to determine what constitutes unnecessary idling. To illustrate, cargo handling equipment is often required to move rapidly from one location to another; and some equipment, such as rubber-tired gantry (RTG) cranes, have operator cabs approximately 50 feet above the ground, making it unsafe for the operator to exit the cab (i.e., idling limitations prevent air conditioner operation). It is inherently problematic and may complicate the development of idling restrictions at port terminals because they are generally larger than 200 acres and at any given time may have hundreds of pieces of equipment operating. All of these issues need further evaluation and many concerns need to be addressed.

In order to pursue this strategy, it would be necessary to collect complete equipment and facility specific operational data by facility type and/or operation. This data must be analyzed to identify similarities/dissimilarities in idling (equipment specific) at each facility and determine whether certain idling durations can be minimized and still not inhibit the functionality or efficiency of their operation. The next step would be to take this information and determine the extent to which cargo handling equipment engines idle, and what fraction of this total could be considered as unnecessary idling. Data logging would be the recommended method of collecting the various operational data needs. However, the variability in facility operations and the fact that the data must be equipment specific, taking into account the duty cycle of the engine, makes this a significant challenge, albeit achievable. While many data gaps prevent us from determining what is considered unnecessary idling at existing port or intermodal rail yard operations at this time, upcoming emission control retrofit demonstration programs for port equipment (such as top picks, side picks, RTG cranes, and reach stackers) include data logging components that will provide some data to help us evaluate this issue.

These efforts will be undertaken over the next two years and will help inform the decision on the appropriateness of pursuing an anti-idling measure.

### **3. Action Description**

This early action strategy proposes to adopt a statewide regulation to limit or prohibit unnecessary idling of mobile cargo handling equipment that operates at California ports or intermodal rail yards. The limiting or prohibiting of unnecessary idling will result in reduced fuel usage, fuel cost savings, and environmental/health benefits. A reduction in fuel consumption should result in greenhouse gas emission reductions, as well as, reductions of criteria or toxic air contaminants. However, the magnitude of these reductions is unquantifiable at this time due to lack of operational data. In the event it is determined feasible to establish restrictions on idling, the proposed strategy could be considered as amendments to the existing regulation for cargo handling equipment at ports and intermodal rail yards.

### **4. Potential Emission Reductions**

The potential greenhouse gas emission reduction potential of idling restrictions on cargo handling equipment cannot be quantified with any certainty at this time, but is anticipated to be low given the limited number of cargo handling equipment statewide.

### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Information is not available to estimate costs or economic impacts of this proposed Early Actions Strategy. However, the sectors that may incur costs from a restriction on idling include engine manufacturers, distributors, dealers, facility owners or operators, shipping lines, industries that contract with the ports or intermodal rail yards for movement of goods, and ultimately the end-user of the applicable consumer products.

### **6. Technical Feasibility**

Limiting or prohibiting engine idling of mobile cargo handling equipment is likely to be technically feasible. However, the environmental benefits, cost effectiveness, emission reduction potential, and potential economic impacts on their operations can only be determined once more research and data collection has been completed and that data substantiates the extent to which unnecessary idling occurs. (See discussion under “**Staff Recommendation.**”)

### **7. Additional Considerations**

See discussion under “**Staff Recommendation.**”

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Lisa Williams
<b>Section Manager:</b>	Cherie Rainforth
<b>Branch Chief:</b>	Dan Donohoue

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B16*  
ID NUMBER:        *EJAC-26/ARB A-17*  
TITLE:              *ELECTRIFICATION OF AIRPORT GROUND SUPPORT  
EQUIPMENT*  
PROPONENT:       *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering this recommendation.

Those categories of ground support equipment (GSE) most amenable to being electric powered already have a high percentage of zero emission vehicles (ZEV). There may be some other categories of GSE that could be candidates for either ZEV technology or hybrid electric vehicle technology. Assessing feasibility for the early action timeframe can be addressed over the next year. The potential greenhouse gas emission reductions from this discrete strategy appear to be negligibly small because the number of affected vehicles is small.

## 3. Action Description

This Early Action Strategy proposes to accelerate the replacement of airport GSE by specifying electrification. The proponents of this measure did not provide any details on the dates for the accelerated electrification, the categories of GSE units specifically targeted, or the percentage of electrification required.

This measure would overlap with the implementation of two recently-adopted ARB regulations for off-road equipment that include GSE - large spark ignited (LSI) engines and in-use diesel equipment. The LSI regulation, that became effective May 12, 2007, incorporates requirements of the recently-terminated Memorandum of Understanding (MOU) with the airline industry that calls for 30% electrification of the airline-owned GSE fleet in the South Coast Air Basin by 2010. The LSI regulation applies to gasoline and liquid natural gas-powered GSE. On July 27, 2007, ARB adopted an in-use diesel off-road equipment regulation that requires diesel equipment fleet owners to reduce their fleet-average emissions of NOx and PM in future years by turnover of a specified percentage of their fleet horsepower. Until staff sorts through how this measure would mesh with these regulations, it is unclear how or if there would be conflicts between the measure and the regulations.



In addition to these two ARB regulations, the South Coast Air Quality Management District (District) has proposed a statewide measure for emission reductions from GSE in the South Coast Air Basin by requiring accelerated zero emission vehicle penetration and more stringent fleet-average emission standards for GSE. The District's proposed measure would require airlines in the South Coast to increase the percentage of ZEVs in their GSE fleets from 30% to 45% by 2014, an increase of 15% additional ZEV penetration.

#### **4. Potential Emission Reductions**

If the measure were to achieve an additional 15% electrification of the GSE fleet by 2014 as suggested by the SCAQMD, this measure would represent about 1,200 additional electric GSE units. The most likely categories of GSE that might be amenable for electrification include push back tractors and cargo loaders for which we have estimated energy requirements, fuel use, and electricity use for replacement ZEV units. Assuming that each diesel unit on average uses 2,800 gallons of diesel fuel per year (about 3.5 gallons per hour), this represents an emission reduction of 0.036 million metric tons per year of CO<sub>2</sub> emissions. Providing electricity from the California utility grid to recharge batteries for replacement ZEV units would require approximately 67 million kWh per year and would emit approximately 0.027 million metric tons of CO<sub>2</sub> annually, assuming each kilowatt-hour would require on average about 400 grams of CO<sub>2</sub> (Source: CEC). Thus, the net expected CO<sub>2</sub> emission benefit from this proposed measure would be on the order of 0.007 MMTCO<sub>2</sub>E per year.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

If we assume that the Early Action Strategy would require an additional 15 % ZEV vehicles in the GSE fleets, the airlines could incur significant costs, since the requirement would mandate the early replacement of nearly 1,200 units by 2014. Assuming average unit costs for ZEV GSE equal to \$60,000, the total cost of the measure would be on the order of \$70 million. For units that reach the end of their lifetime during this period, there would be no lost revenue from early replacement, but for units that have to be retired early, there would be a revenue impact on airlines.

#### **6. Technical Feasibility**

Airlines have already undertaken substantial electrification of certain categories of the GSE fleet including baggage tractors and belt loaders representing an estimated 46% of the total statewide GSE fleet, mostly in the South Coast Air Basin and at Sacramento International Airport. Other categories of GSE that might be targets for electrification are pushback tractors and cargo loaders and cargo tractors, representing about 41% of the 200 GSE fleet. Pushback tractors represent almost 70% of the potential CO<sub>2</sub> emissions, while cargo loading and tractor equipment represents about 30% of potential CO<sub>2</sub> emissions. Electric pushback tractors are currently deployed in limited quantities in airline GSE fleets, while electric battery powered cargo loading equipment and cargo tractors have not yet been successfully demonstrated.

#### **7. Additional Considerations**

None.

**8. Division:** Planning and Technical Support Division  
**Staff Lead:** Jim Lerner  
**Section Manager:** Gary Honcoop  
**Branch Chief:** Kurt Karperos

**9. References:**

*New Emission Standards, Fleet Requirements, and Test Procedures for Forklifts and Other Industrial Equipment, ARB's LSI Regulation, effective May 12, 2007*

*Regulation for In-use Off-Road Diesel Vehicles, approved by ARB July 27, 2007*

*Final Air Quality Management Plan, approved by SCAQMD June, 2007, Off-Road Measure 04*

*California Electricity Consumption by County in 2005, CEC.*

*Inventory of California Greenhouse Gas Emissions and Sinks: 1990-2004, Final Staff Report, December 22, 2006, CEC.*

## **Staff Analysis of Proposed Early Action for Climate Change Mitigation in California**

### **1. Early Actions Strategy Name and Proponent**

SUMMARY #            *B17*  
ID NUMBER:        *EJAC-18*  
TITLE:                *ELECTRIFICATION OF CONSTRUCTION EQUIPMENT AT  
                              URBAN SITES*  
PROONENT:        *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

### **2. Staff Recommendation**

The ARB recently adopted an off-road diesel rule at its July 2007 Board hearing. This regulatory measure is believed to address the recommendations of the Environmental Justice Advisory Committee regarding the electrification of construction equipment at urban sites. That is because the measure requires or allows for the use of lower emission technologies including electrified equipment.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B18*  
ID NUMBER:        *EJAC-19*  
TITLE:              *HYBRIDIZATION OF MEDIUM- AND HEAVY-DUTY VEHICLES*  
PROPONENT:       *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 1<sup>ST</sup> quarter of 2011.

ARB staff was asked to investigate the feasibility of "hybrid electric technology for medium- and heavy-duty trucks" as an early action item to address greenhouse gas (GHG) emission reductions mandated by Assembly Bill 32. Medium duty trucks are trucks with gross vehicle weight rating (GVWR) between 8,501 and 14,000 pounds and heavy-duty trucks are 14,001 pounds and greater. Staff's evaluation focuses on trucks with GVWR greater than 10,000 pounds, which hereinafter are referred to as heavy-duty trucks.

Despite the wide spread presence of hybrid electric technology in the passenger car industry, heavy-duty hybrid technology for commercial trucks are still in the pre-production development stage. The major factors hindering a rapid introduction of cost-effective hybrid technology in the heavy-duty vehicle sector are the high incremental cost and risk aversion by both hybrid builders and buyers.

Many of the present prototype heavy-duty hybrid vehicles use off-the-shelf components that are not designed and optimized for on-road heavy-duty hybrid vehicles. Some hybrid components are not commercially available and must be custom designed for the application. These components significantly increase the cost of the hybrid system due to the low production volumes. Also, reliability and maintainability of hybrid trucks are still being tested and long term durability of hybrid trucks has not been demonstrated for most applications.

Staff anticipates that hybrid technology will become available in the next 5 or more years as a commercial product for applications on urban delivery, utility, and other specialty work trucks with a potential to provide significant greenhouse gas emission reductions by 2020.

### **3. Early Action Description**

Adopt a regulation and/or incentive program to take advantage of emerging hybrid electric technology for heavy-duty trucks.

Hybrid electric technology offers the potential to significantly improve fuel efficiency and performance while reducing emissions. However, these benefits are highly dependent on the duty cycle of the truck application. Hybrid technology provides the greatest benefit when used in vocational applications that have significant urban, stop-and-go driving, idling, and power take-off operations in their duty cycle. Such applications include parcel delivery trucks and vans, utility trucks, garbage trucks, transit buses, and other vocational work trucks. Line haul trucks are typically operated for long periods of time at high speed and load cruise driving modes and therefore, hybrid technology may not be as beneficial for this type of truck.

Several governmental and non-governmental organizations have been sponsoring research and developing programs that will bring together hybrid developers, truck and engine manufacturers, and truck users in an effort to speed up the introduction of heavy-duty hybrid technology into the marketplace.

Among the governmental organizations, the United States Department of Energy (DOE) has initiated a cost shared research and development program for advanced heavy-duty hybrid propulsion systems that will focus on improving fuel efficiency of heavy duty trucks and buses. DOE is funding approximately \$4 million per fiscal year of cost shared projects with the heavy-duty hybrid industry (50/50 cost share) on this program<sup>1</sup>.

The United States Department of Transportation (DOT) in partnership with the North American Bus Industries, invested over \$50 million, in a program that demonstrated fuel efficiency improvements of a transit bus through hybrid propulsion and weight reduction using composite materials. In addition to investing in other hybrid and fuel cell demonstration programs, DOT also continues to fund the purchase of advanced hybrid electric transit buses<sup>1</sup>.

The United States Department of Defense is also a major sponsor in the development of heavy-duty hybrid technologies for combat vehicles and trucks.

The United States Environmental Protection Agency (U.S. EPA) has sponsored a program to develop and demonstrate the benefits of a hydraulic hybrid propulsion technology which is an alternative to hybrid electric propulsion. This system captures and stores a large portion of the braking energy by pumping hydraulic fluid into a high pressure hydraulic fluid accumulator and pressurizing an inert gas. The energy stored in the high pressure fluid is then used to help propel the vehicle during the next vehicle acceleration event<sup>2</sup>.

Among the non-governmental organizations are the WestStart-CALSTART operated Hybrid Truck Users Forum (HTUF) and the North West Hybrid Truck Consortium. HTUF assists truck users and hybrid truck makers to move to pre-production manufacturing levels and deployment and reduce overall costs by creating common fleet requirements and joint purchase commitments. Under the HTUF program, working groups that are currently active include the Parcel Delivery Working Group, the Utility Working Group, the Refuse Truck Working Group, and the Shuttle Bus Working Group<sup>3</sup>.

The Hybrid Parcel Delivery Truck Working Group focuses on Class 4 to 6 urban parcel delivery trucks and includes members from several major parcel delivery fleets in North America such as Federal Express (FedEx), United Parcel Service (UPS), Purolator Express, and the United States Postal Service (U.S. PS). FedEx was the first truck operator to test parcel hybrid electric trucks. It put 18 hybrid electric trucks on the road in 2005, 75 more in 2006 and is currently considering 75 more. Purolator Express has 10 hybrid electric parcel trucks and plans to add 115 trucks this year. UPS also plans to acquire 50 Eaton hydraulic hybrid trucks this year<sup>3</sup>.

The Hybrid Utility Working Group is made up of 14 fleets and focuses on Class 5 to 7 utility and specialty work trucks. The work group has deployed 24 utility trucks nationwide and preliminary results indicate fuel savings ranging between 10 to 50 percent<sup>3</sup>.

The Hybrid Refuse Working Group consists of 7 private and municipal refuse truck fleets. The purpose of this working group is to develop a common chassis and vehicle performance specifications in an effort to speed up the introduction of hybrid trucks for refuse fleet operations. In May 2007, the group released a request for proposals to purchase and deploy 8 preproduction hybrid refuse trucks for assessment<sup>3</sup>.

The Northwest Hybrid Truck Consortium is a coalition of several county and city governments, and utility companies located in the state of Washington. The group works together with HTUF to identify hybrid opportunities and raise regional and state funding for hybrid deployment. In 2006, the consortium acquired \$250,000 in funding from the U.S. EPA's West Coast Collaborative project, to support early hybrid truck deployments by reducing the incremental cost of the purchased hybrid trucks<sup>4</sup>.

#### 4. Potential Emission Reductions

To understand the potential of hybrid technology in reducing GHG emissions, staff estimated GHG emission reductions in 2020. Assuming that all new Class 3 to 5 (10,001 to 19,500 lbs) trucks sold in California beginning in 2015, use hybrid technology, the GHG emission reductions from these trucks are estimated to be 0.5 MMT of CO<sub>2</sub>e in 2020. These hybrid trucks represent 20 percent of the total California fleet in the same class and their vehicle miles traveled represents 30 percent of the total California fleet of the same class. To put this in perspective, if 100 percent of the Class 3 to 5 trucks were hybrids in 2020, the potential GHG emission reduction could be up to 1.7 MMT of CO<sub>2</sub>e.

**Table 1**

	CY 2020 (MY 2015-2020)	CY 2020 (ALL MYS)	
Vehicles (10,001 to 19,500 lbs)	53,421	273,739	- Fuel economy improvement: 35% - Base truck fuel economy: 7.2 mpg
Daily Vehicle Miles Travel	3,694,200	12,166,000	
GHGs Reduced in 2020 in MMT of CO <sub>2</sub> e	0.5	1.7	

## 5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities

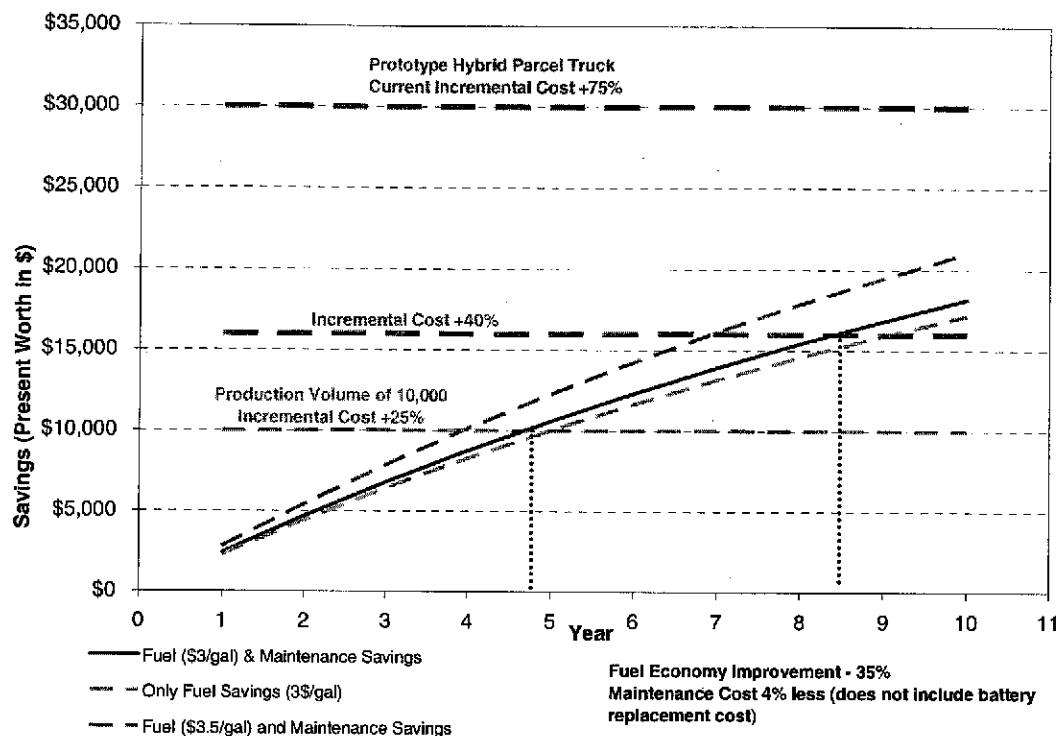
Table 2 compares a base truck with a "replacement" hybrid truck. As shown in the comments column of the table, the data were obtained from different sources. Incremental cost and in-use performance data were obtained from a hybrid truck builder and DOE published reports for hybrid buses and CNG trucks.

Table 2

	Base Diesel Truck	Parcel Hybrid Truck	Comments
Cost (\$)	\$40,000	\$70,000	- Cost of the base truck is from a truck dealership. - Incremental cost is from a hybrid builder: \$30,000 (75% above cost of base truck) for preproduction parcel trucks. (\$10,000, or 25% above cost of base truck for production volume of 10,000 trucks or more)
Fuel Economy (mpg)	7	9.5	Fuel economy improvement 35% Base truck fuel economy is assumed to be 7 mpg.
Fuel Cost (\$/gal)	\$3.00	\$3.00	In estimating fuel savings, the fuel price per gallon is assumed to remain constant during the 10 year lifetime period of the truck.
Annual VMT (miles)	22,000	22,000	Source: Parcel delivery truck feet operator
Life of the vehicle (years)	10	10	Source: Parcel delivery truck feet operator
Maintenance Cost	Unknown	Unknown	Being pre-production vehicles, the parcel fleet operator has not realized maintenance savings because of problems in software, transmission, parking brake, etc.
Assumed maintenance costs: (\$/mile)	\$0.16	\$0.15	Base truck maintenance \$0.16/mi <sup>5</sup> Hybrid truck maintenance cost is assumed 4% less – considers only labor and parts cost without battery replacement <sup>6</sup>

Figure 1 shows the savings realized from fuel economy improvements and reduced maintenance needs for the 10-year life of the parcel delivery truck. Future year savings were converted into 2007 dollars using a 7 percent discount rate. Assuming a 75 percent incremental cost difference, the chart shows that the preproduction hybrid parcel truck never recovers the incremental cost from fuel and maintenance savings. If production volume increases and the incremental cost drops to 25 percent of the cost of the base truck, then the hybrid truck will recover the incremental cost within 4 to 5 years. Note that in Figure 1 the maintenance cost for the hybrid truck is assumed to be 4% less than the base truck and does not include battery replacement.

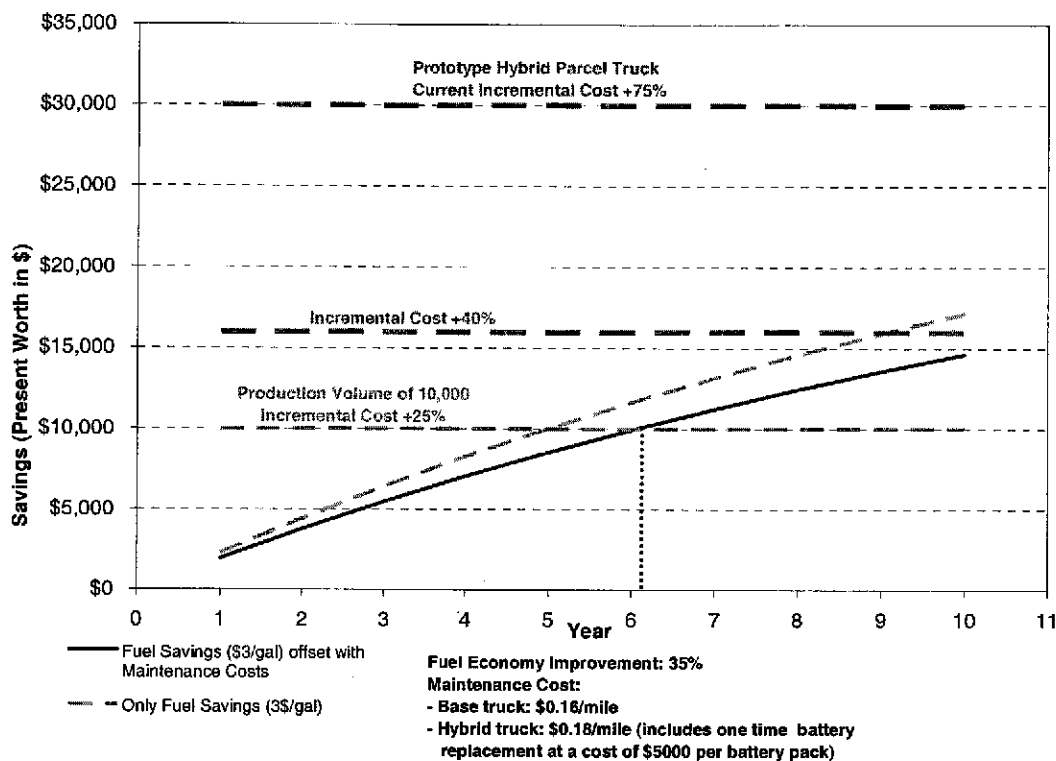
Figure 1



According to one hybrid truck builder, the hybrid parcel delivery truck equipped with nickel metal hydride (NiMH) will require a one-time battery replacement during its life. The replacement battery pack costs between \$5,000 to \$8,000. Adding this cost to the maintenance cost of the hybrid truck results in \$0.18/mile which is 10 percent higher than that of the base truck. Figure 2, below, shows the savings and payback period for this truck. It can be seen that the payback period for the high volume production hybrid truck (incremental cost of 25 percent) becomes 6 years.



Figure 2



6. Division: Mobile Source Control Division  
Staff Lead: Daniel Hawelti  
Section Manager: Stephan Lemieux  
Branch Chief: Michael Carter

## 7. References:

- <sup>1</sup> U.S. Department of Energy. "21<sup>st</sup> Century Truck Partnership: Roadmap and Technical White Papers", Report No.: 21CTP-0003. December 2006. ([http://www1.eere.energy.gov/vehiclesandfuels/pdfs/program/21ctp\\_roadmap\\_2007.pdf](http://www1.eere.energy.gov/vehiclesandfuels/pdfs/program/21ctp_roadmap_2007.pdf))
- <sup>2</sup> U.S. Environmental Protection Agency. "World's First Full Hydraulic Hybrid in a Delivery Truck" EPA420-F-06-054, June 2006. (<http://www.epa.gov/otaq/technology/420f06054.pdf>)
- <sup>3</sup> WestStart-CALSTART. "Hybrid Truck Users Forum". (website: <http://www.calstart.org/programs/htuf/>, accessed August 6, 2007)
- <sup>4</sup> West Coast Collaborative. "Northwest Hybrid Truck Consortium" (website: <http://www.westcoastdiesel.org/grants/wa-hybrid-trucks.htm>, accessed: August 6, 2007)
- <sup>5</sup> Chandler, K. and K. Walkowic. . "King County Metro Transit Hybrid Articulated Buses: Final Evaluation Results", U.S. DOE Technical Report: NREL/TP-540-40585. December 2006. ([http://www1.eere.energy.gov/vehiclesandfuels/avta/pdfs/heavy/king\\_co\\_final\\_12-06.pdf](http://www1.eere.energy.gov/vehiclesandfuels/avta/pdfs/heavy/king_co_final_12-06.pdf))
- <sup>6</sup> Chandler, K., K. Walkowic, and Nigel Clark. "United Parcel Service (UPS) CNG Truck Fleet: Final Results", August, 2002. (<http://205.168.79.26/vehiclesandfuels/ngvtf/pdfs/31227.pdf>)

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B19*  
ID NUMBER:        *EA B-1, B-2*  
TITLE:              *CEMENT (A): ENERGY EFFICIENCY OF CALIFORNIA CEMENT  
   FACILITIES*  
PROPONENT:       *STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure is recommended for addition to the list of early actions. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2010

Staff assessment indicates that significant near term carbon dioxide (CO<sub>2</sub>) reductions might be obtained by implementing energy efficient practices and technologies at California's cement facilities.

A proposed measure to consider greater reduction from low-carbon fuels in the cement sector is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation, which could entail large cost impacts on cement production in California.

## 3. Early Action Description

California's eleven cement facilities manufacture between 10 to 15 percent of the United States cement production. Annually, these eleven facilities use large amounts of energy: 1440 gigawatt hours (GWh) of electricity (7.2% of total energy used), 17.6 million therms of natural gas (2.6%), 2.3 million tons of coal (87.9%), 0.25 tons of coke (<0.1%), and burns 5.9 million tires<sup>1</sup> (2.3%). The three sources that result in CO<sub>2</sub> emissions from cement facilities are: 1) direct emissions from fuel combustion, 2) direct emissions from limestone calcination, and 3) indirect emissions from electricity use. Reducing CO<sub>2</sub> emissions from fuel combustion, calcination, and electricity use requires facilities to convert to using a low-carbon fuel, decrease fuel consumption, and improve energy efficiency practices and technologies in cement production<sup>2</sup>.

## 4. Potential Emission Reductions

In 2004, CO<sub>2</sub> emissions from fuel combustion, limestone calcination, and electricity use are estimated at 10.8 million metric tons of CO<sub>2</sub> equivalent per year (MMTCO<sub>2</sub>E). Staff estimates that CO<sub>2</sub> emissions from fuel combustion are 4.1 MMTCO<sub>2</sub>E, limestone calcination 5.9 MMTCO<sub>2</sub>E, and electricity use at 0.8 MMTCO<sub>2</sub>E.

Potential carbon dioxide reductions are estimated for all three of those categories listed below:

A. Fuel Combustion

Clinker production is the most energy-intensive stage in cement production, accounting for over 90% of total industry energy use<sup>3</sup>. The most prominent fuel source used for clinker production in California is coal. Coal accounts for over 95% of all CO<sub>2</sub> emissions from fuel consumption. Coal emits over 210 pounds of CO<sub>2</sub> per million Btu (MBtu) compared to 117 pounds of CO<sub>2</sub> per MBtu of natural gas<sup>4,5</sup>. If a low-carbon fuel, such as natural gas, is substituted for coal, potential reductions could exceed 1 MMTCO<sub>2</sub> reduction per year can be obtained. Further evaluation and information is needed to determine the feasibility of this proposed measure. Issues such as cost, infrastructure, plant modifications, and operational requirements need to be evaluated in more detail to determine if switching to low-carbon fuels can be recommended as a strategy for reducing greenhouse gas emissions.

B. Energy-efficiency Practices and Technologies

Energy-efficiency practices and technologies in cement production can be implemented to decrease CO<sub>2</sub> emissions. Energy consumption in the cement plant sector consists of energy used for raw material preparation, clinker production and finish grinding<sup>6</sup>. Raw material preparation and finish grinding is an electricity-intensive (indirect emissions) production. However, electricity accounts for only 10% of the overall energy use at cement plants<sup>7</sup>.

1. Raw Materials Preparation

The standard raw materials used in California for cement production are limestone, chalk, and clay. These materials are usually extracted from a quarry close to the plant. Approximately 1.5 tons of raw materials are required to produce one ton of Portland cement. Raw materials preparation involves transport systems, blending, grinding mills, and classifiers (separators). Using the most highly efficient equipment in this category can save electricity and reduce indirect CO<sub>2</sub> emissions by 0.2 MMTCO<sub>2</sub>E at power plants.

2. Clinker Production

The heating of cement kilns to produce clinker is the largest user of energy at these facilities. To improve the energy-efficiency in clinker production, improved control systems, improved combustion system, reduction in kiln heat loss, grate coolers, preheater/precalciner type systems, newer mill drives, and use of secondary fuels can be utilized. Staff lacks sufficient data to estimate potential CO<sub>2</sub> reductions from California facilities. Much of the information available is based on national averages of cement plant efficiencies. Using this data, potential energy efficiency improvements could result in up to 0.7 MMTCO<sub>2</sub>E annually. Staff believes this estimate overstates the potential CO<sub>2</sub> reductions because a study by Lawrence Berkeley National Lab<sup>8</sup> found that California plants operate more efficiently than the national average. In order to more accurately assess potential reductions, staff needs to obtain plant specific information from each California facility.

### 3. Finish Grinding

To produce powdered cement, clinker is ground to the consistency of face powder. Finish grinding involves process control, grinding mills, and classifiers. Carbon dioxide emissions reduction of 0.1 MMTCO<sub>2</sub>E can be accomplished with high-efficiency equipment.

## 5. Estimated Costs/Economic Impacts and the Impacted Sectors/Entities

The estimated cost impact to California's cement industry to use cleaner fuels and more energy-efficient equipment/technologies is about one billion dollars annually. These costs are discussed below.

Coal is the major fuel used in California to heat the kiln used in clinker production. If coal was replaced by natural gas, total annual cost increase for California facilities would be estimated at \$500 million. This equates to approximately \$200 per metric ton of carbon dioxide equivalent (MTCO<sub>2</sub>E) reduced per year. It should be noted that this number only reflects the difference in fuel costs. Additional work is needed to determine infrastructure and other costs that may significantly change the cost effectiveness.

Several technologies and practices exist that can reduce the energy intensity of various process stages of cement production. If each cement facility changed to higher energy-efficiency equipment for raw material preparation, the total cost is estimated at \$258 million. This corresponds to approximately \$1,300 per MTCO<sub>2</sub>E reduced. The finish grinding process is estimated at \$111 million if all cement facilities changed equipment for higher energy-efficiency. This equates to \$1,100 per MTCO<sub>2</sub>E reduced. Finally, improved energy-efficiency for clinker production involves many technical stages. Total cost for modification is estimated at \$90 million. This corresponds to \$125 per MTCO<sub>2</sub>E reduced. Additional information is necessary to more accurately determine energy efficiency strategies.

## 6. Technical Feasibility

This measure is technically feasible by applying low-carbon fuels for heating cement kilns and using more efficient equipment at various process stages of cement production. However, staff lacks information regarding the actual benefits that would be achieved by replacing existing equipment with more energy efficient equipment used at each California cement facility. Administering these measures could be costly to industry.

## 7. Additional Considerations

- Applicability of technological changes will depend on the current and future situations regarding individual plants. Capital projects would be implemented only if the company has more than 50 years of limestone reserve remaining. Cement plants with a shorter supply would most likely implement minor upgrades and focus on energy management measures.

- Mercury emissions from coal and raw materials needs to be evaluated. An assessment needs to be implemented concurrently with greenhouse gas reduction strategies to better understand impacts to industry.

**8. Division:** Stationary Source  
**Staff Lead:** Jim Stebbins  
**Section Manager:** Todd Wong  
**Branch Chief:** Michael Tollstrup

## 9. References

<sup>1</sup> Coito F, Friedmann R, Powell F, Price L, and Worrell E. 2005. *Case Study of the California Cement Industry*. Ernest Orlando Lawrence Berkeley National Laboratory, LBNL-59938

<sup>2</sup> Martin N, Worrell E, and Price L. 1999. *Energy Efficiency and Carbon Dioxide Emissions Reduction Opportunities in the U.S. Cement Industry*. Ernest Orlando Lawrence Berkeley National Laboratory, LBNL-44182

<sup>3</sup> Ruth M, Worrell E, Price L. 2000. *Evaluating Clean Development Mechanism Projects in the Cement Industry Using a Process-Step Benchmarking Approach*. Ernest Orlando Lawrence Berkeley National Laboratory, LBNL-45346

<sup>4</sup> ICF Consulting. 1999. *Emissions Factors, Global Warming Potentials, Unit Conversions, Emissions, and Related Facts*.  
 Website: <http://www.p2pays.org/ref/07/06861.pdf>

<sup>5</sup> Leonardo Academy, Inc. – *Multiple Pollutant Emission Reduction Reporting System (MPERRS)*. 2007. *Emission Factors and Energy Prices for Leonardo Academy's Cleaner and Greener Program*.  
 Website: <http://www.cleanerandgreener.org/download/efactors.pdf>

<sup>6</sup> Worrell E and Galitsky C. 2004. *Energy Efficiency Improvement Opportunities for Cement Making – An Energy Star Guide for Energy and Plant Managers*. Ernest Orlando Lawrence Berkeley National Laboratory, LBNL-54036

<sup>7</sup> Van Oss HG. 2005. *Background Facts and Issues Concerning Cement and Cement Data*. United States Geological Survey. Open-file Report 2005-1152

<sup>8</sup> Masanet E, Price L, de la Rue du Can S, and Brown R. 2005. *Optimization of Product Life Cycles to Reduce Greenhouse Gas Emissions in California*. Lawrence Berkeley National Laboratory for the California Energy Commission. CEC-500-2005-110-F.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B20*  
ID NUMBER:        *EA B-1, B-2*  
TITLE:              *CEMENT (B): BLENDED CEMENTS*  
PROPONENT:       *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for addition to the list of early actions. The Board date for consideration of this item is anticipated in 2<sup>nd</sup> quarter of 2009.

## 3. Early Action Description

From cement plants, carbon dioxide (CO<sub>2</sub>) emissions are released into the atmosphere during the calcination process and the burning of fuels to produce clinker, the main ingredient in Portland Cement. The calcination process involves the decomposition of calcium carbonate (limestone) to calcium oxide (clinker or lime), in which CO<sub>2</sub> is released. Calcination is carried out in furnaces or kilns under very high temperatures.

A strategy to reduce CO<sub>2</sub> emissions involves the addition of blending materials such as limestone, fly ash, natural pozzolan and/or slag to replace some of the clinker in the production of Portland Cement. Currently, ASTM cement specifications allow for replacement of up to 5% clinker with limestone. Most manufacturers could in fact replace up to 4% with limestone. Caltrans allows for 2.5% average limestone replacement until testing of the long term performance of the concrete is complete. Caltrans currently has over \$1 million in task orders and is devoting considerable staff resources to the evaluation of limestone blending in cement. Caltrans also currently has standards for using flyash and slag in concrete. Other blending practices will be explored.

Industrial wastes such as coal fly ash, blast furnace slag, and silica fume have cementitious properties and can be blended with clinker or added at the concrete mixing stage. The quality of these blended cements is comparable to Portland cement. The differences are lower initial strength, but higher final strength, and improved resistance to sulfates and seawater. In the United States, one study estimated that these blended cements account for about one percent of the domestic cement shipments. Limitations on further penetration of fly ash, slag, and silica fume into the concrete market depends on the availability, construction standards, transportation costs, and user preferences; however, the potential CO<sub>2</sub> emission reduction potential warrants further examination. Caltrans mandates 25% fly ash in almost all of its concrete and allows up to 35% fly ash replacement of cement. Caltrans also allows up to 60% slag replacement of cement in all concrete. Additional staff work is needed to determine other current blending practices in the State.

#### **4. Potential Emission Reductions**

In 2004, cement plants in California produced about 11.2 million metric (MM) tons of clinker, which corresponds to about 10.8 MM tons of CO<sub>2</sub> emitted from the production of clinker. Blending with 25% fly ash, slag, or silica fume has a potential to reduce CO<sub>2</sub> emissions by reducing the need to produce an equivalent amount of clinker. For each percent of cement replaced by these blending materials, CO<sub>2</sub> emissions may be reduced proportionally. At this time, ARB staff does not have information on how much of blended cements are used in California and further evaluations are needed to estimate the potential use of these blended cements to reduce CO<sub>2</sub> emissions. It should be noted that this strategy may not reduce CO<sub>2</sub> emissions in California, but is expected that cement imports would be reduced and thus result in reduced emissions elsewhere.

Fly ash that is typically blended is a by-product of coal combustion and may contain mercury. Mercury levels in fly ash need to be evaluated.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The production of clinker is an energy intensive process, which involves heating and maintaining high temperatures in the cement kilns and its associated equipment (pre-heaters/pre-calciners). This strategy may result in the production of less clinker per unit of cement produced. In blending with 5% limestone, it is estimated that clinker production could be reduced by 0.56 MM tons, resulting in a reduction in energy use of  $2.14 \times 10^6$  MMBtu. This is equivalent to not burning 75,000 tons of coal and saving plant operators in the State about \$3 million. Due to the lack of information, the economic impacts of blending 25% fly ash or slag can not be determined at this time.

#### **6. Technical Feasibility**

The replacement of Portland Cement with limestone is technically feasible and may reduce CO<sub>2</sub> emissions per unit of cement produced. However, additional evaluations are warranted to assess the feasibility, availability, and cost of blended cements containing fly ash and slag.

#### **7. Additional Considerations**

- The cement plant industry and environmental groups support the use of blending cements.
- The production of clinker at cement plants is also a source of mercury emissions caused by naturally occurring mercury found in the raw materials and from the combustion of coal. ARB staff has begun its efforts to understand the processes involved with the production of Portland cement, gather information to assess the impacts of both CO<sub>2</sub> and mercury emissions, evaluate control options for all pollutants, and assess the economic impacts to the industry and the public. It is not yet fully understood the potential impacts of blending on mercury emissions from cement manufacturing facilities.
- Ongoing and future discussions with Caltrans and other agencies will ensure that

the addition of blended cements will meet their specifications and approval.

- Additional work is needed is needed to determine the extent to which blending currently is being done and the technical feasibility of establishing limits for the blending of fly ash and slag as a strategy to reduce CO2 emissions.

**8. Division:** Stationary Source Division  
**Staff Lead:** Duc Tran  
**Section Manager:** Todd Wong  
**Branch Chief:** Michael Tollstrup

## 9. References

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# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B21*  
ID NUMBER: *EJAC-22*  
TITLE: *RELATIVELY INEXPENSIVE ENERGY SAVINGS MEASURES  
WITH SHORT PAY BACK TIMES FOR FOSSIL FUEL POWER  
PLANTS BUILT PRIOR TO 1980*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid- 2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

In addition, the ARB staff recommends working with the local air districts to start a dialogue with power plant owners and operators to disseminate information on energy savings measures through an educational outreach program. For these measures, there is already inherent built-in advantages (cost savings and short payback times).

## 3. Early Action Description

This strategy proposes that the ARB implement relatively inexpensive energy savings measures with short payback times for fossil fuel-fired power plants constructed prior to 1980. The EJAC has identified these older electrical generating units as significant contributors to greenhouse gas emissions due to their lower thermoelectric efficiencies compared to new state-of-the-art combined-cycle power plants.

ARB staff determined that there are 59 fossil fuel-fired thermoelectric power plants within California that came online prior to 1980. In 2005, the CO<sub>2</sub> emissions from these facilities totaled 13.9 million metric tons of CO<sub>2</sub>-equivalent per year (MMTCO<sub>2</sub>E) or about 25 percent of total CO<sub>2</sub> emissions from all power plants in California.

ARB staff has identified two potential measures that could generate energy savings with minimal investment. The U.S. Department of Energy's (DOE) Industrial Technologies Program helps industrial plants operate more efficiently and profitably by identifying ways to reduce energy use in key process systems. The program has identified that minimal improvements in burner efficiency can result in significant savings. The following case from the DOE website ([www.eere.energy.gov/industry](http://www.eere.energy.gov/industry)) provides an example of the potential savings:

Case: Consider a 50,000 lb/hr process boiler with a combustion efficiency of 79% (E1). The boiler annually consumes 500,000 million Btu (MMBtu) of natural gas. At a price of \$8.00/MMBtu, the annual fuel cost is \$4 million. The installed cost is

\$75,000 for a new burner that provides an efficiency improvement of 2% (E2).  
The cost savings is:

$$\begin{aligned}\text{Cost Savings} &= \text{Fuel Consumption} \times \text{Fuel Price} \times (1 - E1/E2) \\ &= 500,000 \text{ MMBtu/year} \times \$8/\text{MMBtu} \times (1 - 0.79/0.81) \\ &= \$98,760/\text{year}\end{aligned}$$

The simple payback on investment is:

$$\text{Simple Payback} = \$75,000 / \$98,760/\text{year} = 0.76 \text{ year}$$

The table below shows the annual dollar savings for 1% and 3% efficiency improvements.

Burner Combustion Efficiency Improvement	Annual Energy Savings (MMBtu/year)	Annual Dollar Savings
1%	6,250	\$50,000
2%	12,345	\$98,760
3%	18,290	\$146,320

The second measure is the use of newly-developed "automated migration tools," which consist of control and process optimization software to enhance operations by automatically balancing the process for optimum results, coordinating boiler/turbine control, emissions monitoring, economic dispatch, and fleet management. (Westinghouse Process Control, Inc., a subsidiary of Emerson, is one such vendor of this technology.) Some of the benefits include lower maintenance and materials costs, improvements in heat rate, and reductions in unit startup time. The software allows power plants to modernize their operations for greater efficiency and output, while at the same time minimizing their generation downtime.

These efficiency-enhancing measures may be of particular interest to the coastal power plants that have once-through cooling. Once-through cooling is an effective and relatively inexpensive method for re-condensing super-heated steam after it has been used to generate power. Once-through cooling draws sea water into the plant, where it flows through a heat exchanger to cool the steam, and then subsequently returns the heated water back into the environment. Sea water is abundant and cold and represents an efficient means of handling waste heat. However, once-through cooling may have a deleterious environmental impact due to the entrainment and impingement of marine life; therefore, the State Water Resources Control Board is currently developing a statewide policy to implement federal Clean Water Act requirements for power plants that utilize once-through cooling. If a less-efficient cooling method is required by these power plants, they could suffer an energy penalty ranging from 1.7 to 8.6 percent. ARB staff has identified 17 pre-1980 plants that may need to be retrofitted to comply with proposed once-through cooling requirements. Measures to mitigate this loss in overall efficiency may be especially pertinent.

#### 4. Potential Emission Reductions

For the example case above for a single boiler, the potential emission reductions range from 0.12 to 0.34 MMTCO<sub>2</sub>E based on the fuel savings from the burner efficiency improvements. A plant-by-plant analysis is required to determine how many generating

units in the State have not already gone through similar modifications and could benefit from this measure. In addition, ARB staff was not able to obtain information on specific efficiency rates associated with the optimization software. Further investigation is required. Therefore, ARB staff cannot yet determine the total emission reduction potential of this strategy. However, depending on annual fuel consumption rates for the 59 pre-1980 power plants and opportunities for at least one percent efficiency improvements, there is a potential for significant emission reduction.

A potential co-benefit of efficiency improvements that lower overall fuel use is a concurrent reduction in criteria pollutant emissions.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The cost of burner improvements will be site-specific. Also, ARB staff was not able to obtain information on upgrade costs associated with the optimization software, and further research is required. Therefore, the total cost of implementation cannot yet be determined due to the need to assess each generating unit on a case-by-case basis. Costs will be borne by the power plants, but the payback in efficiency and reduced fuel consumption should provide a short payback time and would not be expected to translate into increased electricity rates for consumers.

## **6. Technical Feasibility**

In 2006, the DOE's Industrial Technologies Program completed 200 Energy Savings Assessments at U.S. industrial plants. Their website contains over 50 case studies for companies that have participated in past assessments and that are already saving energy and money. These studies describe demonstrated energy improvement projects, process improvement projects, and/or assessments at the plant level. These projects and accompanying savings can be replicated at similar plants.

With respect to optimization software, Westinghouse Process Control's website ([www.emersonprocess-powerwater.com/solutions/pwr-successstories.cfm](http://www.emersonprocess-powerwater.com/solutions/pwr-successstories.cfm)) describes experience with over 30 power generation projects across the U.S. and internationally.

## **7. Additional Considerations**

- This measure would complement other actions taken by State agencies. In September 2005, the California Public Utilities Commission (CPUC) launched an ambitious energy efficiency and conservation campaign by authorizing energy efficiency plans and \$2 billion in funding for 2006-2008 for the State's utilities.
- In addition, this item may be included under two CAT strategies to be implemented by the California Public Utilities Commission—specifically, "Investor Owned Utility Energy Efficiency Programs (including LSEs)" and "Investor-Owned Utility (IOU) Additional Energy Efficiency Programs/Demand Response."

Before taking this item to the Board, ARB staff recommends conducting further research to identify any additional low-cost energy savings opportunities for power plants and to

obtain a more accurate quantification of the potential emission reductions based on a case-by-case analysis of options.

**8. Division:** Stationary Source Division  
**Staff Lead:** Chris Gallenstein  
**Section Manager:** Mike Waugh  
**Branch Chief:** Mike Tollstrup

**9. References:**

*California Air Resources Board, database on California power plants, based on air district permit information from 2001.*

<sup>2</sup> *California Air Resources Board, spreadsheet on greenhouse gas emissions from power plants for 2005, based on Energy Information Administration data.*

<sup>3</sup> *California Energy Commission, "Integrated Energy Policy Report," Appendix A: Aging Power Plant Study Group, publication #CEC-100-2005-1007-CMF, November 2005.*

<sup>4</sup> *California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004," Staff Final Report, publication #CEC-600-2006-013-SF, December 2006.*

<sup>5</sup> *California Energy Commission, "Status and Known Plans of Coastal Plants using OTC," April 2007.*

<sup>6</sup> *California Energy Commission, spreadsheet on pre-1980 generating unit ratings and status.*

<sup>7</sup> *California Public Utilities Commission, "PUC's Energy Leadership," January 2007: [http://www.cpuc.ca.gov/static/070319\\_revenergystory0107.pdf](http://www.cpuc.ca.gov/static/070319_revenergystory0107.pdf)*

<sup>8</sup> *Emerson Process Management's Power Success Stories, April 9, 2001: [http://www.emersonprocess.com/solutions/power/success\\_story\\_1.asp](http://www.emersonprocess.com/solutions/power/success_story_1.asp)*

<sup>9</sup> *U.S. Department of Energy, Industrial Technologies Program, Energy Efficiency and Renewable Energy, Steam Tip Sheet #24, DOE/GO-102006-2269, January 2006.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B22*  
ID NUMBER: *EJAC-23/EJAC-29/ EJAC-31*  
TITLE: *IDENTIFY AND IMPLEMENT ENERGY EFFICIENCY MEASURES AT REFINERS THAT INCLUDE, BUT ARE NOT LIMITED TO, CONDUCTING AN ENERGY AUDIT*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

Several of the measures that could be implemented to realize energy efficiency savings with potential greenhouse gas (GHG) benefits are listed in the section(s) below. Staff reviewed specifics of the necessary steps/processes necessary to implement such actions. This includes permitting and construction activities. Staff has concluded that all these measures could potentially provide moderate to significant GHG benefits. However, given the remaining uncertainties with identifying a viable strategy, staff does not recommend adding the suggested measures to the list of early actions. As part of its ongoing assessments, staff plans to:

- a) Perform an evaluation to determine refiner's energy use and energy efficiency.
- b) Develop a detailed strategy to define a plan to monitor changes in refinery energy uses and efficiency over time.
- c) Define regulatory measures that could be implemented.

Each of these activities requires detailed analyses to ensure a comprehensive plan is adopted by each refinery before energy efficiency measures could be implemented.

## 3. Early Action Description

U.S. Department of Energy, the American Petroleum Institute, and large refinery facilities have completed a number of energy efficiency projects and demonstration studies in the last ten years. The results from these activities are the basis of the suggested measures for energy efficiency savings. The potential measures that could achieve modest to significant energy savings include: use of an energy management assessment system to continually optimize refinery processes, installation of new or expanding existing co-generating capacity, use of new (low-energy) technologies for desulfurization of fuels, incorporating low level heat streams back into refinery processes, reducing fouling and corrosion in cooling water streams, and treating and using low BTU refinery plant gas as an energy source. Some of these measures are currently under evaluation by refiners.

#### **4. Potential Emission Reductions**

Current ARB GHG combustion estimates suggest that California refineries emit 30 million metric ton equivalents of CO<sub>2</sub> annually. However, energy and GHG savings need to be determined for each refinery. Co-generation reduces CO<sub>2</sub> emissions by ~ 25% (not plant wide but just from this source of energy) compared to steam and electricity being delivered by an external utility. Savings are mainly derived by lower transmission losses, export of electricity and better heat management at the facility. The other measures when implemented could provide for marginal to moderate reductions (< 10%) reductions in energy needs for a given refinery with attendant GHG reductions.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

All the measures indicated above have moderate to significant costs associated with planning, design, permitting, construction and maintenance. Most if not all costs associated with implementation would be the responsibility of the refinery.

#### **6. Technical Feasibility**

Most of the proposed measures have been demonstrated to be feasible and cost effective by industry and government agency projects. However, refinery specific technical feasibility analyses need to be conducted to ensure that the specifics of each refinery are considered before adopting or mandating any energy efficiency measure.

#### **7. Additional Considerations**

Significant technical challenges exist to adapting findings from energy assessments of even a small refinery. Completing such assessments could take anywhere from 12-18 months before a report could be delivered. Based on the recommendation, construction, permitting, etc. may require additional time. Hence, adoption of measures to conduct such energy assessments is reasonable but not as discrete early action measures due to the time needed to conduct a complete assessment.

A study conducted by the California Energy Commission in participation with California refiners concluded that implementation would entail time frames of 3 or more years even for measures for which there was no significant technical, regulatory, enforcement, or other challenges. This conclusion is similar to staff's assessment of timelines necessary for adoption of any of the measures discussed above.

<b>8. Division:</b>	Stationary Source
<b>Staff Lead:</b>	Reza Lorestany
<b>Section Manager:</b>	John Courtis
<b>Branch Chief:</b>	Dean Simeroth

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B23*  
ID NUMBER: *EJAC-24*  
TITLE: *ACCELERATE THE REPLACEMENT OF CARGO HANDLING  
EQUIPMENT AT PORTS*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

Accelerating the replacement of cargo handling equipment at ports and intermodal railyards beyond that required by the Air Resources Board's (ARB) regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards (Cargo Handling Rule) could compromise the expected reductions in NO<sub>x</sub> and diesel PM from that rule and would have negligible impacts on greenhouse gas emissions. Accelerating the implementation dates for compliance could potentially jeopardize the overall benefits that can be realized from the Cargo Handling Rule. While there may be some near-term increase in emission reductions, a large portion of the overall benefits that are scheduled to be realized would be lost since operators would not be able to purchase the cleaner Tier 4 engines that will be available in the post 2011 timeframe. For example, for some larger equipment, such as rubber tire gantry cranes (RTG) that have long useful lives (up to 20 years or more), high horsepower ratings, and are costly (upwards of over 1 million dollars), the regulation was designed to accelerate the turnover of this equipment such that, in most cases, a new RTG would be purchased when the ultra-low emission Tier 4 engines would be available. Having this equipment replaced sooner, as proposed in this early action measure, would result in the loss of the significant emissions benefits from a Tier 4 engine since the operator would have to purchase either a Tier 2 or Tier 3 engine. Since this equipment has a long useful life, the benefits of a Tier 4 engine would be foregone for up to 20 years.

Furthermore, it is expected that the Cargo Handling Rule, or the acceleration of that rule, would result in a negligible effect on global warming. Because the Cargo Handling Rule requires operators to move from uncontrolled engines to cleaner engines with NO<sub>x</sub> and PM controls and in some cases to apply exhaust retrofits, there can be a fuel economy penalty as high as two to four percent. When more fuel is burned, more CO<sub>2</sub> is produced, and CO<sub>2</sub> is a greenhouse gas. However, the Cargo Handling Rule does result in the reduction of black carbon emissions which also contribute to global warming and this may offset the fuel penalty effects.

Accelerating the turnover would result in the loss of NO<sub>x</sub> and diesel PM emission reductions over the life of the equipment resulting in a loss of public health protection and without achieving any measurable greenhouse gas benefits.

### **3. Early Action Description**

The Cargo Handling Rule became effective December 6, 2006, and established performance standards based on the best available control technology (BACT) for new and in-use cargo handling equipment operating at these facilities. Compliance with the regulation will be phased in beginning in 2007 based on the age of the engine, whether or not it is a yard truck or non-yard truck equipment, and the size of the fleets. The performance standards and compliance dates in the regulation were designed to maximize the public health benefits from the rule, taking into account the useful life of the equipment, the use and cost of new equipment, the horsepower of the engines, and when cleaner new engines, in particular the 2007 on-road engines and Tier 4 off-road engines, would be available.

This Early Action Strategy proposes to accelerate the replacement of cargo handling equipment at ports and intermodal rail yards earlier than the compliance schedules required by the existing statewide regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards. The proponents of this measure did not provide any details on the dates for acceleration or the equipment targeted.

### **4. Potential Emission Reductions**

As discussed under “**Staff Recommendation**”, we do not expect any greenhouse gas emission benefits from this proposed early action measure.

### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The costs associated with accelerating the implementation dates in the Cargo Handling Rule could be significant. In most cases, the useful life of equipment would be decreased even more than required by the rule, resulting in increased costs to terminal operators, shippers, and consumers.

### **6. Technical Feasibility**

It is technically feasible to require faster turnover of equipment at ports and intermodal rail yards. However, as discussed in “**Staff Recommendation**,” accelerating the turnover would decrease the expected emission reductions of NO<sub>x</sub> and diesel PM from the rule and have negligible impacts on greenhouse gas emissions.

### **7. Additional Considerations**

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Lisa Williams
<b>Section Manager:</b>	Cherie Rainforth
<b>Branch Chief:</b>	Dan Donohoue



# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B24*  
ID NUMBER: *EJAC-25*  
TITLE: *EVALUATE ENCLOSED DAIRY BARNS AS AN ADDITIONAL  
STRATEGY FOR THE CAPTURE AND COMBUSTION OF  
METHANE EMISSIONS AT DAIRIES*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

In addition to this measure, ARB staff will be evaluating potential measures for modified feed management, manure removal frequency, covered and treated lagoons, and digesters as potential strategies for reducing methane emissions.

This evaluation will be undertaken as part of ARB's actions for reducing methane emissions at dairies. These actions are not appropriate for consideration as early action measures because the time-frame is not sufficient to conduct the required in-depth cost-effective analyses, develop consistent emissions testing methods, and evaluate emerging technologies or technology-transfers. These activities must be conducted in advance of proposing any measures for reducing GHG emissions from dairy operations. ARB Planning and Technical Support Division (PTSD) staff is currently developing a protocol for calculating changes in GHG gas emissions resulting from the voluntary installation of a manure digester at animal agricultural facilities. The development of this voluntary protocol has been proposed as an early action measure and is discussed in a separate white paper prepared by PTSD.

## 3. Early Action Description

This strategy proposes that the ARB develop a regulation to require that housing and milking barns at dairies be vented to an incinerator or biofilter/bioscrubber as a means of controlling methane emissions from enteric fermentation. This strategy consists of fully enclosing barns and exhausting the air to an incinerator or a biofilter/bioscrubber.

Incinerators can achieve a 90 percent or greater reduction in methane emissions. However, incinerators emit oxides of nitrogen, carbon dioxide, toxic air pollutants and require the use of a fuel to promote the destruction of compounds such as methane.

Biofilter/bioscrubber technology can achieve approximately 80 percent control of emissions of volatile organic compounds (VOCs), ammonia, and hydrogen sulfide. ARB staff was not able to confirm any control efficiencies for methane from biofilters/bioscrubbers. By-products of biofilters/bioscrubbers are water and carbon dioxide.

In their May 7, 2007 letter to the Chairman of the Air Resources Board, the Center on Race, Poverty & the Environment argues 1) that cow housing is where most enteric fermentation takes place, 2) biofilter systems are already in use for swine facilities and have been reported for dairies, and 3) have been proposed by industry in California. ARB staff has not been able to confirm the extent to which these statements are true. In addition, ARB staff is not aware of any information about the cost of these technologies or their ability to reduce GHG emissions at any enclosed animal facility.

#### **4. Potential Emission Reductions**

California's dairy cow population produces about 4.7 MMTCO<sub>2</sub>E of methane from enteric fermentation. Although biofilters/bioscrubbers and incinerators can reduce methane emissions, the overall net GHG emissions (that would occur after discounting the GHG emissions emitted from electricity required to operate the technologies and as a by-product of the technologies themselves) have not been determined.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

A detailed cost-effectiveness analysis of such systems needs to be performed prior to their application. In addition, the calculation of net reduction in GHGs must include the electricity used to move contaminated air from the barns to the filtration device or incinerator. The agriculture industry, particularly sectors involved in confined animal facilities, would be impacted by this proposal.

#### **6. Technical Feasibility**

These technologies could theoretically be transferred to dairies. However, the extent to which enclosed animal barns outfitted with these technologies could achieve a net reduction in GHG emissions, particularly carbon dioxide, has not been demonstrated.

#### **7. Additional Considerations**

This is an untested technology with likely high-energy requirements for airflow and high-water requirements for evaporative cooling. There may be some benefits in milk production by maintaining the proper temperatures inside the freestall barns. Manure handling in the confined spaces may be more difficult. An increased risk to animals will occur from overheating. Marketing campaigns based on "unconfined cows" might be compromised. Animal health and welfare issues may arise.

**8. Division:** Stationary Source Division  
**Staff Lead:** Dan Weller  
Regulatory Assistance Section  
**Section Manager:** Kitty Howard  
**Branch Chief:** Michael Tollstrup  
**Staff Attorney:** George Poppic

**9. References:**

1. *Dairy Permitting Advisory Group, Recommendations to the San Joaquin Valley Air Pollution Control Officer Regarding Best Available Control Technology for Dairies in the San Joaquin Valley, Final Report – January 31, 2006, at 108-110 ("DPAG Report")*
2. *Letter to Dr. Robert Sawyer, Chairman of the California Air Resources Board. Dated: May 7, 2007. Received from Avinash Kar (Center on Race, Poverty, & the Environment) and Tom Frantz (Global Warming Environmental Justice Advisory Committee)*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Strategy Name and Proponent

SUMMARY #            *B25*  
ID NUMBER:        *EJAC-26*  
TITLE:                *COMPOSTING – ADOPT SOUTH COAST AND SAN JOAQUIN RULES STATEWIDE*  
PROPONENT:        *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

## 3. Description

South Coast Air Quality Management District (SCAQMD) Rule 1133.2 and San Joaquin Valley Unified Air Pollution Control District (SJV) Rule 4565 were adopted for the purpose of controlling volatile organic compounds (VOC) and ammonia from co-composting facilities. This strategy would adopt SCAQMD and SJV rules for enclosed co-composting facilities statewide. Co-composting is the composting of a mixture of biosolids and manure with bulking agents to produce compost. Greenwaste facilities use green waste or food waste as the primary feedstock, and may add small amounts of manure or other biosolids as an amendment; chipping and grinding facilities reduce the size of greenwaste or wood waste to be used in composting, or as cover for landfills.

## 4. Potential Emission Reductions

This action is expected to have a low (0-0.1 million metric ton carbon equivalent) emissions reduction potential. The composting rules in SCAQMD and SJV were designed to reduce emissions of VOC and ammonia (as precursors to ozone and PM10). GHG emissions were not evaluated during the development of the district rules.

According to U.S. EPA, composting may result in emissions of methane from anaerobic decomposition, and non-biogenic emissions of carbon dioxide (CO<sub>2</sub>) from the collection and transport of the organic materials to the composting site. U.S. EPA considers CO<sub>2</sub> emissions from aerobic decomposition to be "biogenic" and therefore does not include them in the *Inventory of U.S. Greenhouse Gas Emissions and Sinks*. Research indicates that efficient composting will not result in significant methane emissions, will have minimal CO<sub>2</sub> emissions from transportation and mechanical turning of compost piles, and can result in some carbon storage (sequestration) from the application of compost to soils. Methane emissions were estimated to be essentially zero and CO<sub>2</sub> emissions per ton of material composted was estimated to be 0.01 million ton carbon equivalent (MTCE) indirect CO<sub>2</sub>. U.S. EPA estimated that centralized composting of organics

results in net GHG storage of 0.05 MTCE/wet ton of organic inputs composted and applied to agricultural soil.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

SCAQMD evaluated the cost effectiveness of Rule 1133.2 under several scenarios. Under the most likely scenario for an existing facility, with enclosures for all phases of the operation, and biofiltration, the cost was \$8,700 to \$10,000 per ton of VOC and ammonia reduced, depending on the type of enclosure selected. Costs for a new facility were between \$11,000 and \$12,000 per ton. Although greenwaste composting facilities have the largest throughput of any composting operation, they are exempt because the control options were determined to be cost-prohibitive.

## **6. Technical Feasibility**

It would be technically feasible to have all large composting facilities in the State comply with a statewide control measure similar to the SCAQMD or SJV rules. However, it is unclear at this time if the control measure would reduce GHG emissions.

## **7. Additional Considerations**

While implementation of this strategy would certainly result in additional statewide VOC and ammonia benefits statewide, GHG reduction benefits are currently unclear. An analysis is needed to determine whether the controls (enclosure and biofilters) will reduce GHG emissions. Additionally, the Market Advisory Committee report on the establishment of a Cap and Trade Program reported that composting does not produce net greenhouse gas emissions. Furthermore, U.S. EPA has estimated that there is a net GHG storage of 0.05 MTCE/wet ton of organic inputs composted, once they are applied to agricultural soil. Data on GHG emissions from composting operations in the SCAQMD and SJV, as well as other areas of the State, need to be obtained and analyzed in order to determine if this strategy has the potential to result in GHG emission reductions.

With low-to-zero anthropogenic GHG emissions, regulating composting facilities for their GHG emissions alone may be cost prohibitive. The Market Advisory Committee noted that local governments have created incentives for increased composting based on the need to reduce the amount of material sent to landfills. Cities and counties were mandated to achieve a 50 percent source reduction by the year 2000, compared to a 1990 baseline. The current statewide diversion rate is 42 percent. If new regulations are imposed on these facilities, it could hinder further progress towards this goal. Composting, alternatively, may be considered a method of carbon sequestration and therefore a potential offset measure (for example, United States Department of Agriculture research indicates that compost usage can reduce fertilizer requirements by at least 20 percent thereby significantly reducing net GHG emissions), which would enhance the economic viability of composting. These issues need to be carefully considered and analyzed prior to proceeding with this strategy.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Kate MacGregor
<b>Section Manager:</b>	Richard Boyd
<b>Branch Chief:</b>	Dan Donohoue

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B26*  
ID NUMBER: *EJAC-27*  
TITLE: *PHASE OUT PRE-1980 POWER PLANTS GENERATING AT  
LEAST 100 MW AND PROVIDE INCENTIVES TO REPLACE  
THEM WITH CLEAN ENERGY*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

ARB staff determined that the greenhouse gas reduction potential of this strategy appears to range from low (actually an increase in emissions) to large, depending on what assumptions are used. ARB staff recommends working with the local air districts to analyze the best options for each generating unit. This work would include determining to what extent natural phase-out is occurring and at what pace; considering how the existing power plants operate versus how the replacement plants will operate (combined-cycle generation is designed for baseload operation and using it as peaking capacity could result in higher emissions due to frequent startup and shutdowns where combustion systems and controls are not optimized); analyzing how planned transmission upgrades will affect the need for Reliability Must Run (RMR) units; and looking at whether new proposed power plant projects will replace the need for old generating units.

## 3. Early Action Description

This strategy proposes that the ARB develop a permitting system to phase out, by 2010, fossil fuel-burning thermoelectric power plants that generate at least 100 MW and were built prior to 1980. The EJAC argues that these represent the oldest, most inefficient units. The mechanism for this phase out would be through a scaled and planned annual reduction in CO<sub>2</sub> emissions between 2007 and 2010. The 2010 end-goal would be an emission standard equivalent to the 2007 cleanest combined-cycle plant operating at a heat rate of 6,500 Btu/kWh. Generating units that cannot meet the emission standard would be required to shut down. The proposed phase-out would occur according to the following increments of progress:

Year	Allowable CO <sub>2</sub> Emission Level
2007	equivalent to 2006 emissions
2008	at least 1/2 less than the difference between 2007 emissions and the 2010 standard
2009	at least 2/3 less than the difference between 2007 emissions and the 2010 standard
2010	equivalent to California's most efficient plants built in 2007 rated at 100 MW and 6,500 Btu/kwh

EJAC also suggests that ARB prohibit an RMR designation by the California Independent System Operator (CAISO) as a means to allow a unit that does not meet the emission levels to operate.

ARB staff assumes that the power plants in question will be replaced by modern combined-cycle power plants consisting of natural gas-fired combustion turbine generators where heat is recovered from the gas turbine exhaust gases to heat water and generate steam, which is sent through a steam turbine to produce additional electricity. Therefore, the amount of fossil fuel burned to generate electricity is less than older units with no heat recovery. For example, the typical electric generation efficiency of a combined-cycle plant is estimated from 40-58 percent, while a utility boiler is estimated from 25-40 percent.

ARB staff assumes that the power plants in question will be replaced by modern combined-cycle power plants consisting of natural gas-fired combustion turbine generators where heat is recovered from the gas turbine exhaust gases to heat water and generate steam, which is sent through a steam turbine to produce additional electricity. Therefore, the amount of fossil fuel burned to generate electricity is less than older units with no heat recovery. For example, the typical electric generation efficiency of a combined-cycle plant is estimated from 40-58 percent, while a utility boiler is estimated from 25-40 percent.

ARB staff determined there are 59 fossil fuel-fired thermoelectric power plants within California that came online prior to 1980. In 2005, the CO<sub>2</sub> emissions from these facilities totaled 13.9 million metric tons of CO<sub>2</sub>-equivalent per year (MMTCO<sub>2</sub>E) or about 25 percent of total CO<sub>2</sub> emissions from all power plants in California. Of these, 30 power plants are also rated at 100 MW or more. The 30 plants represent three percent of the number of power plants statewide, yet contribute approximately 21 percent of the total MW plant capacity in the State. If all 30 plants are phased out by 2010, the State would need to secure about 20,000 MW of capacity. The facilities are located within the jurisdiction of the following air districts: Bay Area, South Coast, Mojave Desert, San Diego, San Luis Obispo, North Coast, and Ventura. The generating units consist of natural gas-fired utility boilers and combustion turbines, with the exception of one facility that uses jet fuel.

Of these 30 power plants, high heat rates and future longevity may soon be less of an issue due to several factors. First, ARB staff has determined that 18 plants have either replaced all or a portion of their generating units or the old generating units are retired or soon to be retired. Secondly, the State Water Resources Control Board is currently developing a statewide policy to implement federal Clean Water Act requirements for cooling water intake structures related to the mitigation of entrainment and impingement

of marine life at power plants that utilize once-through cooling. ARB staff has identified 17 plants (14,479 MW) that may need to be retrofitted to comply with proposed once-through cooling requirements. These plants may be retired due to the cost to retrofit or may suffer an energy penalty ranging from 1.7 to 8.6 percent (at 67 percent load) to install wet or dry cooling.

Regarding reliance on RMR units, one of the ways to reduce the need to sign RMR contracts is to invest in transmission upgrades. Upgrades that increase the ability to import energy from neighboring states and Mexico, and increase the amount of energy that can be delivered to the major load centers in California, minimize the need to sign RMR contracts with aging facilities in these areas for local reliability purposes. Two major upgrades are scheduled to operating by 2008 and will increase the transmission networks import capability into Southern California by as much as 1,160 MW. The Miguel-Mission 230 kV line #2 will increase the import capability into San Diego by 560 MW and is expected to be operating by June of 2006. The short-term Southwest Transmission Expansion Plan upgrades will increase the import capability into the Los Angeles Basin by approximately 500 MW. There are no other major projects planned to increase the transmission capacity into California before 2009.

As a companion to the phase out of older, higher-emitting plants, this strategy proposes that incentives be provided to encourage clean energy substitutions. Identifying available incentive programs would be included as part of the evaluation for the Scoping Plan. However, there is a potential incentive in Assembly Bill 32 (AB 32) for facilities that implement voluntary reduction measures. AB 32 requires that adopted regulations ensure entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of these regulations receive appropriate credit for early voluntary reductions (Health and Safety Code Section 38562 (b)(3)). To support these reductions, ARB is required to adopt methodologies for the quantification of voluntary greenhouse gas emission reductions, and adopt regulations to verify and enforce any voluntary reductions that are authorized for use to comply with emission limits established by ARB (Health and Safety Code Section 38571).

#### **4. Potential Emission Reductions**

In 2005, the 59 pre-1980 power plants produced 13.9 million metric tons of CO<sub>2</sub>-equivalent per year (MMTCO<sub>2</sub>E), which is equivalent to 24 percent of the CO<sub>2</sub> produced by power plants. Although available data were incomplete, plant numbers indicate capacity factors<sup>1</sup> ranging from 1.3 to 36.1 percent (average 13.2 percent). While recent data shows these plants operate infrequently, replacing them with new natural gas combined-cycle units would mean that the new plants will operate more because they are designed for baseload generation. Combined-cycle plants tend to have capacity factors around 85 percent<sup>2</sup>. Based on these assumptions, ARB staff estimates the potential emissions impact due to shut down of pre-1980 power plants and replacement with combined-cycle generation in 2010 ranging from a 2.4 MMTCO<sub>2</sub>E reduction (at

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<sup>1</sup> A percentage that tells how much of a power plant's capacity is used over time. It is the ratio of the electrical energy produced by a generating unit for the period of time considered to the electrical energy that could have been produced at continuous full power operation during the same period.

<sup>2</sup> Assumed CO<sub>2</sub> emission factor for combined-cycle generation is 1,100 lb CO<sub>2</sub>/MWh, as proposed in SB 1368 regulations.



13.2 percent capacity factor) to a 60.4 MMTCO<sub>2</sub>E increase (at 85 percent capacity factor). Therefore, the emission reduction potential of this strategy is considered from low to large.

Depending on how well-controlled the existing plants are, there is the potential for criteria pollutant reductions from combined cycle. At the same time, depending on how the new facilities are operated, there is the potential for an overall increase in emissions due to frequent startups and shutdowns or higher capacity factors.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

ARB staff estimates that the cost to implement this strategy is simply the cost of replacing the old power plants with new combined-cycle power plants of identical capacity. As mentioned above, the potential replacement capacity is 20,000 MW. To replace this capacity with equivalent combined cycle generation is estimated to range from \$1.4 to 8.7 billion (using a levelized cost for combined cycle of 5.85 cents/kWh<sup>3</sup>) based on capacity factors from 13.2 to 85 percent. If there is a reduction in emissions, the cost effectiveness is \$564 per-MTCO<sub>2</sub>E. The bulk of the costs will be borne by the electric utility industry. In turn, this could impact consumers in the form of increased electricity rates.

## **6. Technical Feasibility**

The siting of large natural gas-fired combined-cycle plants in California started in 1997, coinciding with the passage of legislation in 1996 deregulating the California electric utility industry. Since then, 19 of these plants, totaling over 10,000 MW, are currently operating throughout the State. Therefore, the technology is proven and well-established.

## **7. Additional Considerations**

Rules of the Oregon Energy Facility Siting Council set CO<sub>2</sub> emission standards for new energy facilities. The standards apply to baseload gas plants, non-baseload power plants, and non-generating energy facilities that emit CO<sub>2</sub>. For baseload gas plants and non-baseload plants, the standard sets the net emissions rate at 0.675 pounds CO<sub>2</sub>/kWh (675 pounds CO<sub>2</sub>/MWh).

On October 30, 2006, the California Energy Commission (CEC) instituted a proceeding to establish a greenhouse gas emission performance standard to implement Senate Bill 1368 (Stats. 2000, Ch. 598). The bill directs the CEC, in consultation with the California Public Utilities Commission and the California Air Resources Board, to establish a greenhouse gas emission performance standard for all baseload<sup>4</sup> generation of local publicly owned electric utilities at a rate no higher than the rate of emissions for natural gas-fired combined-cycle baseload generation. The proposed standard was set at 1,100 pounds of CO<sub>2</sub>/MWh, based on evaluating the performance of existing

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<sup>3</sup> Represents an average of several cost estimates.

<sup>4</sup> ARB staff is awaiting interpretation from the CEC and California Public Utilities Commission regarding whether plants currently operating with low capacity factors (but which were originally designed and intended for baseload operation) are subject to SB 1368 regulations.

combined-cycle natural gas baseload plants throughout the west, with special attention paid to the performance of units in California.

The CEC adopted the regulations pursuant to SB 1368 on May 28, 2007. The final rulemaking package was submitted to the Office of Administrative Law on June 1, 2007. On June 29, 2007, OAL issued a decision disapproving the action. The CEC is currently working on addressing the decision and determining what changes should be made to the proposed regulations to address OAL's concerns.

**8. Division:** Stationary Source Division  
**Staff Lead:** Chris Gallenstein  
**Section Manager:** Mike Waugh  
**Branch Chief:** Mike Tollstrup

## **9. References:**

<sup>1</sup> California Air Resources Board, database on California power plants, based on air district permit information from 2001.

<sup>2</sup> California Air Resources Board, spreadsheet on greenhouse gas emissions from power plants for 2005, based on Energy Information Administration data.

<sup>3</sup> California Energy Commission, "Comparative Cost of California Central Station Electricity Generation Technologies," Staff Report, publication #100-03-001, August 2003.

<sup>4</sup> California Energy Commission, "Initial Statement of Reasons for Adoption of Regulations Establishing and Implementing a Greenhouse Gases Emission Performance Standard for Local Publicly Owned Electric Utilities," Docket #06-OIR-1, February 2007.

<sup>5</sup> California Energy Commission, "Integrated Energy Policy Report," Appendix A: Aging Power Plant Study Group, publication #CEC-100-2005-1007-CMF, November 2005.

<sup>6</sup> California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004," Staff Final Report, publication #CEC-600-2006-013-SF, December 2006.

<sup>7</sup> California Energy Commission, Power Plant Licensing Cases, Status of All Projects, last updated 7/25/07: [http://www.energy.ca.gov/sitingcases/all\\_projects.html](http://www.energy.ca.gov/sitingcases/all_projects.html)

<sup>8</sup> California Energy Commission, "Proposed 15-Day Changes to Regulations Establishing and Implementing a Greenhouse Gases Emission Performance Standard for Local Publicly Owned Electric Utilities," Docket #06-OIR-1, May 2007.

<sup>9</sup> California Energy Commission, "Resource, Reliability and Environmental Concerns of Aging Power Plant Operations and Retirements," Draft Staff White Paper, publication #100-04-005D, August 13, 2004.

<sup>10</sup> California Energy Commission, "Status and Known Plans of Coastal Plants using OTC," April 2007.

<sup>11</sup> California Energy Commission, spreadsheet on pre-1980 generating unit ratings and status.

<sup>12</sup> Council of Industrial Boiler Owners, "Energy Efficiency & Industrial Boiler Efficiency: An Industry Perspective," March 2003.

<sup>13</sup> Energy Information Administration Glossary: <http://www.eia.doe.gov/glossary/index.html>

<sup>14</sup> Julie Gill, CAISO, personal communication, 7/24/07.

<sup>15</sup> Oregon's Power Plant Offset Program: [http://www.climatetrust.org/programs\\_powerplant.php](http://www.climatetrust.org/programs_powerplant.php)

<sup>16</sup> Siemens Power Generation, Combined Cycle Plant Ratings, January 2006:  
<http://www.powergeneration.siemens.com/en/plantrating/index.cfm>

<sup>17</sup> U.S. Department of Energy, Energy Information Administration, Office of Integrated Analysis and Forecasting, "Annual Energy Outlook 2007 with Projections to 2030," February 2007.

<sup>18</sup> U.S. Department of Energy, National Energy Technology Laboratory, "Cost and Performance Baseline for Fossil Energy Plants," Volume I, DOE/NETL-2007/1281, May 2007.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B27*  
ID NUMBER: *EJAC-28*  
TITLE: *PROHIBIT FUEL OIL BURNING IN PRE-1980 POWER PLANTS  
GENERATING AT LEAST 100 MW*  
PROPONENT: *ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

ARB staff determined that the greenhouse gas reduction potential of this strategy is low. All power plants in California built prior to 1980 and rated at 100 MW or more with oil-firing capability utilize fuel oil only for backup purposes. There is one small plant on Catalina Island rated at 9.3 MW that uses diesel as the primary fuel.

## 3. Early Action Description

This strategy proposes that the ARB develop a regulation to prohibit the burning of fuel oil at power plants that generate at least 100 MW and were built prior to 1980. ARB staff determined there are no power plants of 100 MW or more in California that were constructed before 1980 and that burn fuel oil as the primary fuel. There are, however, 11 plants greater than 100 MW that are permitted to burn fuel oil as backup. They are located within the jurisdiction of the following air districts: Imperial, San Diego, South Coast, North Coast, and Bay Area. During 2005, four of these 11 plants used fuel oil for some portion of the year. The combined diesel and residual fuel oil consumption during 2005 emitted an estimated 0.068 million metric tons of CO<sub>2</sub>-equivalent (MMTCO<sub>2</sub>E), or only 0.12 percent of the total CO<sub>2</sub> emissions from all California power plants.

In addition, there are five power plants rated less than 100 MW that utilize fuel oil as the primary fuel. They are located in South Coast, Placer County, and Northern Sierra air districts. Generating units at four of the five plants have been retired; only the Pebbly Beach Generating Station on Catalina Island remains operational.

The longevity of four of the 11 power plants may be affected by proposed State Water Resources Board policy pertaining to coastal power plants that have once-through cooling. Once-through cooling draws sea water into the plant, where it flows through a heat exchanger to cool the steam, and then subsequently returns the heated water back to the source. Sea water is abundant and cold and represents an efficient means of handling plant waste heat. However, once-through cooling may have a deleterious

environmental impact due to the entrainment and impingement of marine life; therefore, the State Water Resources Control Board is currently developing a statewide policy to implement federal Clean Water Act requirements for power plants that utilize once-through cooling. The policy may require retrofit with an alternative cooling system such as wet or dry cooling. These plants may be retired due to the cost to retrofit.

#### **4. Potential Emission Reductions**

To determine potential emission reductions, ARB staff looked at the difference in emissions due to use of alternative fossil fuels with a lower carbon profile using 2005 as the baseline and assuming 2010 consumption data will be similar. As stated above, diesel and fuel oil burning in 2005 produced 0.068 MMTCO<sub>2</sub>E. Replacing fuel oil with liquefied petroleum gas (LPG) would result in a 14 percent reduction (0.010 MMTCO<sub>2</sub>e) in 2010. To replace with natural gas would result in a 25 percent reduction (0.017 MMTCO<sub>2</sub>e). Therefore, the emission reduction potential of this strategy is considered to be low.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The primary cost associated with this strategy is expected to consist of either the cost of lost power when it is needed (i.e., during a gas curtailment) or the price and cost of an alternative fuel, such as LPG, and its associated infrastructure. It is also possible that some of the generating units (e.g., burners) may need to be retrofitted to accommodate a different fuel.

The costs to businesses and consumers for lost power requires more in-depth research and was not determined for purposes of this analysis; however, it is expected to be significant, particularly depending on the frequency, timing, and duration of these events.

With respect to the use of alternative fuels, the cost of an equivalent amount of LPG is less than the combined diesel and fuel oil consumption for 2005. However, without specific plant information, ARB staff cannot determine any additional costs associated with infrastructure and equipment retrofits at this time.

#### **6. Technical Feasibility**

Power generating boilers, combustion turbines, and reciprocating engines that operate on a variety of fossil fuels are not new technologies. Some of the generating units in question may already have dual-fuel firing capability and thus the conversion from oil burning to a lower carbon fuel is not expected to require any equipment retrofits. Other units will have to be looked at on a case-by-case basis to determine the feasibility of retrofits such as replacement of burner orifices to accommodate various fuels.

Another factor to consider with respect to feasibility is that facilities may be limited by geography in terms of fuel supply choices. For example, the Pebbly Beach Generating Station is located on Catalina Island just off the coast from Los Angeles and utilizes diesel fuel in their reciprocating engine generators. In addition, some regions have the need for dual-fuel capability due to natural gas curtailments. Adverse weather conditions, particularly in Northern California, during which commercial and industrial

space heating loads are high, can result in natural gas curtailments and spur the need for dual-fuel capability to meet power requirements.

## **7. Additional Considerations**

Some California local air districts have prohibitory rules that apply to power generating units that directly prohibit oil burning after a certain date. Other district rules may indirectly result in the phase out of oil burning through average emission standards that apply to multiple generating units. In order to maximize operation, these power plants would be motivated to switch to cleaner-burning fuels, install emission control technologies, or a combination of both.

**8. Division:** Stationary Source Division  
**Staff Lead:** Chris Gallenstein  
**Section Manager:** Mike Waugh  
**Branch Chief:** Mike Tollstrup

## **9. References:**

*California Air Resources Board, database on California power plants, based on air district permit information from 2001.*

<sup>2</sup> *California Air Resources Board, District Rules Database, main page last updated 3/24/05: <http://www.arb.ca.gov/drdb/drdb.htm>*

<sup>3</sup> *California Air Resources Board, spreadsheet on greenhouse gas emissions from power plants for 2005, based on Energy Information Administration data.*

<sup>4</sup> *California Energy Commission, "Integrated Energy Policy Report," Appendix A: Aging Power Plant Study Group, publication #CEC-100-2005-1007-CMF, November 2005.*

<sup>5</sup> *California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004," Staff Final Report, publication #CEC-600-2006-013-SF, December 2006.*

<sup>6</sup> *California Energy Commission, "Resource, Reliability and Environmental Concerns of Aging Power Plant Operations and Retirements," Draft Staff White Paper, publication #100-04-005D, August 13, 2004.*

<sup>7</sup> *California Energy Commission, "Status and Known Plans of Coastal Plants using OTC," April 2007.*

<sup>8</sup> *California Energy Commission, spreadsheet on pre-1980 generating unit ratings and status.*

<sup>9</sup> *Energy Information Administration, Spot Prices for Crude Oil and Petroleum Products, last updated 7/25/07: [http://tonto.eia.doe.gov/dnav/pet/pet\\_pri\\_spt\\_sl\\_d.htm](http://tonto.eia.doe.gov/dnav/pet/pet_pri_spt_sl_d.htm)*

<sup>10</sup> *Energy Information Administration, Spot Prices for Crude Oil and Petroleum Products, last updated 7/25/07: [http://tonto.eia.doe.gov/dnav/pet/pet\\_pri\\_gnd\\_dcus\\_nus\\_w.htm](http://tonto.eia.doe.gov/dnav/pet/pet_pri_gnd_dcus_nus_w.htm)*

<sup>11</sup> *Energy Information Administration, Weekly Heating Oil and Propane Prices, last updated 4/19/07: [http://tonto.eia.doe.gov/dnav/pet/pet\\_pri\\_wfr\\_dcus\\_nus\\_w.htm](http://tonto.eia.doe.gov/dnav/pet/pet_pri_wfr_dcus_nus_w.htm)*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            B28  
ID NUMBER:        *EJAC-30/ARB 1*  
TITLE:              *REFINERY METHANE EMISSIONS*  
PROPONENT:       *2006 CAT REPORT and STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure is recommended for evaluation in the Scoping Plan which will be developed as a draft by mid-2008 and must be considered by the Board prior to January 1, 2009. Evaluation as part of the Scoping Plan provides the most effective approach for fully considering the recommendation.

Currently, there is no reporting system that identifies the sources and quantity of methane emissions from refineries. However, the draft 2004 California GHG inventory lists California petroleum refinery emissions as 30 million metric tons of CO<sub>2</sub> equivalents. Using Air Resources Board (ARB) Emission Inventory Data<sup>1</sup> and ARB refinery speciation profiles it is estimated that refinery methane emissions are 1.4 million metric tons of CO<sub>2</sub> equivalents. Recent refinery studies<sup>2</sup> suggest that the majority of the methane emissions come from crude oil transfer operations, fugitive losses (valves and fittings), flares, cooling towers, and wastewater treatment.

Staff proposes to:

- (a) Perform an evaluation to determine sources and magnitude of refinery methane emissions; and
- (b) Develop a detailed strategy to define regulatory measures for monitoring and control of methane exemptions granted to refineries. This will include methane control measures for refinery processes currently controlled under non-methane volatile organic compounds emission limits, and for some sources with limited control requirements, e.g., cooling towers, wastewater treatment, and ponds.

## 3. Early Action Description

Methane is emitted from many refining operations. The major sources of methane emissions are vapor displacement from crude tanks from marine off-loading and refinery desalter emissions. During the refining processes, methane is separated from the crude oil through vacuum or atmospheric distillation. Methane emissions occur when gaseous streams are transported at various points in the refinery. The primary method for

<sup>1</sup> ARB Almanac database

<sup>2</sup> Phone communication with Don Robinson, ICF Consulting, 7/20/2007. ICF Consulting is performing a methane study for the American Petroleum Institute. The study will determine the GHG emissions for refineries. This analysis will determine CO<sub>2</sub>, methane, and N<sub>2</sub>O for all U.S. refineries. Email Communication: Don Robinson [DRobinson@icfi.com](mailto:DRobinson@icfi.com)

controlling methane emissions is the use of combustion devices, i.e., flare. If one excludes marine off-loading and refinery desalter emissions, most if not all refinery methane sources are low energy, i.e., low heating value, vapor streams<sup>3</sup> that cannot be economically recovered.

#### **4. Potential Emission Reductions**

The potential emission reductions from this measure are unknown.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

There is no accurate estimate of the costs or the economic impacts. It is expected that the costs, depending on the source, could range from low to high. For new or exempt sources the costs may be high. In contrast, existing non-methane hydrocarbon control systems already control methane emissions by default. The major impact on existing control systems would be to require that methane be included in emission capture or destruction efficiencies.

#### **6. Technical Feasibility**

Monitoring and implementation of methane emission control measures is technically feasible. However, many California refineries do not use Best Available Control Technology (BACT) for known methane sources. Use of methane BACT may require additional work for design, local planning approval, and installation. Technology that meets refinery methane BACT has been installed in some California refineries. Use of a catalytic combustion device at the Shell Martinez marine loading terminal is a good example of a methane BACT installation. Mandatory use of BACT for all crude transfer operations and refinery desalter emissions will control most methane emissions by default.

#### **7. Additional Considerations**

None

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Tim Dunn
<b>Section Manager:</b>	John Courtis
<b>Branch Chief:</b>	Dean Simeroth

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<sup>3</sup> Ernest Orlando Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, *Profile of the Petroleum Refining Industry of California* (March 2004). The report was supported by the California Energy Commission through the U.S. Department of Energy under Contract No. DE-AC03-76SF00098.



# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY# *B29*  
ID NUMBER: *EJAC 2/CAPCOA-6/ARB 2-3*  
TITLE: *SPECIFICATIONS FOR COMMERCIAL REFRIGERATION*  
PROONENT: *2006 CAT REPORT, ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE, AND CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2010.

This timing will allow staff the time necessary to complete inventory research<sup>1</sup>, interagency coordination, economic analyses, staff reports, stakeholder workshops, and public hearings to support the necessary regulation(s).

## 3. Early Action Description

This early action strategy was extracted from the updated Climate Action Team (CAT) work plan entitled "Reducing Direct and Indirect Greenhouse Gas (GHG) Emissions from Stationary Refrigeration and Air Conditioning (RAC) Sources<sup>2</sup>".

The strategy involves regulatory measures to require supermarket leak tightness and advanced design requirements for new systems as well as energy efficiency measures for new and existing systems. Direct and indirect emissions need to be considered together over the lifetime of the RAC equipment, so that choices made to reduce direct emissions (e.g., low-GWP refrigerants or standalone systems) do not adversely impact energy consumption and vice versa.

Based on current technologies, commercially available solutions for leak reduction in retail food systems (which contain more piping, fittings, and valves than other types of systems), can support establishing a 5 percent maximum annual leak rate for new

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<sup>1</sup> Inventory work in this area is expected to be complete by late 2008.

<sup>2</sup> Direct GHG emissions refer to the high global warming potential (GWP) emissions of CFCs, HCFCs, and HFCs used as working fluids in RAC systems. Indirect GHG emissions refer to CO<sub>2</sub> emissions associated with electricity required to operate the RAC equipment.

systems in 2011 and 2 percent for new systems by 2016<sup>3</sup>. Currently it is estimated that the average leak rate for new systems is approximately 15 percent minimum. The 5 percent maximum annual leak rate by 2011 is based on industry estimates for controlling leaks in centralized direct expansion (DX) systems, which are the predominant systems currently being installed in retail food stores<sup>4</sup>. To reach the proposed 2020 limit of 2 percent for the maximum annual leak rate, it is expected that indirect supermarket refrigeration systems will have to be adopted rather than low-leak or low-charge DX designs or distributed systems.

Additionally, based on commercially available technologies, the following energy efficiency improvements to reduce energy consumption in existing and new retail food stores are proposed: 10 percent reduction in energy usage from the current baseline in 2011 and 30 percent in 2016<sup>5</sup>. These measures will be pursued in coordination with the California Energy Commission (CEC).

The technologies required for leak reduction in retail food systems include the following: sensitive leak detection equipment, fixed leak detection methods, utilizing brazed (welded) joints instead of flanged or threaded (mechanical) joints, compressor vibration reduction, and improved or reduced numbers of Schrader valves. Additionally, owners and operators of retail food systems would be required to adopt general policies to have full accessibility to all refrigerant pipe work.

Technologies involved in advanced-design retail food refrigeration systems include reduced charge DX systems, distributed systems, secondary loop (indirect) systems, and CO<sub>2</sub> systems (indirect, cascade, and trans-critical systems). Advanced retail food refrigeration designs serve to reduce refrigerant charge (which is important in case of ruptures) as well as reducing leaks through shorter lines that employ fewer fittings.

The improvement of energy efficiency of retail food systems includes the following technologies: evaporative condensers, high efficiency compressor designs, floating head pressure controls, heat recovery, ambient or mechanical sub-cooling, variable speed fans/motors, improved heat exchangers, hot gas defrost, adding doors or night curtains to display cases, energy-efficient reach-ins, anti-sweat heater controls, indirect or energy-efficient case lighting.

#### **4. Potential Emission Reductions**

Estimated emission reductions of 4.7 MMTCO<sub>2</sub>E in 2020 are possible based on a growth rate of 2 percent for new retail food systems in California (from the updated CAT Work Plan); this number only includes reduced leak rate designs for new systems and energy efficiency improvements for new and existing supermarket systems. If closed cases or night curtains are required, further CO<sub>2</sub> reductions are possible.

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<sup>3</sup> This strategy, which could be applied to all RAC systems over a given capacity, basically applies to retail food systems since other "large" systems currently have much lower leak rates than retail food systems, which have baseline leak rates of 15%.

<sup>4</sup> Industry estimates of improvements and target dates were obtained from European studies, and were presented by The Alliance for Responsible Atmospheric Policy (ARAP) in a meeting with ARB on 10/10/06.

<sup>5</sup> Adding doors or night covers to display cases is not included in the energy reduction estimate, and is expected to result in even greater energy benefits if utilized.

The US EPA has indicated that statewide reductions of approximately 6.8 MMTCO<sub>2</sub>E in 2020 are possible for various RAC strategies ranging from leak reduction and refrigerant recovery to indirect retail food ammonia systems<sup>6</sup>. Their estimate includes measures, such as mandatory leak repair for existing systems, which ARB is considering separately. Furthermore, the estimate of 4.7 MMTCO<sub>2</sub>E is a lower bound, as other measures such as mandatory reporting/repair/refrigerant deposit and return, are expected to increase the turnover rate of old systems and lead to further GHG reductions.

## **5. Estimated Costs/Economic Impacts and the Impacted Sectors/Entities**

The estimated cost of the strategies discussed in this evaluation are expected to be on the order of \$10-\$20/MTCO<sub>2</sub>E in 2020. Estimates by the US EPA range from a savings of \$3/TCO<sub>2</sub>E (for enhanced leak repair and refrigerant recovery) to costs of \$10/MTCO<sub>2</sub>E (for installation of an ammonia-based indirect supermarket system). Costs in the updated CAT report were estimated to be \$14/MTCO<sub>2</sub>E, based on incremental cost differences of 20% between indirect systems and traditional DX systems.

Cost-effectiveness will improve as contractors gain comfort with installation of indirect systems and energy saving devices, and as prices for such devices/system components drop with increased production.

## **6. Technical Feasibility**

Leak reduction technologies were obtained from industry estimates of possible leak tightness improvements. Performance of advanced systems designs has been documented in US EPA, California Energy Commission (CEC), and Oak Ridge National Lab (ORNL) reports.

Information on energy saving technologies were obtained from US Department of Energy (DOE), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and US EPA reports, and from presentations given by Charles Zimmerman (Wal-Mart), and Denis Clodic (ARMINES) at ARB's International Symposium On Near-Term Solutions for Climate Change Mitigation in California on March 6, 2007.

All leak reduction and energy efficiency improvement technologies appear to be proven commercially-available technologies; ARAP presented leak reduction technology to ARB based on European experiences with retail food systems, and Wal-Mart has employed advanced design refrigeration systems (secondary loop with heat reclaim) as well as other energy saving measures (LED lighting, closed cases, motion detection for lighting, machine room improvements) with aggressive energy efficiency goals of 25-30 percent reductions in 4 years.

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<sup>6</sup> Obtained from subtracting out motor vehicle A/C reductions and distributing the national reductions to California using the 2005 population fraction of approximately 12.2%.

## 7. Additional Considerations

Given the necessary inventory research, technical complexity and stakeholder input process, staff believes this item could be developed into a regulatory proposal to be considered by the Board by the fourth quarter of 2010.

The affected entities will be owners and operators of retail food (or similar built-up) refrigeration systems, as well as contractors/technicians who install/repair such systems and manufacturers of system components.

A partial list of trade associations possibly impacted, either positively or negatively, by the regulation follows: ARAP (described previously), the Air-Conditioning and Refrigeration Institute (ARI), ASHRAE, North American Technician Excellence (NATE), California Grocers Associations.

Coordination with the US EPA and CEC with respect to developing the regulation is ongoing.

<b>8. Division:</b>	Research Division
<b>Staff Lead:</b>	Whitney Leeman
<b>Section Manager:</b>	Michael Robert
<b>Branch Chief:</b>	Richard Corey

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*Van D. Baxter, Advances In Supermarket Refrigeration Systems, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6070*

*Van D. Baxter, Oak Ridge National Laboratory, IEA Annex 26: Advanced Supermarket Refrigeration/Heat Recovery Systems, Final Report Volume 1 – Executive Summary, April 2003.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B30*  
ID NUMBER: *SCAQMD-1*  
TITLE: *ACCELERATE INTRODUCTION AND DEPLOYMENT OF LIGHT-DUTY VEHICLE (PASSENGER) HYBRID TECHNOLOGY*  
PROPONENT: *SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT*

## 2. Staff Recommendation

Hybrid technology is an element anticipated to be embedded in additional regulatory measures aimed at further reducing greenhouse gas emissions from new motor vehicles. Thus, this measure is recommended to be considered as part of the analysis for the strategy to strengthen light-duty vehicle standards (B33).

During ARB development of the GHG regulation in response to AB 1493, staff carefully considered the strong benefits of hybrids in reducing CO<sub>2</sub> emissions. One of the hurdles identified to accelerating the introduction of light-duty vehicle hybrid-technology is that hybrid electric powertrains, which include an electric motor, battery pack, power controller and other components are relatively expensive. Accordingly, staff needed to consider the degree of hybridization appropriate and cost effective for the 2009-2016 timeframe. Staff concluded implementation of full hybrid electric vehicles would be premature prior to 2016 but believed that much could be done to prepare the vehicle fleet for incorporation of full hybrids in the meantime.

Accordingly, staff included integrated starter/generator (ISG) components in nearly half of the vehicle technology package combinations that were modeled and subsequently utilized to set the adopted GHG emission standards. This provides the incentive and foundation for vehicle manufacturers to include ISG components into high volume applications, thereby driving down costs of these hybrid systems. Staff concluded that once ISG components were integrated across most of the vehicle fleet, it would be further cost-effective to increase the capability and size of these components to permit cost-effective full hybrids to be developed for deployment in the post 2016 timeframe, i.e., ones that could operate on all electric power and provide plug-in capability, assuming battery development in the meantime progresses favorably to reduce their size and cost and to improve performance and durability.

Staff also identified another hurdle - lead time for incorporating major powertrain changes throughout vehicle manufacturers' product lines. Generally powertrain changes require fairly long lead times due to the need to first develop the new components, integrate them seamlessly into the powertrain, and then test and refine them for optimum performance, reliability and durability. In addition, new machinery for producing such powertrains requires considerable planning, lead time and investment. As a result, staff provided long lead times to enable major powertrain upgrades such as incorporating

hybrid systems into vehicles when manufacturers would be doing major revisions anyway as part of their normal vehicle powertrain life cycle process. This was done to avoid the excessive costs that accompany premature tear up of existing powertrains before their cycle life has expired.

### **3. Early Action Description**

Modify the existing light-duty motor vehicle GHG emissions standards to require greater reductions, thereby forcing vehicle manufacturers to accelerate the introduction and deployment of hybrid technology.

### **4. Potential Emission Reductions**

The currently adopted standards call for about a 30 percent reduction by 2016. Assuming that the new standards would call for about a 50 percent reduction, phased-in beginning in 2017, this measure would achieve about a 4 MMT reduction in 2020. The reduction achieved by this measure would significantly increase in subsequent years as clean new vehicles replace older vehicles in the fleet – staff estimates a 2030 reduction of about 27 MMT.

### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Since the technology is at an early stage of development, it is premature to estimate costs and economic impacts.

### **6. Technical Feasibility**

While this measure is technically feasible, for the reasons stated above staff does not believe it would be cost-effective prior to 2017.

### **7. Additional Considerations**

Hybrid technology needs further development and cost reduction if it is to be accepted by large numbers of consumers.

<b>8. Division:</b>	Mobile Source Control Division
<b>Staff Lead:</b>	TBD
<b>Section Manager:</b>	Tony Andreoni
<b>Branch Chief:</b>	Analisa Bevan

### **9. References:**

*Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B31*  
ID NUMBER: *SCAQMD-2*  
TITLE: *NATURAL GAS REQUIREMENT OF 1360 WOBBE INDEX*  
PROONENT: *SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT*

## 2. Staff Recommendation

Staff is aware that there are several outstanding issues related to establishing a statewide Wobbe Index standard and the relationship of Wobbe Index and GHG emissions. Thus, staff recommends that ARB continue to coordinate with the SCAQMD to further evaluate the appropriateness of a statewide natural gas Wobbe Index specification.

## 3. Early Action Description

Establishing a statewide natural gas specification of 1360 Wobbe Index would ensure that California's historical average Wobbe Index level would be maintained. California imports about 85 percent of its natural gas supplies via the interstate pipeline; this gas historically meets a 1360 Wobbe Index. However, sources of high Wobbe Index gas, which includes California gas production and potential imported gas derived from liquefied natural gas (LNG), could significantly increase the Wobbe Index of natural gas in Southern California.

Preliminary information indicates that, in general, natural gas inherently meeting a Wobbe Index of 1360 at production has a lower GHG emissions potential than natural gas inherently meeting a Wobbe Index greater than 1360. This is also true for natural gas that has been processed for natural gas liquids (NGLs) extraction to reduce the level of a high Wobbe Index gas to a lower level. In these cases, the methane content (higher hydrogen to carbon ratio) is greater in natural gas meeting a lower Wobbe Index than natural gas meeting a higher Wobbe Index. However, reducing the Wobbe Index of natural gas by inerts injection (e.g. nitrogen), would likely result in no or minimal GHG benefits since the dilution effect does not change the GHG potential on an energy (BTU) basis.

Recent action by the California State Lands Commission on the North Baja Pipeline Expansion project recognized the significance of introducing high Wobbe Index gas into California. Although the Commission approved the project, the Commission conditioned the approval by requiring the project proponent to monitor the Wobbe Index level of the gas being brought into California from the project and to mitigate possible NOx increases that could result from the use of that gas.



By establishing a natural gas specification of 1360 Wobbe Index, all gas would have to meet this standard, therefore maintaining the historical average Wobbe Index level. However, depending on the strategies used to meet this specification, GHG emission reductions may or may not be significant.

This strategy would be regulatory and affect the natural gas production and supply sectors.

#### **4. Potential Emission Reductions**

The GHG emissions benefit of this strategy is associated with the potential to avoid GHG emissions that may result from increasing the natural gas Wobbe Index above historical average levels. As discussed, the GHG emissions benefit associated with this strategy is highly dependent on the strategies used to meet a 1360 Wobbe Index specification. If natural gas liquids extraction is applied to natural gas to reduce the level of Wobbe Index to meet proposed specification, then there is a likely GHG benefit of about 1.5 percent going from a Wobbe Index of 1385 to 1360. If inerts injection were used, there would be zero to minimal GHG emissions benefit.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The cost of this strategy has not been specifically evaluated. However, rough estimates may be applicable from prior evaluations of natural gas treatment options which include NGLs extraction and inerts (e.g. nitrogen) injection. NGLs extraction can range as low as \$0.04 per million BTU of gas processed and ranges from \$0.24 to \$0.42 per million BTU of gas processed when considering added storage and distribution infrastructure. Also, when considering inerts injection, this option ranges from \$0.05 to \$0.10 per million BTU of gas processed.

The natural gas industry and rate payers would be affected.

#### **6. Technical Feasibility**

Establishing a natural gas specification of 1360 Wobbe Index is technically feasible. Technology to treat natural gas to reduce the Wobbe Index is well proven but the degree of treatment is economically driven depending on the source of natural gas production and the market where the natural gas is to be sold.

#### **7. Additional Considerations**

The California Public Utilities Commission (CPUC) previously held rulemaking to establish a natural gas pipeline specification for Wobbe Index. After considering comments including a recommendation to establish a Wobbe Index of 1360, the CPUC approved a natural gas specification of 1385 Wobbe to ensure adequate supplies of natural gas. The CPUC at that time did not consider the impact of GHG emissions in their decision.

As mentioned, the jurisdiction of establishing a statewide natural gas pipeline specification for Wobbe Index needs to be clarified. Obviously, the CPUC has historical authority to regulate natural gas quality. However, under AB32, the authority to regulate

natural from a GHG perspective suggests that other agencies such as ARB now have some aspects of regulatory authority.

Currently, proposed SCAQMD -2 is not a Climate Action Team strategy.

Proposed SCAQMD-2 would be a regulatory item. Given the regulatory and technical issues that need to be addressed, development of this strategy would exceed 18 months. Further complications in developing this strategy are tied to efforts to address natural gas interchangeability. There are ongoing interchangeability test programs being sponsored by the California Energy Commission that are evaluating the effects of natural gas variability on the performance, durability, and emissions of stationary and mobile combustion equipment. Limited data indicates that certain combustion equipment can be adversely impacted as the Wobbe Index of natural gas increases resulting in increased criteria pollutants. These test programs will provide the technical basis for establishing a statewide natural gas interchangeability specification. These programs are scheduled to be completed within the next 12 to 18 months.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Jim Guthrie
<b>Section Manager:</b>	Gary Yee
<b>Branch Chief:</b>	Dean Simeroth

#### **9. References:**

- *CPUC Order to Institute Rulemaking R.04-01-025*
- *CEC Public Interest Energy Research (PIER) program on natural gas interchangeability*
- *Decision of the California State Lands Commission on the North Baja Pipeline Expansion Project, July 13, 2007.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B32*  
ID NUMBER:         *SCAQMD-3/ARB 2-9*  
TITLE:                *LIGHT COLORED PAVING, COOL ROOFS, AND SHADE TREES*  
PROPONENT:        *SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, it is recommended that this measure remain as an early action item. The Board date for consideration of this item is anticipated in 3<sup>rd</sup> quarter of 2008.

A non-regulatory strategy (guidance) for further action by businesses, developers, and/or individuals to reduce GHG emissions remains an early action as approved by the Board at its June 2007 hearing. In coordination with the California Energy Commission and the Lawrence Berkeley National Lab (LBNL), staff will develop research and real-world experience-based guidelines on actions that could be taken, documenting options, costs, and benefits. We would draw from local, national, and international experience. The guidelines would be neither a complete nor a necessarily suitable recommendation for every community, but rather a foundation or menu of options applicable to a broad range of communities. The development of the guidance may reveal the need for supplemental tools (e.g., calculators, sector targeted guidelines). Guidelines will be developed in close collaboration with business, community, and environmental stakeholders to ensure that the approach is as effective as possible.

## 3. Early Action Description

We recommend a non-regulatory voluntary program with a set of guidelines to be adopted to foster the establishment or transition to cool communities in California. The affected economic sector is the construction industry. Many of the technologies are already well established. Below is a brief description of the strategies expected to be addressed in the guidelines.

### Cool Roofs

Cool roof programs as part of the Building Energy Efficiency standards (Title 24) which can save as much as 15 percent of cooling energy use during hot months of the year. Such a program has already been proposed (Hebert, 2005). Confined to a residential cool community program, the per-house cost premium is estimated at about \$500 (Professor Akbari).

### Cool Pavements

Pomerantz (1999) suggests that for the urban area of Los Angeles (10,000 km<sup>2</sup> and 1,250 km<sup>2</sup> paved), a change to cool pavements can result in reduction of ambient

temperature by 0.6°C (1°F). This reduction is estimated to result in ozone avoidance benefits of \$75 million (\$228 million extrapolated to California) and energy conservation benefits of \$15 million per year. In 1990, California had 410,000 km<sup>2</sup> in total area with 28 urbanized areas with a total of 15,624 km<sup>2</sup> (5,091 km<sup>2</sup> in Los Angeles). By 1999, the urban area of the state may have reached 30,689 km<sup>2</sup> and the total paved area may have been 3,836 km<sup>2</sup> (3800 km<sup>2</sup> available for cool pavement retrofit).

It is estimated that a cool pavements program would require a premium price of \$0.5 per square yard as there are additional costs associated with painting the surfaces. Manville and Shoup (2005) identified the fraction of paved area devoted to parking as 24% for the Los Angeles business district, leaving 76% of paved area for the cool pavement program; this is to keep separate the cool pavement and the parking shade program.

#### Shade Trees and Urban Forest

The Tree Benefit Estimator reports that a mature tree system would save about 700 kWh of energy (1,100 kg of CO<sub>2</sub> per household)

(<http://www.appanet.org/treeben/calculate.asp>). Mature trees can cost as much as \$300 per tree or \$1200 for 4 trees surrounding a residence.

Taha et al. (2000) reported ("Three Cities,") an ambient temperature reduction of 1.2K to 1.6K for a heavily vegetated scenario; Scott et al. (1999) reported increased parking lot shade reductions of 5°C to 7°C (2,592 m<sup>2</sup> shaded area covered by 23 mature trees) while the City of Sacramento guidelines recommend 22 trees providing 776 m<sup>2</sup> of shade. Manville and Shoup (2005) identified 24 percent of the paved area of Los Angeles central business district (LACBD) devoted to parking. Following that same logic and using Scott et al. nearly 8 million mature trees would be needed to offer complete shade to every parking lot in California. For Sacramento, 486 mW peak power (and 92,000 MTCO<sub>2</sub> emissions) may be avoided (Taha et al.).

#### **4. Potential Emission Reductions**

As the proposed strategy consists of voluntary guidance, estimating the emission reductions is a function of the actual strategies employed as well as the magnitude of adoption. As such, potential emission reduction estimates are to be determined as part of the development of the guidelines.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Developing effective guidelines will also increase energy independence, reduce peak energy that is quite often highly polluting, have air pollution benefits through reductions in precursors to ozone and particulate matter, and offer impetus to gentrification and increases in real estate values (Thériault et al. (2005)). Application of the guidance would likely increase construction costs in California. Rise of a new California-specific construction sector would however be a significant boon to our economy. Small businesses have the flexibility of becoming a part of this new expertise construction sector. Environmental justice communities would benefit from gentrification and increases in real estate value. Significant funding from point sources, local and state governments, and the public sector could be expected.

## 6. Technical Feasibility

Cool roofs are already a part of Title 24, and urban forestry has long been recognized a key to energy conservation and urban gentrification, thus, these technologies are feasible and proven.

## 7. Additional Considerations

**Affected Entities:** Construction permit jurisdictions, state and local governments, construction industry

**Trade Associations:** Construction industry associations

**Government Agencies to coordinate with:** California Energy Commission & LBNL

**8. Division:** Research Division  
**Staff Lead:** Ash Lashgari  
**Section Manager:** Eileen McCauley  
**Branch Chief:** TBD

## 9. References

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<http://www.census.gov/acs/www/Products/Profiles/Single/2003/ACS/Tabular/040/04000US063.htm>

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B33*  
ID NUMBER:         *SCAQMD-4*  
TITLE:                *STRENGTHEN LIGHT-DUTY VEHICLE STANDARDS*  
PROONENT:         *SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2012.

In September 2004 the California Air Resources Board approved regulations to reduce greenhouse gas emissions from new motor vehicles. The regulations apply to new passenger vehicles and light duty trucks beginning with the 2009 model year. The standards adopted by the Board phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009-2012) standards will result in about a 22 percent reduction as compared to the 2002 fleet, and the mid-term (2013-2016) standards will result in about a 30 percent reduction.

The proposed strategy is the second phase of the 2004 regulation. This timing of 2012 will allow staff the time necessary to complete inventory research, interagency coordination, economic analyses, staff reports, stakeholder workshops, and public hearings to support the necessary regulation(s).

## 3. Early Action Description

Adopt new standards to phase in beginning in the 2017 model year (following up on the existing mid-term standards that reach maximum stringency in 2016). The technologies that might be employed include highly efficient hybrid vehicles, use of lightweight materials to reduce vehicle mass, and reductions in air conditioning related emissions through the use of cool paints, low-GWP refrigerants, or other approaches.

## 4. Potential Emission Reductions

The currently adopted standards call for about a 30 percent reduction of GHGs by 2016. Assuming that the new standards call for about a 50 percent reduction, phased in beginning in 2017, this measure would achieve about a 4 MMT reduction in 2020. The reduction achieved by this measure would significantly increase in subsequent years as clean new vehicles replace older vehicles in the fleet—staff estimates a 2030 reduction of about 27 MMT.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Not yet determined.

## **6. Technical Feasibility**

The technologies involved in this strategy are either being proved or showing promising technical feasible. For example, available technologies that could be widely used on light-duty vehicles by 2012 include:

- Variable valve timing & lift
- Cylinder de-activation
- Gasoline direct injection - stoichiometric
- Turbocharging or cylinder deactivation
- 6-speed automatic and automated manual transmission
- Electric power steering
- Improved alternator
- More efficient, low-leak air conditioning
- Improved aerodynamics
- E85 vehicles

Additional technologies that could be widely used by 2016

- Extensive use of E85 vehicles
- Homogenous Combustion Compression Ignition (HCCI)
- Integrated Starter Generators (ISG)
- Camless Valve Actuation (CVA)
- Diesels
- Hybrids

## **7. Additional Considerations**

In the near term, staff will continue to evaluate emerging technologies that have the potential to provide additional greenhouse gas reductions. Some technologies discussed under this subject can be implemented via separated early actions. Please refer to this report for detailed discussion.

<b>8. Division:</b>	Mobile Source Control Division
<b>Staff Lead:</b>	TBD
<b>Section Manager:</b>	TBD
<b>Branch Chief:</b>	TBD

## **9. References:**

*Work Plan for Potential GHG Reduction Measure, Air Resources Board 2-1.*



# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B34*  
ID NUMBER: *SCAQMD-5*  
TITLE: *OFF HIGHWAY RECREATIONAL VEHICLE (OHRV)  
EVAPORATIVE EMISSIONS CONTROL*  
PROPONENT: *2007 STATE IMPLEMENTATION PLAN AND SOUTH COAST  
AIR QUALITY MANAGEMENT DISTRICT*

## 2. Staff Recommendation

Staff recommends that this measure not be listed as an early action. Staff is aware of the potential climate benefit from hydrocarbon emission reductions, but additional developments are needed to address remaining scientific uncertainties regarding their climate impacts. Staff recommends that ARB continue to track the subject and further evaluation be conducted as appropriate. The strategy will remain on track for its air quality benefits.

## 3. Early Action Description

The OHRV category includes off highway motorcycles, ATVs, sand cars, and specialty vehicles. The OHRV evaporative emissions regulation will control primarily hydrocarbon emissions. Hydrocarbons are ozone precursors and ozone is a greenhouse gas. OHRVs will use proven automotive control technology including:

- Low Permeation Fuel Lines
- Low Permeation Fuel Tanks
- Carbon Canisters
- Fuel Injection

Additionally ARB will evaluate two implementation approaches:

1. A performance standard that will require equipment to be tested and meet a certain emission standard.
2. A design standard that will require equipment to use certified components. Each component must be tested and meet a certain emission standard.

## 4. Potential Emission Reduction

The OHRV regulation is expected to be implemented in 2012. When fully implemented in 2020, hydrocarbons are projected to be reduced by 11.3 TPD<sup>1,2</sup>. A reduction of hydrocarbon emissions will lead to a reduction in ozone. However, currently there is no model that projects the CO<sub>2</sub>-equivalent warming impact for hydrocarbon emissions.

## **5. Estimated Cost / Economic Impacts and Impacted Sectors / Entities**

An initial staff estimate of the increased cost to consumers to purchase an OHRV with evaporative controls is \$350. It is expected that OHRV manufacturers will pass the cost of the regulation onto the OHRV consumer. When fully implemented in 2020 the total cost will be \$588 million<sup>3</sup>. OHRV dealers may be adversely affected by an increase in equipment price of OHRVs.

## **6. Technical Feasibility**

Potential technology that will control hydrocarbon emissions from OHRVs includes low permeation fuel tanks, low permeation fuel lines, carbon canisters, and fuel injection. These types of control technology have been proven on on-road vehicles for over 25 years. Recently evaporative controls have also been required on off-road categories such as land and garden equipment.

## **7. Additional Considerations**

Currently ARB has aligned its regulatory approach with a U.S. EPA regulation that sets permeation standards for fuel tanks and fuel lines. However, ARB's OHRV regulatory initiative will evaluate the stringency of those standards to see if they can be tightened. ARB will also seek emission reductions from other sources within the category such as carburetors and running losses.

<b>8. Division:</b>	Monitoring and Laboratory Division
<b>Staff Lead:</b>	Pippin Mader
<b>Section Manager:</b>	James Watson
<b>Branch Chief:</b>	Manjit Ahuja

## **9. References**

<sup>1</sup> Full implementation assumed at 95%

<sup>2</sup> All emission calculations based on ARB's Off-road 2007 Model and 75% control

<sup>3</sup> Controlled population of ~1.68 million in 2020 times \$350

## **Staff Analysis of Proposed Early Action for Climate Change Mitigation in California**

### **2. Early Actions Strategy Name and Proponent**

SUMMARY #            *B35*  
ID NUMBER:         *SCAQMD-5*  
TITLE:                *DETERMINATION OF EVAPORATIVE EMISSIONS FROM  
PLEASURE CRAFT*  
PROPONENT:        *2007 STATE IMPLEMENTATION PLAN AND SOUTH COAST  
AIR QUALITY MANAGEMENT DISTRICT*

### **2. Staff Recommendation**

Staff recommends that this measure not be listed as an early action. Staff is aware of the potential climate benefit from hydrocarbon emission reductions, but additional developments are needed to address remaining scientific uncertainties regarding their climate impacts. Staff recommends that ARB continue to track the subject and further evaluation be conducted as appropriate. The strategy will remain on track for its air quality benefits.

### **3. Early Action Description.**

The Pleasure Craft category includes inboard, outboard, sterndrive, and personal watercraft. The Pleasure Craft evaporative emissions control regulation will reduce hydrocarbon emissions. Hydrocarbons are ozone precursors and ozone is a greenhouse gas. Pleasure Craft will use proven automotive control technology including:

- Low Permeation Fuel Lines
- Low Permeation Fuel Tanks
- Carbon Canisters
- Fuel Injection

### **4. Potential Emission Reduction**

The Pleasure Craft regulation is expected to be implemented in 2012. Hydrocarbon emissions are projected to be reduced by 16 TPD in 2012. When fully implemented in 2035<sup>1,2</sup>, hydrocarbons are projected to be reduced by 53 TPD. However, currently there is no model that projects the CO<sub>2</sub>-equivalent warming impact for hydrocarbon emissions.

### **5. Estimated Cost / Economic Impacts and Impacted Sectors / Entities**

An initial staff estimate of the increased cost to consumers to purchase a boat with an evaporative control system is \$350<sup>3</sup>. The estimated increased cost is minimal when

compared to the current cost of a new boat. When partially implemented in 2020, the cost to consumers is projected to be \$310 million. When fully implemented in 2035 the total cost to consumers is estimated at \$1.13 billion<sup>4</sup>. There is no foreseeable adverse impact on any businesses or individuals.

## **6. Technical Feasibility**

Potential control technology that will reduce hydrocarbon emissions from Pleasure Craft includes low permeation fuel tanks, low permeation fuel lines, carbon canisters, and fuel injection. These types of control technology have been proven on on-road vehicles for over 25 years. Recently evaporative controls have also been required on off-road categories such as land and garden equipment. Furthermore, a 2005 in-use study of Pleasure Craft retrofitted with carbon canisters conducted by the National Marine Manufacturers Association demonstrated technical feasibility for marine applications and lessened boat manufacturer concerns.

## **7. Additional Considerations**

The proposal being developed does not seek to retrofit existing boats with control technology due to cost and safety issues. Because of their lengthy useful life, it may take up to three decades for the inventory of Pleasure Craft to become fully compliant subsequent to implementation of the regulation 2012.

<b>8. Division:</b>	Monitoring and Laboratory Division
<b>Staff Lead:</b>	Fredrick Burriell
<b>Section Manager:</b>	James Watson
<b>Branch Chief:</b>	Manjit Ahuja

## **9. References**

<sup>1</sup> Full implementation assumed at 95%

<sup>2</sup> All emission calculations based on ARB's Off-road 2007 Model and 70% control reduction

<sup>3</sup> Cost estimates based on a per vehicle control technology cost of \$350

<sup>4</sup> Controlled population of ~3.22 million in 2035 times \$350.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B36*  
ID NUMBER:         *EA 3-3*  
TITLE:                *VESSEL SPEED REDUCTION*  
PROPONENT:        *AIR RESOURCES BOARD*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. At this time, staff is evaluating whether this is most appropriately managed as a regulatory item or a voluntary measure.

The staff recommends retaining the vessel speed reduction (VSR) measure as an early action for the following reasons:

- the need to gather additional information on the scope, emissions impact, cost, and environmental impacts of the measure; and
- the need for stakeholder input on whether a voluntary or regulatory approach should be taken.

Based on preliminary emissions estimates, the overall weight of evidence suggests that this measure would fall under the medium category for regulatory action (see subsection 4 for emission benefits).

## 3. Action Description

As part of our efforts under the Diesel Risk Reduction Plan, Goods Movement Emissions Reduction Plan, and Assembly Bill 32 - Greenhouse Gas Initiative, the Air Resources Board (ARB) staff is evaluating the need to develop an ocean-going VSR program. Ocean-going VSR is primarily a measure designed to reduce oxides of nitrogen (NO<sub>x</sub>) emissions, but also provides reductions in diesel PM emissions, oxides of sulfur (SO<sub>x</sub>) emissions, and carbon dioxide (CO<sub>2</sub>) emissions.

Over the past six years, a VSR program has been in place at the Port of Los Angeles and Port of Long Beach (POLA/POLB). The program requests that vessels reduce their speed to 12 knots beginning 20 nautical miles (nm) off shore from the POLA/POLB. Currently, the POLB maintains a Green Flag Program which is an incentive program that offers reduced dockage fees for those vessels in compliance with VSR. The compliance rate for the POLB Green Flag Program is about 80 percent.

ARB staff has begun a technical assessment of the impacts associated with VSR for ocean-going vessels. As part of the technical assessment, staff will be evaluating

emission reduction benefits of a VSR measure in and out of California ports and along the California coast within 24 nm, 40 nm, and 100 nm.

The staff assessment is in its very early stages. ARB staff held its first VSR workshop on July 12, 2007. At this workshop, ARB staff presented an overview of their activities related to the VSR assessment and shared some key elements needing industry's assistance. To conduct a full evaluation, ARB staff is in need of additional data to refine our emissions inventory, such as emission factors, speed data from ports other than POLA/POLB, as well as, an understanding of the operating cost impacts to the industry. ARB staff expects to release a draft technical assessment report with the results of their evaluation by the end of 2007. The evaluation in this report will be key to determining the need and best approach to implement a regulatory or a voluntary VSR measure.

#### **4. Potential Emission Reductions**

VSR is primarily a measure designed to reduce NO<sub>x</sub> emissions, but also provides reductions in diesel PM emissions, SO<sub>x</sub> emissions, and CO<sub>2</sub> emissions. ARB staff has estimated the potential emissions reductions as a result of implementing a statewide VSR program within 24 nm and 100 nm of the California coastline. This preliminary assessment is based on the emissions benefits estimated using emissions factors from the use of low sulfur (0.1%) marine distillate in marine main and auxiliary engines and 2006 port call data from the California State Lands Commission. Our preliminary assessment suggests that the implementation of VSR reduces pollutants such as NO<sub>x</sub>, diesel PM, and SO<sub>x</sub> by an average of 30 percent within 24 nm of the California coast. In addition to these criteria pollutant emission reduction benefits, if a VSR program is implemented at 24 nm, the potential CO<sub>2</sub> emission reductions in 2010 are estimated to be 0.62 million metric tons of CO<sub>2</sub> (MMTCO<sub>2</sub>) and increasing to 0.97 MMTCO<sub>2</sub> by 2020. If a VSR measure was implemented at a distance of 100 nm, then the additional CO<sub>2</sub> emission reductions in 2010 are estimated to be approximately 0.5 MMTCO<sub>2</sub> and in 2020 approximately 0.83 MMTCO<sub>2</sub>. These estimates exclude the emissions benefits already achieved by the POLA/POLB at a compliance rate of about 80 percent.

A VSR program at other ports, such as San Diego and Hueneme, may also provide emissions benefits, and to a lesser extent, San Francisco Bay Area ports. It is questionable whether a coastline VSR measure will achieve significant emission benefits.

The CO<sub>2</sub> emission reduction potential rating for a VSR measure within 24 nm of the California coast is estimated to be in the medium (>0.1 to 1.0 MMTCO<sub>2</sub>) category.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The estimated costs and economic impacts of a regulatory or voluntary VSR measure have not been evaluated. A cost impact analysis for either a regulatory or voluntary VSR measure would need to include an estimate of the increase in the cost of operation to shipping companies due to reducing speeds in and out of California ports and along the coastline, increase cost of fuel used in auxiliary engines due to increased time traveling to port versus the fuel savings due to decreased ship engine power requirements, costs borne by the industries/terminals affected by a VSR measure, costs to ports in developing infrastructure improvements (i.e., radar equipment), and costs needed for enforcing any speed reduction measure. In addition to the POLA/POLB, staff is currently evaluating other major ports such as those in the Bay Area, San Diego, and

Hueneme. Staff is also looking at the impact to the industry if VSR was implemented while transiting along the California coastline within 24 nm and 100 nm.

Voluntary measures, such as seen in the POLB Green Flag Incentive Program, may require port and terminal-specific costs. Some of the incentives of this program include reduced dock fees for those complying with the VSR program and tariff reduction incentives. The San Pedro Bay Clean Air Action Plan adopted in 2006 for the POLA/POLB, have estimated the costs of controls for the voluntary VSR measure to be approximately 4.4 million dollars for 2010. The POLA/POLB has already committed to fund a maximum of 11.3 million dollars through 2010/2011 for each port to implement the port's Clean Air Action Plan.

## **6. Technical Feasibility**

A voluntary VSR program has been in place at the POLA/POLB over the past six years. The POLA/POLB accounts for over half of the port calls statewide. This VSR program requested ships to voluntarily reduce their speed to 12 knots at a distance of 20 nm from the California coast. Currently, the POLB maintains the Green Flag Incentive Program which offers reduced dockage fees and environmental awards for vessels that voluntarily reduce their speeds in and out of the POLB. This program has been very successful as shown by its current 80 percent compliance rate. A VSR program is clearly technologically feasible. However, reducing speeds for an extended period of time transiting along the coast has not been evaluated. There is some information that maintaining a slower speed for extended distances may cause adverse mechanical effects on a vessel's main engine. This analysis will need further evaluation.

## **7. Additional Considerations**

- With the exception of the voluntary programs at the POLA/POLB, no federal or other state VSR regulations are currently in place.
- VSR activity falls under ARB jurisdiction and legal authority. ARB's authority to regulate emissions beyond 3 nm is being challenged in court. Significant legal challenges are likely if the ARB elects to implement a VSR regulation beyond 24 nm.
- At this time, we are evaluating the feasibility of both regulatory and voluntary measures. Both approaches will consider speed reductions from direct travel in and out of major ports and evaluate the inclusion of transiting up and down the California coast. Voluntary approaches can include agreements or incentive programs between port and terminal operators, vessel owners and operators, and government agencies. Regulatory measures would take the form of an airborne toxic control measure.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Hafizur Chowdhury
<b>Section Manager:</b>	Robert Krieger
<b>Branch Chief:</b>	Dan Donohoue

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B37*  
ID NUMBER:        *ENVIRO-2*  
TITLE:              *ANTI-IDLING ENFORCEMENT*  
PROPONENT:       *ENVIRONMENTAL STAKEHOLDERS*

## 2. Staff Recommendation

This measure is recommended for addition to the list of early actions. The Board date for consideration of this non-regulatory item would be the 4<sup>th</sup> quarter of 2008.

This strategy will ensure that climate change benefits are realized from an existing anti-idling rule. It is believed that the 0.7 million metric tons per year CO<sub>2</sub> reduction listed in the 2005 staff report for the anti-idling rule have not yet been claimed.

**Summary:** Restricting vehicle idling (in this case, heavy-duty commercial diesel vehicles) reduces the amount of fuel burned which in turn, causes fewer emissions of greenhouse gases. Staff recommends that this measure become an early action item for the following reasons:

- 1) An anti-idling regulation is currently in place;
- 2) An enhanced version of the current anti-idling regulation is slated to commence enforcement on January 1, 2008; and
- 3) Proposed legislation (Assembly Bill [AB] 233, Jones), if adopted, would authorize and require ARB to further enhance its enforcement of the anti-idling regulation. This bill calls for an enhanced enforcement plan to be adopted by the Board by January 1, 2009.

If this bill is not enacted, staff could include enforcement enhancements through a Board action directed at reviewing and amending the current anti-idling regulation (with Board hearing no sooner than 2011).

## 3. Early Action Description

The burning of diesel fuel contributes to greenhouse gas emissions. This strategy will reduce greenhouse gases by reducing the amount of fuel burned through unnecessary idling. AB 233 calls for adoption of an enhanced enforcement plan that would be heard by the Board as a non-regulatory item.

- 1) ARB adopted a diesel particulate air toxic control measure (Title 13 of the California Code of Regulations, Section 2485) in June 2004 to control idling of diesel-fueled commercial motor vehicles. Enforcement commenced the following year. This rule prohibits, with some exceptions, the idling of diesel-fueled commercial motor vehicles for more than five minutes, and applies to both trucks and buses greater than 10,000 lbs. gross vehicle weight. The measure also



prohibits operation of a diesel-fueled auxiliary power system for more than five minutes within 100 feet of individual or multi-family housing units. The penalty for violating the idling regulation is currently a minimum of \$100.

- 2) In October 2005, the Board approved an additional regulatory measure that eliminated the exemption for new and in-use trucks with sleeper berths starting in January 2008, thus requiring sleeper berth trucks to shut down and use alternative cab climate control technologies. In addition, the Board approved an amendment requiring that all new California-certified 2008 and subsequent model year heavy duty diesel engines be equipped with a non-programmable engine shutdown system that automatically turns off the engine after five minutes of idling. Enforcement of these provisions will begin in 2008.
- 3) AB 233, Jones, currently pending approval by the California Legislature, calls for:
  - a) Enhanced field enforcement of anti-idling and other ARB regulations. AB 233 would require ARB to review existing enforcement regulations and adopt a plan for enhanced and coordinated enforcement of these regulations by January 1, 2009. Implementation of the plan would address staffing needs, goals for inspection efforts, education and training. Increases in field enforcement would flush out additional violators and give them fewer opportunities to disobey the regulation.
  - b) Increased penalties for violations of anti-idling regulations. It is assumed that increasing the penalty from \$100 to \$300 per violation will increase the deterrent effect, resulting in improved compliance.
  - c) Restriction on registrations of heavy-duty diesel vehicles with uncorrected idling violations. This would serve as an additional enforcement tool to encourage compliance.

#### **4. Potential Emission Reductions**

The emission numbers in the tables below do not represent an additional benefit due to enhanced enforcement. Rather, the numbers show the benefits of 100% compliance with the existing anti-idling rule. Enhanced enforcement is necessary in order to achieve a high compliance rate.

The elimination of non-essential diesel fueled vehicle idling reduces greenhouse gases as reported in ARB's anti-idling program staff reports. According to ARB's Initial Statement of Reasons for Proposed Rulemaking dated September 2005, the proposed sleeper berth anti-idling regulation amendments alone will reduce CO<sub>2</sub> emissions by nearly 1,751 metric tons per day (MTPD) and 0.6 million metric tons per year (MTPY) in 2010, and 2,068 MTPD and 0.7 million MTPY in 2020. (See [www.arb.ca.gov/regact/hdvidle/isor.pdf](http://www.arb.ca.gov/regact/hdvidle/isor.pdf), page 46). Enhanced enforcement of these anti-idling regulations will reduce greenhouse gas emissions by ensuring that the intended benefit of 0.7 million MTPY is fully realized by 2020.

The tables below provide the estimated statewide emissions benefits projected in metric tons per year for the currently enforced anti-idling regulation and the sleeper berth exemption amendments to these regulations. However, these benefits assume 100% compliance. History has shown that no program achieves 100% compliance and that enhanced enforcement does lead to higher compliance rates. Based on a relatively small

sample of idling inspections, the current program's rate of compliance is approximately 95%. However, given the limited number of idling inspections (due to resource constraints), it is assumed that this is not representative of statewide compliance rates.

**Estimated Statewide Idling Emission Benefits - Non-Sleeper Trucks (Metric Tons/Year) – Beginning in 2005**

	PM	NO <sub>x</sub>	HC	CO	CO <sub>2</sub>
CA Registered	151	4717	671	2631	312,344

Source: ARB's Initial Statement of Reasons for Proposed Rulemaking, July 22, 2004.

**2010 Estimated Statewide Idling Emission Benefits – Sleeper Trucks Only**

**Baseline Emissions (Metric Tons/Year) Calendar Year 2010**

	Vehicles	NO <sub>x</sub>	ROG	PM	CO <sub>2</sub>
CA Registered Sleeper Trucks	30,161	6570	694	128	397,485
Out-of-State Sleeper Trucks	45,241	10,950	840	113	596,045
Total Baseline	75,402	17,520	1533	241	993,530

**Emission Reductions (Metric Tons/Year) Calendar Year 2010**

	Vehicles	NO <sub>x</sub>	ROG	PM	CO <sub>2</sub>
CA Registered Sleeper Trucks	30,161	5475	621	88	255,135
Out-of-State Sleeper Trucks	45,241	9490	730	55	383,980
Total Baseline	75,402	15,330	1387	139	639,115

**2020 Estimated Statewide Idling Emission Benefits – Sleeper Trucks Only**

**Baseline Emissions (Metric Tons/Year) Calendar Year 2020**

	Vehicles	NO <sub>x</sub>	ROG	PM	CO <sub>2</sub>
CA Registered Sleeper Trucks	35,652	8760	657	55	470,120
Out-of-State Sleeper Trucks	53,478	12,775	913	26	705,180
Total Baseline	89,130	21,535	1606	81	1.18M

**Emission Reductions (Metric Tons/Year) - Calendar Year 2020**

	Vehicles	NO <sub>x</sub>	ROG	PM	CO <sub>2</sub>
CA Registered Sleeper Trucks	35,652	7300	584	26	301,490
Out-of-State Sleeper Trucks	53,478	11,315	876	7.3	453,695
Total Baseline	89,130	18,615	1460	33	754,820

Source: ARB's Initial Statement of Reasons for Proposed Rulemaking, September 1, 2005

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The current anti-idling regulations provide for savings of approximately \$100 million per year in reduced fuel and maintenance costs. The sleeper berth exemption amendments to these regulations provide an additional annual savings of approximately \$20 million per year in reduced fuel and maintenance costs. The sleeper berth exemption also is projected to save approximately 70 million gallons of diesel fuel per year.

To comply with the sleeper berth exemption amendments, vehicle owners may spend between \$1,000 and \$10,500 depending on the type of alternative power selected and the application needed. However, it is expected that vehicle owners will recover their initial investments over time through the fuel and maintenance savings discussed above. Although ARB estimates cost recovery times to range between 8 months and 3 years, actual recovery times will solely depend on the alternative(s) selected and the amount of time spent at idle. Financial incentives may be available for qualified zero-emissions technologies through the Carl Moyer Program.

Costs to State – If enhanced enforcement is to be achieved, additional resources will be necessary to increase enforcement presence.

## **6. Technical Feasibility**

Technologies that will allow vehicle operators to maintain cab comfort while not running the vehicle's main engine are currently available. Some of these technologies are diesel-fueled auxiliary power systems, fuel-fired heaters, battery-electric auxiliary power systems, vehicle-battery-powered systems, truck stop electrification (on-board and off-board power infrastructure), and thermal energy storage systems.

## **7. Additional Considerations**

A number of states have similar laws and some are more stringent than California's current law. However in 2008, California's law will no longer exempt idling of a vehicle's main engine while the operator sleeps in a sleeper berth.

This existing rule can be enforced by ARB staff, as well as by peace officers and air district personnel. This strategy is not a regulatory item. If AB 233 is approved, it calls for ARB to adopt a comprehensive enforcement plan by January 1, 2009.

AB 233 has not yet been approved (as of August 15, 2007).

<b>8. Division:</b>	Enforcement Division
<b>Staff Lead:</b>	Nancy O'Connor
<b>Section Manager:</b>	Judy Lewis
<b>Branch Chief:</b>	Paul E. Jacobs

## **9. References:**

*Assembly Bill 233 of 2007, Jones.*

*Senate Transportation & Housing Committee Analysis of AB 233, June 1, 2007.*

ARB webpage: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>

ARB webpage: <http://www.arb.ca.gov/regact/hdvidle/isor.pdf>

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *B38*  
ID NUMBER:        *ARB 4-4*  
TITLE:              *SF<sub>6</sub> REDUCTIONS FROM THE NON-ELECTRIC SECTOR*  
PROPONENT:       *STAKEHOLDER SUGGESTION*

## 2. Staff Recommendation

This measure is recommended for addition to the list of discrete early actions. The Board date for consideration of this item is anticipated in 1<sup>st</sup> quarter of 2009.

The staff recommends developing regulations that ban the use of sulfur hexafluoride (SF<sub>6</sub>) for non-electricity sector/semiconductor applications where technologically feasible and cost-effective alternatives are available. As part of the assessment, strategies for achieving voluntary reductions will also be evaluated.

## 3. Early Action Description

This strategy applies to uses of SF<sub>6</sub> other than the electrical utility industry and the semiconductor industry, which will be evaluated under separate strategies. The largest non-utility industry, non-semiconductor industry uses of SF<sub>6</sub> identified by the staff to date include the magnesium manufacturing and casting operations, air quality tracer studies, and a gas for testing laboratory hoods to ensure worker safety and that Cal-OSHA ventilation requirements are met. Other uses cited include accelerators, leak detection, optical fiber production, glazing, medical, and refining, but the extent of these uses in California is currently unknown. The staff plans to identify all of the uses of SF<sub>6</sub> in California, and the amount used, as part of its evaluation. As part of the regulatory development process, the staff will assess other uses of SF<sub>6</sub>, the associated emissions, mitigation options as well as cost to determine whether action is warranted. The U.S. EPA has formed a "Magnesium Industry Partnership" to voluntarily phase-out the use of SF<sub>6</sub> in the magnesium industry by the end of 2010, so a regulation of this industry may be unnecessary. Nationwide, emissions from the magnesium industry are about 2.7 MMTCO<sub>2</sub>E per year. There are currently only three companies in California that have magnesium production and casting operations and that are members of the EPA partnership. The SF<sub>6</sub> emissions from these companies are currently unknown. But scaling the nationwide estimated of 2.7 MMTCO<sub>2</sub>E per year to California by the number of production facilities gives a California number of about 0.09 MMTCO<sub>2</sub>E per year.

The staff envisions banning the use of SF<sub>6</sub> in non-utility, non-semiconductor applications where safe, cost-effective alternatives are available. These applications may include magnesium production and casting operations, air quality tracer gas studies, and ventilation tests for laboratory hoods. The staff will investigate other possible uses of

SF<sub>6</sub> during the development of the regulations. It is important that all uses of SF<sub>6</sub> be investigated and considered given its high GWP, particularly if the application is one in which the compound is deliberately emitted, such as tracer gas applications. One pound of SF<sub>6</sub> emitted is equivalent to about 10 metric tons of carbon dioxide, from a global warming perspective.

#### **4. Potential Emission Reductions**

##### **Statewide Emission Inventory**

**2020 GHG Emission Inventory:** It is estimated that, nationwide, about 10 percent of the total SF<sub>6</sub> is used in applications other than the utility and semi-conductor industries. It is also estimated that about half of this 10 percent is used in the magnesium industry. The most recent estimate of emissions in California from both electric utilities and semiconductor manufacturing operations is about 1.6 MMTCO<sub>2</sub>E per year (CEC, 2006). Assuming that the proportion of SF<sub>6</sub> emitted to the amount of SF<sub>6</sub> used in other applications is the same as that for the utility and semiconductor applications, emissions from the other applications would be about 0.18 MMTCO<sub>2</sub>E per year in California. Nationwide, SF<sub>6</sub> emissions from the magnesium industry are currently about 2.7 MMTCO<sub>2</sub>E per year. Scaling this number down to the number of production facilities in California gives a California emission estimate of about 0.09 MMTCO<sub>2</sub>E per year. However, if the U.S. EPA Magnesium Industry Partnership is successful in phasing out the use of SF<sub>6</sub> by the end of 2010, the emissions from the magnesium industry will be zero in 2020. This leaves at least 0.09 MMTCO<sub>2</sub>E per year from other applications such as tracer studies and laboratory hood tests. However, it is likely that emissions from these other applications are somewhat higher than 0.09 MMTCO<sub>2</sub>E per year due to the fact that the ratio of amount of gas emitted to amount used in these applications is higher than that for utilities. In the utilities, the gas is emitted gradually as it escapes from enclosed systems, while in tracer studies and hood tests it is emitted instantaneously.

**Anticipated 2020 Reductions:** It is anticipated that all, or nearly all, of the emissions from non-utility, non-semiconductor use would be eliminated under the staff proposal. Therefore, the reductions are estimated to be on the order of 0.1-0.2 MMTCO<sub>2</sub>E per year.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Alternative gases have been identified for magnesium production and casting operations, and for laboratory hood tests performed to ensure adequate ventilation rates. The cost and economic impacts of using these gases will be evaluated during the regulatory development process, but the difference in cost would be expected to be modest.

#### **6. Technical Feasibility**

As part of the U.S. EPA's Magnesium Industry Partnership, magnesium production and casting operations have been developing the use of gases other than SF<sub>6</sub> to provide the

cover gas protection provided by SF<sub>6</sub>. The partnership is attempting to meet the goal of phasing out SF<sub>6</sub> by 2010.

The staff will investigate both the technical and economic feasibility of using alternative gases in air quality tracer studies and laboratory hood tests done to comply with Cal-OSHA ventilation standards. The technical and economic feasibility of using alternative gases will also be evaluated for any other use of SF<sub>6</sub> identified by the staff.

## **7. Additional Considerations**

Some of the factors that will need to be carefully evaluated include determining if there are alternative gases as safe and effective as SF<sub>6</sub> with lower lifecycle GHG emissions. To the extent that alternatives are available, staff would also investigate whether a voluntary measure such as a voluntary phase-out program would be as effective as a regulatory approach.

**Affected Entities:** Companies that produce magnesium or magnesium castings, air pollution and air quality researchers, universities, industries, and other institutions that have laboratory hoods that are subject to Cal-OSHA standards.

**Trade Associations:** North American Die Casting Association (DADCA), Compressed Gas Association, Associations which include industrial hygienists. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE).

**Government Agencies to coordinate with:** U.S. EPA, Cal-OSHA

**Proposed Board Hearing Date:** January, 2009

<b>8. Division:</b>	Research Division
<b>Staff Lead:</b>	Kevin Cleary
	Greenhouse Gas Technology and Field Testing
<b>Section Manager:</b>	Mike FitzGibbon
<b>Branch Chief:</b>	TBD

## **9. References:**

*Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005, United States Environmental Protection Agency, April 15, 2007*

*Inventory of California Greenhouse Gas Emissions and Sinks: 1990-2004, California Energy Commission, December, 2006*

*Communications with Cal-OSHA staff (Mike Horowitz)*

*Nationwide SF<sub>6</sub> Sales by End Use: 1961-2003, Fourth International Conference on SF<sub>6</sub> and the Environment, November, 2006, the Rand Corporation*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY # *B39*  
ID NUMBER: *N/A*  
TITLE: *REDUCTION OF HIGH GWP GHGs USED IN CONSUMER PRODUCTS*  
PROPONENT: *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure is recommended for addition to the list of discrete early actions. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2008.

Some data regarding emissions of greenhouse gases is available from a recent survey of consumer products, which may represent possible reductions within the discrete early action timeframe. Manufacturers are also currently being surveyed to determine the extent of usage of high global warming potential (GWP) gases in several more categories of consumer products. These future survey results may lead to additional strategies with emission reduction potential that can be pursued after the deadline for discrete early action items.

## 3. Early Action Description

Consumer product formulations may be modified to reduce or eliminate the use of greenhouse gases with high GWP. Gases of interest include HFCs, HCFCs, HFEs, carbon dioxide, and nitrogen oxides, which are used as propellants in tire inflators, electronics cleaners, dust removal products, hand held sirens, hobby guns (compressed gas), party products (foam string), and other formulated consumer products. The objective of this discrete early action strategy would be to reduce the impact of high GWP GHGs used in these products when alternative formulations are available. For example, one possible form of the strategy would be to require switching when feasible from using a high GWP GHG such as HFC-134a (GWP=1300) to a GHG with a lower GWP such as HFC-152a (GWP=120). The Consumer Products Program is implemented through regulations and this proposed new discrete early action strategy would occur as part of that regulatory process.

## 4. Potential Emission Reductions

ARB staff estimate a potential emissions reduction of up to 0.25 MMTCO<sub>2</sub>E from consumer products. ARB is currently surveying consumer product manufacturers for specific information on product ingredients. Categories listed above that may contain high GWP GHGs are included in the survey. The required submission date for the survey is November 21, 2007. Analysis of survey data will provide an accurate estimate of potential emission reductions.

In 2002, A. D. Little reported that the annual North American consumption and emissions of HFCs in consumer products was 10 MMTCO<sub>2</sub>E with the two highest-use products being dust removal products and tire inflators at 4.7 and 3 MMTCO<sub>2</sub>E, respectively. California's population is about eight percent of the North American population. Assuming product usage is similar across North America and scaling with population, HFC emissions from consumer products in California are about 0.8 MMTCO<sub>2</sub>E. This value seems to be confirmed by initial results from ARB's 2003 Consumer and Commercial Products Survey.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors/ Entities**

Costs per MTCO<sub>2</sub>E are not available at this time. However, other regulations in the Consumer Products Program have been implemented in a cost effective manner. The manufacturers would bear the cost of formulation changes, then presumably pass the cost on to the consumer. Each product category would be fully evaluated for estimated costs as regulations are implemented. Any potential disproportionate impacts would depend on the individual product and whether it is used to a greater extent by any given sector of the population.

## **6. Technical Feasibility**

The ARB staff believes technology is available to make changes in some consumer product categories to decrease the use of high GWP GHGs without increasing other emissions. ARB has not previously worked with representatives of certain segments of the industry, such as manufacturers of hobby guns that use compressed gas, so determination of the technical feasibility of GHG reductions in some applications cannot be made at this time.

## **7. Additional Considerations**

Consumer Products are under ARB jurisdiction with legal authority for regulation. New regulations are scheduled to be heard by the Board in 2008. These regulations may address the use of high GWP GHGs in several product categories. An initial public meeting for the development of this regulation is scheduled for August 29, 2007. These regulations, already under development, will meet the statutory deadline for discrete early actions. Development of regulations for other categories of consumer products would fall under the Scoping Plan of The California Global Warming Solutions Act of 2006.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Jessica Dean
<b>Section Manager:</b>	David Mallory
<b>Branch Chief:</b>	Janette Brooks

## **9. References:**

*Arthur D. Little, Global Comparative Analysis of HFC and Alternative Technologies for Refrigeration, Air Conditioning, Foam, Solvent, Aerosol Propellant, and Fire Protection Applications, Final Report to the Alliance for Responsible Atmospheric Policy, March 21, 2002*



## **Staff Analysis of Proposed Early Action for Climate Change Mitigation in California**

### **1. Early Actions Strategy Name and Proponent**

SUMMARY # *B40*  
ID NUMBER: *N/A*  
TITLE: *COLLABORATIVE RESEARCH TO UNDERSTAND HOW TO  
REDUCE GREENHOUSE GAS EMISSIONS FROM NITROGEN  
LAND APPLICATION*  
PROPONENT: *STAKEHOLDERS SUGGESTIONS*

### **2. Staff Recommendation**

This measure is recommended for addition to the list of early actions. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2010.

### **3. Early Action Description**

Staff analysis suggests that nitrogen land application may be a significant source of nitrous oxide, which is a potent greenhouse gas. In order to reduce greenhouse gases while benefiting agricultural systems, landscaping and other uses staff needs to identify methodologies for better characterizing California's nitrogen cycle.

An important first step to better characterizing the relationship between nitrogen land application and nitrous oxide formation in California agriculture, landscaping and other uses as well as opportunities for emission reductions is a collaborative research effort with stakeholders. The research is expected to focus on identifying optimal ways to reduce nitrous oxide emissions while increasing soil retention of nitrogen for plant uptake. Factors such as the total acreage of crop field, the annual amount and type of nitrogen applied, the method of application, soil properties, the irrigation regime, and drainage conditions can all play a role in characterizing nitrous oxide formation and would therefore be expected to be studied as part of the work. As part of the research the ARB will collaborate with the California Department of Food and Agriculture, Department of Pesticide Regulation, commodity groups, and other stakeholders. The research is expected to ultimately support the development of guidance to improve the characterization of nitrous oxide emissions from nitrogen land applications as well as identify effective strategies for emission reductions.

### **4. Potential Emission Reductions**

The potential benefit of nitrous oxide emission reductions following from the research effort requires further assessment and is therefore to be determined. However, given the current nitrogen fertilizer use efficiency and portfolio, possible reductions from guidance that builds on the research may be on the order of 1 MMTCO<sub>2</sub>E.

## 5. Estimated Costs / Economic Impacts and the Impacted Sectors/ Entities

Entities expected to participate in the collaborative research effort as well as the subsequent development of guidance includes farm owners and operators, nitrogen fertilizer manufacturers and distributors, the California Department of Food and Agriculture, Department of Pesticide Regulation, Regional Water Boards, commodity groups, and other stakeholders. The estimated costs of the research are to be determined as are any costs or savings associated with implementing subsequent guidance.

## 6. Technical Feasibility

The ARB has an established track record of collaborating with stakeholders to ensure that high quality research is conducted and that the research facilitates the identification of effective mitigation strategies. It is anticipated that the necessary expertise to conduct the research can be secured via a contract with in-state experts.

## 7. Additional Considerations

The ARB will coordinate with the California Department of Food and Agriculture, Regional Water Control Boards, and local air quality management districts in their efforts related to Nutrient Management Plans.

<b>8. Division:</b>	Planning and Technical Support Division/Research Division
<b>Staff Lead:</b>	TBD
<b>Section Manager:</b>	TBD
<b>Branch Chief:</b>	TBD

## 9. References:

Blaylock, A.D., R. D. Dowbenko, J. Kaufmann, G. D. Binford, and R. Islam. 2004. ESN® controlled-release nitrogen for enhanced nitrogen efficiency and improved environmental safety. Picogram and Abstracts, America Chemical Society, Philadelphia, PA.  
<http://membership.acs.org/a/agro/Picogram/PicogramV67Fall2004.pdf>

Brontrager, B. 2001. Stretch your 'N' dollars using urease, nitrification inhibitors.  
<http://www.agprofessional.com/croptalk.php?id=1135>

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Li, C.S., W. Salas, and M. L. Huertos. 2004. Quantifying carbon dynamics and greenhouse gas emissions in agricultural soils of California: A scoping study. PIER Project Report, P500-04-038. California Energy Commission, Sacramento, California.  
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Scholefield, D. and N.M. Titchen. 1995. Development of a rapid field test for soil mineral nitrogen and its application to grazed grassland. *Soil Use and Management* 11 (1), 33–43.

**APPENDIX C – Staff Evaluation of Remaining  
Previously Approved Early Actions**

SUMMARY ID	SUMMARY TITLE	PAGE NUMBER
Appendix C01	Stationary agricultural engine electrification	C- 3
Appendix C02	Reduction of perfluorocarbons (PFCs) from the semiconductor industry	C- 5
Appendix C03	Foam recovery / destruction program	C- 8
Appendix C04	Guidance and protocols for local governments to facilitate GHG emission reductions	C- 12
Appendix C05	Guidance/protocols for businesses to facilitate GHG emission reductions	C- 15
Appendix C06	Reduce sulfur hexafluoride (SF6) from electrical generation	C- 18
Appendix C07	Alternative suppressants in fire protection systems	C- 20
Appendix C08	Forestry protocol endorsement	C- 23
Appendix C09	Enforcement of federal ban on HFC release during service/dismantling of MVACs	C- 26

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C01*  
ID NUMBER:         *ARB 2-2*  
TITLE:                *STATIONARY AGRICULTURAL ENGINE ELECTRIFICATION*  
PROPONENT:        *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This strategy was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this strategy is recommended.

However, given that electrification of stationary agricultural diesel engines must be considered on a case-by-case basis due to operational and cost issues, a control measure to require the electrification of these engines is impractical and cost-prohibitive for many growers (see Parts 5 and 7 for additional information). Accordingly, the approach currently being implemented is an outreach effort and therefore a Board hearing is not anticipated.

## 3. Early Action Description

As part of the outreach being conducted for the amendments to the airborne toxic control measure (ATCM) for Stationary Compression-Ignition Engines, ARB staff is working with the local air districts to encourage replacement of diesel engines with electric motors and to take advantage of incentive funding opportunities. Outreach materials and workshops will provide information regarding ATCM compliance options, including electrification. ARB staff is encouraging growers to consider switching to electric motors, especially in those cases where irrigation pumps are located in close proximity to residential areas, schools, and hospitals.

## 4. Potential Emission Reductions

This effort is expected to have a low emission reduction potential. Based on discussions with the agricultural community and electric utilities, up to 20 percent of existing stationary diesel agricultural irrigation pump engines are expected to be replaced with electric motors by 2020. This would result in a 2020 reduction of approximately 0.1 million metric tons of carbon dioxide. Given the compliance schedule in the ATCM and uncertainty regarding some incentive programs, staff is unable to estimate reductions for 2010 at this time.

## 5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities

ARB staff estimates the cost to electrify stationary agricultural engines at about \$26 million (8,600 pump engines x 20 percent x \$15,000 (average capital cost of an electric motor)). This estimate does not account for possible additional line extension and/or electrical hook-up charges (highly variable for agricultural electric customers depending on location, crop,

well-depth, and other variables), which are likely to be cost prohibitive for many growers in remote areas. The estimate also does not account for any potential incentive funds that may be available to switch from diesel- to electric-powered agricultural irrigation pumps as these funds are limited and available on a first-come, first-served basis.

## **6. Technical Feasibility**

Outreach efforts will encourage the use of electric motors, which are established and proven in agricultural operations. Approximately 82 percent of all stationary agricultural irrigation pumps in California are currently powered by electric motors, 15 percent are diesel-powered, and three percent are powered by other means (e.g., natural gas, liquefied petroleum gas, propane, butane, or gasoline).

## **7. Additional Considerations**

The Board approved the amendments to the ATCM for Stationary Compression-Ignition Engines at the November 2006 public hearing. The amendments contain emission performance standards for agricultural engines but do not mandate electrification or any other specific compliance option. As explained in the September 2006 staff report for the ATCM, the Board had previously directed ARB staff to investigate the opportunities and challenges associated with replacing California's existing population of stationary diesel agricultural engines with electric motors. During the investigation, ARB staff identified many variables associated with farm and ranch electrical power use in California. These variables include irrigation method and schedule, availability of surface water, well pumping depth, quantity of water needed, fuel costs, electricity costs, and electrical infrastructure proximity and adequacy. Because of these variables, ARB staff concluded that any decision about the desirability or difficulty of converting stationary diesel agricultural engines to electric motors must be made on a site-by-site basis. Nonetheless, ARB staff believes that most engines will be replaced with new cleaner certified diesel engines or with electric motors. Retrofit and alternative fuels are other potential means of compliance. Staff is unable to predict which compliance option farmers will choose.

<b>8. Division:</b>	Stationary Source Division
<b>Staff Lead:</b>	Jon Manji
<b>Section Manager:</b>	Richard Boyd
<b>Branch Chief:</b>	Dan Donohoue

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C02*  
ID NUMBER:         *ARB 2-4*  
TITLE:                *REDUCTION OF PERFLUOROCARBONS (PFCs) FROM THE SEMICONDUCTOR INDUSTRY*  
PROPONENT:         *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, it is recommended that this measure be reclassified as a discrete early action. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2008.

## 3. Early Action Description

The semiconductor industry uses PFCs primarily for etching circuits in silicon wafers and cleaning chemical vapor deposition tool chambers where thin films of chemicals are laid down onto silicon wafers. During these processes, a portion of the PFC gases used is released to the atmosphere.<sup>1</sup> There are four technologies industry has either employed or considered to reduce PFC emissions from semiconductor production:

- Process Optimization (optimizing the use of PFCs, such as in the chamber cleaning process);
- Alternative Chemistry Development;
- Emission Abatement; and
- Recovery/Recycling (separation of fluorinated compounds from other gases for further processing and reuse).

This discrete early action item will consider mandating the process optimization and alternative chemistry development technologies currently in use by some manufacturers. ARB would also evaluate the technical and economic feasibility of requiring emissions abatement and recovery/recycling strategies that may further reduce PFC emissions.

A few California manufacturers currently participate in voluntary national efforts to reduce PFC emissions to 10 percent below 1995 levels by 2010. A 2001 Memorandum of Understanding (MOU) agreement with the U.S. EPA provides details of these efforts.<sup>2</sup> Only three of 93 California manufacturers (about 15 percent of California production) participate in the MOU agreement.<sup>3</sup> Manufacturers and the U.S. EPA reached the agreement well before the adoption of Assembly Bill 32. Consequently, the State and federal courses of action have different goals and timeframes and information on any actions being taken by the remaining California companies to reduce PFC emissions is limited. A survey of the industry will be necessary to improve the accuracy of the emissions data.

#### **4. Potential Emission Reductions**

ARB staff proposed a GHG reduction goal of 0.5 MMTCO<sub>2</sub> equivalent in 2020 for the semiconductor industry in the April 2007 early actions report.<sup>4</sup> This goal will be further evaluated based on survey results from the industry and other data that become available over the next few months.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The complete cost of this regulation has not been determined at this time. For process optimization, higher costs could be incurred by older fabrication facilities as process parameters such as chamber pressure, temperature, cleaning gas flow rates and gas mixture ratios are changed to reduce gas use. Alternative chemistry development is expected to result in minor cost impacts as the cost of alternative gases would be about the same as PFC gases. The manufacturers could pass on any additional costs to the consumers through higher product prices. The significance of this impact is not known.

#### **6. Technical Feasibility**

The technical feasibility of two of the four technology options for reducing PFC emissions within the semiconductor industry is fairly well known at this time. Two technologies currently used by manufacturers are:

- **Process optimization**  
This technology reduces the amount of PFCs used and has been primarily applied to the chamber cleaning process because of high use of PFC gases for cleaning.
- **Alternative Chemistry Development**  
Nitrogen trifluoride (NF<sub>3</sub>) has been used as a substitute for hexafluoroethane (C<sub>2</sub>F<sub>6</sub>) in the chamber cleaning process to reduce PFC emissions since NF<sub>3</sub> is more effectively destroyed in the process.

Two technologies that would be further evaluated are:

- **Emissions abatement**  
Commercially available technologies can be applied to the chamber cleaning or the etching process to reduce emissions. High temperature and catalytic oxidation and plasma destruction are the most common technologies used to abate PFCs, but little is currently known about the extent of use by California manufacturers. Furthermore, the performance of abatement systems can vary greatly depending on the abatement device and process parameters, such as temperature and PFC gas flow rates.
- **Recovery/Recycling**  
These technologies have not achieved as much success as others as they are more costly or require more maintenance. The recovered compounds that are separated from other gases contain more impurities than virgin chemicals and are less likely to be used by the industry.



## 7. Additional Considerations

Additional considerations that pertain to the measure include:

This item is regulatory and falls under ARB jurisdiction. ARB has the legal authority to pursue this discrete early action item and the Climate Action Team supports further PFC reductions by the semiconductor industry.<sup>5</sup> Staff recommends that this item be presented to the Board within 18 months.

**Leakage Considerations:** The movement of semiconductor production facilities and older equipment from California to regions beyond California may result in leakage effects. The Semiconductor Industry Association (SIA) has indicated that California semiconductor manufacturing has been in decline over the last decade. The reasons vary from high capital costs, to tax advantages offered by other state and foreign governments, to lower financial risks associated with overseas foundry manufacturing compared to self-manufacture. The illustration provided by SIA is that from 1995 to 2006, three of the six MOU California companies ceased manufacturing operations. The corresponding decline in emissions was that California went from representing nearly 8 percent of U.S. emissions to just 3 percent. Staff needs to determine if the decline in California's emissions represents a shift of PFC emissions to other countries such as China. If so, we will need to determine if those manufacturers are using older equipment sold by California firms which may result in high emissions.

### Affected Entities

#### Industry:

- Semiconductor fabrication industry
- Semiconductor Industry Association

#### Government:

- Local air pollution control districts
- California Energy Commission
- U.S. EPA

**8. Division:** Stationary Source Division  
**Staff Lead:** Dale Trenchel  
**Section Manager:** Terrel Ferreira  
**Branch Chief:** Barbara Fry

## 9. References:

1. *Emission Reduction Opportunities for Non-CO2 Greenhouse Gases in California, Public Interest Energy Research Program: Final Project Report, California Energy Commission, July 2005.*
2. *Memorandum of Understanding between the Semiconductor Industry Association (SIA) and the United States Environmental Protection Agency, January 2001.*
3. *Internal estimate, spreadsheet filename cost.xls, 2007.*
4. *Proposed Early Actions to Mitigate Climate Change in California, Air Resources Board, April 20, 2007.*
5. *Climate Action Team Report to Governor Schwarzenegger and the Legislature, California Environmental Protection Agency, March 2006.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C03*  
ID NUMBER:          *ARB 2-5*  
TITLE:                *FOAM RECOVERY/DESTRUCTION PROGRAM*  
PROPONENT:         *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2011.

This timing will allow staff the time to complete inventory research<sup>1</sup>, interagency coordination, economic analyses, staff reports, stakeholder workshops, and public hearings to support the necessary regulation(s).

An alternative or complimentary approach may include establishing a voluntary agreement for recovery and destruction for certain foams, if the agreement can be implemented more cost-effectively and can be expected to yield similar CO<sub>2</sub>E benefits as mandatory compliance.

## 3. Early Action Description

This strategy involves a regulatory measure(s) to implement a program to recover and destroy high-GWP insulating foams from buildings, other construction/demolition (C/D) waste, and appliances at end-of-life (EOL). The appliance foam recovery would be coordinated with the US EPA, as they have implemented a similar, voluntary program with some utility providers<sup>2</sup>.

Many foams contain high-GWP GHG blowing agents, especially older insulating foams used in appliances and buildings, that contain chlorofluorocarbon (CFC) blowing agents such as CFC-11 (100-year direct GWP of 4,600).

Currently, foams are either broken (building panels) or shredded (appliances) and landfilled; at this time, no federal or state laws require that foams containing ozone depleting substance (ODS) or other high-GWP blowing agents in the foam be removed and destroyed<sup>3</sup>.

Foam recovery from appliances may either be done manually, or as part of a fully automated recovery system in which appliance refrigerant is removed/de-gassed, the appliance is

<sup>1</sup> Inventory work in this area is expected to be complete by late 2009.

<sup>2</sup> Responsible Appliance Disposal program, or RAD: <http://www.epa.gov/ozone/snap/emissions/radp.html>

<sup>3</sup> Although refrigerant removal is required at appliance EOL under federal and state law, it is unknown at this time whether foam and refrigerant recovery would be performed by the same people at the same time; the process and technician certification requirements are expected to differ.

shredded, with the refrigerant in the foam collected from the gaseous and solid phases and subsequently destroyed.

#### 4. Potential Emission Reductions

Estimated annual emission reductions of 0.9 MMTCO<sub>2</sub>E are currently possible for residential refrigerator and freezer foam recovery<sup>4</sup>. This number may be offset somewhat by CO<sub>2</sub> emissions associated with foam destruction<sup>5</sup>. Of the 0.9 MMTCO<sub>2</sub>E, 0.8 MMTCO<sub>2</sub>E is due to recovery of foam containing R-11.

The CO<sub>2</sub>E emission reductions are calculated for 2005 with only refrigerators and freezers considered since quantities of insulating foams recovered from A/Cs and building wastes annually in California are unknown. Without knowledge of the numbers and age distributions of appliances in California, 2020 emissions reductions based on sector growth and transitional blowing agent use estimates were not possible. However, it is reasonable to assume that approximately 0.9 MMTCO<sub>2</sub>E reductions will be possible every year until refrigerators and freezers containing R-11 are gone.

To summarize, by about 2012 annual emissions reductions of **0.9 MMTCO<sub>2</sub>E** may be possible by recovering foams banked in old refrigerators and freezers that would otherwise go to landfills. Emissions benefits associated with foam recovery from building and additional C/D wastes could not be estimated.

#### 5. Estimated Costs/Economic Impacts and the Impacted Sectors/Entities

The US EPA estimates that automated foam recovery at appliance EOL costs approximately **\$6.5/TCO<sub>2</sub>E**, while manual foam recovery at appliance EOL costs approximately **\$48/TCO<sub>2</sub>E**. The US EPA states that foam recovery from steel faced building panels is cost effective where large volumes of panels are in one place<sup>6</sup>.

The impacted sectors and entities would mostly be appliance salvagers/recyclers and possibly individuals disposing of foam-containing appliances, as recovery costs are expected to be passed along to the user. Recovery of foam from buildings is not currently performed.

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<sup>4</sup> The following assumptions were used: 1) 20 year lifetimes for refrigerators, 2) R-11 use in refrigerators stopped in 1995; from 1995 – 2005 HCFC-141b was used, 3) in 2005, half of disposed refrigerators contain R-11 as the foam blowing agent and the other half contain 141b, 4) 25% of the foam blowing agent is lost into the cabinet and is released into the atmosphere and that the remaining 75% is recoverable, 5) 13,000,000 refrigerator/freezers are disposed of annually in the US and 60% go to landfills or transfer stations 6) the California population fraction was roughly 13% in 2005, 7) 100-year direct GWP's of 4600 and 700 were used for R-11 and HCFC-141b, respectively, 8) blowing agent masses of 0.45 kg/appliance and 0.38 kg/appliance for R-11 and HCFC-141b, respectively, were obtained from USEPA (Dave Godwin, personal conversation, 2/07).

<sup>5</sup> An additional 0.8 MMT CO<sub>2</sub>E should be avoided at appliance EOL, as refrigerant recovery is mandated by federal and state law; this is discussed in the following strategy, ARB 4-2. Foam destruction would require a large amount of additional analysis; currently, USEPA is developing a plan to destroy ODSs at RCRA facilities, and the operating assumption is that the CO<sub>2</sub> emissions associated with relatively small amounts of foams and refrigerants are small compared to the hazardous waste destruction throughput of a typical RCRA facility, but this supposition is subject to further analysis and change.

<sup>6</sup> USEPA, Draft Proposed Measures Arising from the IPCC/TEAP Special Report & its Supplement, by End-Use, Expert Workshop on IPCC/TEAP Special Report, July 2006.

A foam recovery program for appliances is currently operating as an incentive program between the US EPA and utility companies, some of which are located in California (Responsible Appliance Disposal program, or RAD, see following strategy, ARB 4-2). The program was started in 2006 and the success of the program has not been gauged yet, although it is anticipated that a mandatory program would be more effective.

## **6. Technical Feasibility**

The technology required to remove foam blowing agents from appliances and other construction and demolition wastes is feasible, but labor intensive if manual removal is employed. Automated foam removal from appliances is technically feasible, and can be performed during scrap metal processing and recovery.

## **7. Additional Considerations**

Ozone depleting substances (ODSs) were used in the past as foam-blowing agents; CFC-11 (100-year direct GWP of 4,600) was used for many years, and phaseout of its replacement, HCFC-141b (100-year direct GWP of 700), from appliance foam has only been occurring in the past four years. Recovering and destroying ODSs may be a cost-effective way to reduce high-GWP gas emissions, and also reduces negative impacts on stratospheric ozone.

It is also possible that special facilities will need to be constructed if automated foam removal is deemed more economically feasible than manual foam removal and would therefore need to be considered in any estimates of cost-effectiveness.

The impacted sectors and entities would mostly be appliance salvagers/recyclers and possibly individuals disposing of foam-containing appliances, as recovery costs are expected to be passed along to the user. California trade associations associated with recycling of scrap metals are unknown. Coordination with the US EPA with respect to this regulation is ongoing.

<b>8. Division:</b>	Research Division
<b>Staff Lead:</b>	Whitney Leeman
<b>Section Manager:</b>	Vacant
<b>Branch Chief:</b>	Richard Corey

## **9. References**

*Arthur D. Little, Inc., Global Comparative Analysis of HFC and Alternative Technologies for Refrigeration, Air Conditioning, Foam, Solvent, Aerosol Propellant, and Fire Protection Applications, Final Report to the Alliance for Responsible Atmospheric Policy, March 21, 2002.*

*David Godwin (USEPA), Marian Martin Van Pelt and Katrin Peterson (ICF Consulting), Modeling Emissions of High Global Warming Potential Gases from Ozone Depleting Substance Substitutes, 2003.*

*IPCC/TEAP, IPCC Special Report on Safeguarding the Ozone Layer and the Global Climate System, Issues related to Hydrofluorocarbons and Perfluorocarbons, 2005.*

*SEPA, Guidance on the Recovery and Disposal of Controlled Substances Contained in Refrigerators and Freezers, 2002: [http://www.sepa.org.uk/pdf/consultation/closed/2003/fridge/fridge\\_consultation.pdf](http://www.sepa.org.uk/pdf/consultation/closed/2003/fridge/fridge_consultation.pdf)*

*USEPA, Draft Proposed Measures Arising from the IPCC/TEAP Special Report & its Supplement, by End-Use, Expert Workshop on IPCC/TEAP Special Report, July 2006.*

*USEPA, RAD program website: <http://www.epa.gov/ozone/snap/emissions/radp.html>*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C04*  
ID NUMBER:         *ARB 2-6*  
TITLE:                *GUIDANCE AND PROTOCOLS FOR LOCAL GOVERNMENTS TO  
FACILITATE GHG EMISSION REDUCTIONS*  
PROPONENT:        *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 3<sup>rd</sup> quarter of 2008.

Local governments have the power to affect the main sources of pollution directly linked to climate change through infrastructure investments, land use decisions, building codes, and municipal service management. While a handful of local governments in California have already started to plan and implement local GHG reduction measures, development of a State guidance document and local government protocols is needed to encourage and support greater and coordinated local action statewide. Furthermore, development of these items will help ensure consistency and coordination between the multiple state agencies involved with implementing AB 32, with regard to supporting and advising Local Government actions for GHG reductions.

Staff recommend developing guidance documents for Local Governments that outline GHG reduction opportunities, as well as protocols for emission reduction accounting.

## 3. Early Action Description

The first step of this strategy will be to coordinate with the Climate Action Team, local governments, the California Climate Action Registry, and local government support organizations like ICLEI (Local Governments for Sustainability). The guidance document will address: 1) best practices for local governments to reduce GHG emissions; 2) categorization and prioritization of strategies by applicability to community types (i.e., urban, suburban, rural), cost-effectiveness, time needed to achieve reductions, etc.; 3) local government protocols for emission reduction accounting; and 4) appropriate modeling tools to support emission quantification at the local level.

Specific recommendations could include: implementing green building standards, stronger recycling programs, energy conservation, changing municipal fleets to cleaner alternatives (gas-electric hybrids, natural gas fueled vehicles, etc.), promoting sustainable communities and smart growth; encouraging LED street and traffic lights; promoting alternative energy (e.g. solar).

These are effective actions that local governments can implement to reduce carbon emissions, which not only help the environment but could be cost effective.

Guidance documents and protocols from this strategy will be voluntary not regulatory and will be developed in close coordination with stakeholders representing state, local, regional and industry perspectives. A strong long-term local level education program will be necessary for successful implementation.

**Groups to work with include:**

**Trade Associations:** California Building Industry Association (CBIA), League of California Cities, California State Association of Counties (CSAC), California Association of Councils of Governments (CALCOG).

**Government Agencies:** Governor's Office of Planning and Research, California Air Pollution Control Officers Association (CAPCOA), and Local Air Pollution Control Districts, local government agencies, Cal/EPA's Climate Action Team and its Land Use/Smart Growth Subgroup, Department of Community and Housing Development, Department of Transportation, California Energy Commission, Integrated Waste Management Board.

#### **4. Potential Emission Reductions**

Potential emission reduction impacts are difficult to predict with current knowledge.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Estimated costs and economic impacts are difficult to determine at this time.

#### **6. Technical Feasibility**

With regard to developing a best practices document for Local Government, many other cities, states, and private organizations have acknowledged the need to reduce global warming pollution and have taken steps to coordinate concerted efforts. Below is a list of just a few national and international programs that staff will consider closely:

- U.S. Mayors for Climate Protection - promote actions that city governments can do to profitably and reduce carbon emissions.
- The Clinton Climate Initiative - works with C40 Large Cities Climate Leadership Group, an association of large cities dedicated to tackling climate change—to develop and implement a range of actions that will accelerate greenhouse gas emissions reductions.
- ICLEI's Cities for Climate Protection™ (CCP) Campaign - assists cities to adopt policies and implement quantifiable measures to reduce local greenhouse gas emissions, improve air quality, and enhance urban livability and sustainability. More than 800 local governments participate in the CCP, integrating climate change mitigation into their decision-making processes.

As for protocols for emission reduction accounting, the California Climate Action Registry (CCAR) is currently under contract with the ARB to develop a suite of protocols for reporting and certifying GHG emission reductions for Local Governments. As part of this effort, CCAR will be preparing a scoping document that describes the full scope of local government activities and operations to which quantification protocols can be applied. Data and analysis from this work will support development of a Local Government guidance document.

## **7. Additional Considerations**

Many of the actions that may be recommended fall under the jurisdiction of other state and local agencies therefore this strategy will provide advice and support action, rather than mandate.

An important aspect of this strategy will be verification of the emission reductions and the value associated with it. Future efforts will focus on how local governments can take credit for net reductions and best uses for those credits.

**Proposed Board Hearing Date:** July 2008

**8. Division:** Office of Climate Change  
**Staff Lead:** James Goldstene



# Staff Analysis of Proposed Early Action for Climate Change Mitigation In California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C05*  
ID NUMBER:        *2-7*  
TITLE:                *GUIDANCE/PROTOCOLS FOR BUSINESSES TO FACILITATE GHG EMISSION REDUCTIONS*  
PROPONENT:        *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 2<sup>nd</sup> quarter of 2008.

Currently, California businesses' energy consumption contributes approximately 12 MMTCO<sub>2</sub>E GHG emissions per year. Through strategies such as efficient building practices, motor vehicle fleet changes, operational changes, fossil fuel switching, and recycling, local businesses can reduce cost effectively their carbon footprint. These emission reductions range from quite minor to very significant and all reductions will assist the State in meeting its targets under AB32.

Greenhouse gas emission reduction guidance and suggested strategies for local businesses will be presented to the Board in July 2008. At present, it is anticipated that implementation of local business reduction measures will be strongly encouraged, but strictly on a voluntary basis with a dedicated and aggressive educational outreach effort. It is also anticipated that initially, guidance will be broad and, hence applicable to a broad spectrum of businesses. In time, the guidance will evolved into focused, sector-specific recommendations. To the extent possible, a robust emission verification element will be integrated into the guidance so that reductions can be quantified.

## 3. Early Action Description

This strategy will provide guidance and informational resources to local businesses on best practices, emission calculation and verification methods, case studies, cost-effectiveness information, and other tools to assist in reducing greenhouse gas emissions. The guidance will seek to distill and translate the vast amount of information already existing into tangible and concrete steps that local business can implement. Staff's efforts will be focused on reaching out to small/mid-size businesses to engage them in the development of actions, to offer guidance for estimating emissions, identifying and quantifying reductions, and facilitating actions to reduce carbon footprints. Information on relevant options, particularly those that have been implemented successfully by others at a local or national level will be highlighted.

This strategy will focus on businesses ranging from a small office to mid-size corporations and will address the climate benefits of both operational and behavioral changes. Operational changes could include the use of *Energy Star* equipment, compact fluorescent light bulbs, water conservation, recycling, and motor vehicle fleet changes. In addition to physical changes to the

operation of the business (e.g., new construction, retrofits to existing buildings), the guidance will address the benefits of behavioral changes such as incentives for carpooling/walking/bicycling to the workplace, facilitate employees walking to lunch, procuring “green” products, incentives for reducing waste/electricity consumption, Governor’s Awards program to recognize green business leaders, etc. Businesses that choose to pledge to participate in the effort for climate protection will be encouraged and assisted to inventory and report their emissions via recognized channels such as the California Climate Action Registry.

To be successful, this strategy must convince businesses to embrace new projects and initiatives from both environmental and economic perspectives. Thus, a key element of success in the strategy will be to determine how enhancements of operational efficiencies can result in increased profits for a participating business via savings in energy consumption. In addition to working with established organizations that represent or have strong ties with the targeted audience (small and medium business owners/managers), emphasis will be placed on implementation through a variety of means (e.g., information in association newsletters, presentations at trade meeting, web-based tools, etc.). ARB staff will monitor the effectiveness of and response to efforts in order and make necessary adjustments as needed to strengthen the program into the future.

#### **4. Potential Emission Reductions**

Energy efficiency measures associated with green buildings address lighting, heating and cooling, water conservation, refrigeration, and recycling and often lead to a large decrease in GHG emissions. The US Department of Energy states that new energy-efficient design can cut energy usage by 50%; renovation of existing buildings can yield savings of up to 30%. Governor Schwarzenegger signed Executive Order S-20-04 in 2004, which sets a goal of reducing energy use in State-owned buildings 20% by 2015 (from a 2003 baseline). The private commercial sector is encouraged to do the same. The California Energy Commission estimated 2004 GHG emissions in the commercial sector to be approximately 12 MMTCO<sub>2</sub>E. Thus, achieving a 20% reduction in GHG emissions as called for in the Executive Order could potentially realize a reduction of more than 2 MMTCO<sub>2</sub>E in the commercial sector.

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors/ Entities**

Cost information will vary widely depending on the specific action implemented by a local business. Thus, it is premature to report this information at this time. However, information coming from existing examples that have successfully achieved improvements indicates that the return on investment for energy efficiency measures is often recovered in three to five years, resulting in long term cost savings due to lower utility bills. Measures that could be implemented pursuant to this proposed early action are quite varied and potentially include installation of LED exit signs, efficient refrigeration systems, improved building insulation, purchase of *Energy Star* appliances and office equipment, and implementation of recycling programs. Improvements that are scaleable to square footage of operations will be pursued so that the emission reduction benefits can be pursued across all sizes of businesses.

#### **6. Technical Feasibility**

The proposed strategy benefits from the successful experience from several local businesses and other entities that have already set targets and developed climate action plans. The mitigation strategies will likely be a suite of best practices already in use and proven to be

feasible and effective. Staff will work with the business community to ensure that this strategy focuses on activities and provide information that will promote real, quantifiable, and sustainable reductions. We will also focus on the most effective ways to target the information at decision makers. Hurdles may include developing and implementing guidance that is sufficiently specific and documented.

## **7. Additional Considerations**

ARB will work in consultation with several agencies including: 1) California Energy Commission, 2) Business Associations 3) California Climate Action Registry 4) California Chamber of Commerce, 5) Utility providers, as well as many others.

<b>8. Division:</b>	Research Division/Planning and Technical Support Division/Office of Climate Change
<b>Staff Lead:</b>	TBD
<b>Section Manager:</b>	Annmarie Mora
<b>Branch Chief:</b>	Alberto Ayala

## **9. References:**

*California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004, October 2006.*

*U.S. Department of Energy, Energy Efficiency and Renewable Energy, Building Technologies Program, <http://www.eere.energy.gov/buildings/info/office/index.html>, January 27, 2006.*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C06*  
ID NUMBER:         *ARB 2-8*  
TITLE:                *REDUCE SULFUR HEXAFLUORIDE (SF<sub>6</sub>) FROM ELECTRICAL GENERATION*  
PROPONENT:        *AIR RESOURCES BOARD STAFF*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 2<sup>nd</sup> quarter of 2011.

## 3. Early Action Description

This strategy proposes that the ARB develop a measure to reduce sulfur hexafluoride (SF<sub>6</sub>) emissions from the electric power industry, which is the primary user of SF<sub>6</sub>. SF<sub>6</sub> is a synthetic gas used as an insulating medium. The most common use for SF<sub>6</sub> is as an electrical insulator in high-voltage equipment that transmits and distributes electricity. Since the 1950's, the U.S. electric power industry has used SF<sub>6</sub> widely in circuit breakers, gas-insulated substations, and other switchgear used in the transmission system to manage the high voltages carried between generation stations and customer load centers. Fugitive emissions of SF<sub>6</sub> can escape from gas-insulated substations and switchgear through seals. It can also be released during equipment installation and when equipment is opened for servicing. Several factors affect SF<sub>6</sub> emissions from electric power systems, such as the type and age of the equipment (e.g., older circuit breakers can contain up to 2,000 pounds of SF<sub>6</sub>, while modern breakers usually contain less than 100 pounds), and the handling and maintenance procedures practiced by the utilities.

SF<sub>6</sub> is a highly potent greenhouse gas. Over a 100-year period, SF<sub>6</sub> is 23,900 times more effective at trapping infrared radiation than an equivalent amount of carbon dioxide. SF<sub>6</sub> is also a very stable chemical, with an atmospheric lifetime of 3,200 years. Consequently, it will accumulate in the atmosphere.

The U.S. Environmental Protection Agency (U.S. EPA) reports that the most promising and cost-effective options to reduce SF<sub>6</sub> emissions are leak detection and repair, use of recycling equipment, and employee education and training.

## 4. Potential Emission Reductions

U.S. EPA estimates that the SF<sub>6</sub> emissions from electric power systems in the U.S. in 2005 were 4.9 million metric tons of CO<sub>2</sub>-equivalent (MMTCO<sub>2</sub>E). The Cal/EPA Climate Action Team

Report states that hydrofluorocarbons, perfluorocarbons, and SF<sub>6</sub> accounted for about 3.5 percent of gross 2002 greenhouse gas emissions in California (CO<sub>2</sub>-equivalent). USEPA reports that use of recycling equipment can reduce SF<sub>6</sub> emissions by about 10 percent, and leak detection and repair can reduce SF<sub>6</sub> emissions by 20 percent.

Further investigation is required to determine the portion of SF<sub>6</sub> emissions attributed to the California electric power industry and the most appropriate and effective emission reduction equipment and practices. Therefore, ARB staff cannot yet determine the total emission reduction potential of this strategy.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

U.S. EPA reports that cost-effective operational improvements and equipment upgrades can be accomplished at an average cost of \$9.00 per pound. The cost impacts of this strategy specific to the California power sector cannot be determined at this time as further investigation is required. ARB staff assumes that costs will be borne by the power companies and could translate into increased electricity rates for consumers.

## **6. Technical Feasibility**

The most cost-effective SF<sub>6</sub> emission reduction options reported by USEPA focus on maintenance and education, and therefore do not appear to have any associated major technical issues. However, to the extent that repair and replacement activities are used to reduce emissions, scheduling to minimize electrical system disruption could be an issue.

## **7. Additional Considerations**

**8. Division:** Stationary Source Division  
**Staff Lead:** Chris Gallenstein  
**Section Manager:** Mike Waugh  
**Branch Chief:** Mike Tollstrup

## **9. References:**

<sup>1</sup> California Environmental Protection Agency, "Climate Action Team Report to Governor Schwarzenegger and the Legislature," March 2006.

<sup>2</sup> U.S. Environmental Protection Agency, "SF<sub>6</sub> Emission Reduction Partnership for Electric Power Systems," April 17, 2007: <http://www.epa.gov/electricpower-sf6/index.html>

<sup>3</sup> U.S. Environmental Protection Agency, "SF<sub>6</sub> Emission Reduction Partnership for the Magnesium Industry," November 28, 2006: <http://www.epa.gov/highgwp/magnesium-sf6/faq.html>

<sup>4</sup> U.S. Environmental Protection Agency, "U.S. High GWP Gas Emissions 1990-2010: Inventories, Projections, and Opportunities for Reductions," publication #EPA-000-F-97-000, June 2001.

# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #           C07  
ID NUMBER:         ARB 2-10  
TITLE:             ALTERNATIVE SUPPRESSANTS IN FIRE PROTECTION SYSTEMS  
PROPONENT:         STAKEHOLDER SUGGESTION

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 4<sup>th</sup> quarter of 2011.

Staff recommends developing a proposal for the use of lower GWP substances in fire protection systems to the extent that safe, technically feasible, and cost-effective alternatives are available. These systems, called total flooding systems, are typically used to protect large computer data management areas in commercial buildings, clean room manufacturing facilities, telecommunications equipment, museums and archives. If further evaluation supports the use of this measure as a early action, the proposal will be considered by the Board by December 2011.

One possible approach (for illustrative purposes only): By 2012, require that all new total flooding fire suppressant systems use fire suppressants with a GWP below a specified threshold. The analysis may also explore requiring, providing the options are technologically feasible and cost-effective, that existing total flooding fire suppressant systems enhance inspections of or replace systems using substances with a GWP above a specified threshold, which may or may not be different than the above-mentioned threshold.

## 3. Early Action Description

Use lower global warming potential (GWP) gases in new fire protection systems to the extent that safe, technically feasible, and cost-effective alternatives are available.

## 4. Potential Emission Reductions

### Statewide Emission Inventory<sup>1</sup>

2005 GHG Emission Inventory: 0.05 MTCO<sub>2</sub>

2020 Projected GHG Emissions: 0.23 MTCO<sub>2</sub>

Anticipated 2020 Reductions: <0.1 MMT CO<sub>2</sub>E which assumes 43 percent control

<sup>1</sup> All emissions estimates based on USEPA Vintaging Model scaled to California based on population assuming only HFC 227 since HFC 23 is only 1%, Halon emission data are not available at this time. Reduction estimates based on technical feasibility from EPA 2006 for new systems. Including reductions from replacement of systems with Halons or HFCs would increase the reduction potential.

Prior to the 1990s, most total flooding fire suppression systems used Halon 1301, however, it is an ozone depleting substance and, based on the Montreal Protocol on Substances that Deplete the Ozone Layer, its production in the US was completely phased out by the mid-1990s. Due to this fact, new systems have moved to Halon replacements, however, with the exception of the US Department of Defense, there has been no concerted effort to remove existing Halon 1301 systems and recycled Halon 1301 is inexpensive and widely available for recharge needs (Wickham 2002). The lifetime of a system ranges from 10 to 35 years.

There are several Halon alternatives being used in fire suppression systems. The US EPA estimates that HFC 227ea covers approximately 16 percent of the total new flooding fire protection systems with HFC 23 (<1%), inert gas (10%) and not-in-kind alternatives (NIK) such as powdered aerosols, water sprinklers and mist systems making up the remainder of the market (74%) (US EPA, 2006). Although these Halon alternatives are not ozone depleters, HFC 227ea and HFC 23 do have significant global warming potentials (GWP) of 2990 for HFC 227ea and 11700 for HFC 23 (IPCC, 1996). In comparison, Halon 1301 has a GWP of 7030, much higher than the common alternative of HFC 227ea (WMO, 2002).

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

The US EPA estimates that the least cost alternative would be approximately \$40/tonne CO<sub>2</sub>E (US EPA, 2006) in the US for new systems. The estimate reflects the relative cost of alternative formulations, space costs, and costs associated with installing a new, and sometimes weightier, type of system. The costs may need to be updated and revised to reflect the situation in California. For example labor costs and heating and cooling costs differ from the average for the US. This analysis did not consider costs for replacement systems.

Total flooding systems are used by a wide variety of sectors with uses varying from data processing centers to the oil and gas industry to military weapons systems. Any requirements effecting new systems will be fairly evenly distributed among the sectors. Systems with low expected lifetimes (10-15 years) will be impacted most in the short-term as systems need to be replaced sooner. Any requirements to replace existing systems may have a larger impact on sectors with systems that have long expected lifetimes (35 years). These sectors were expecting the system to last up to 35 years but may have to upgrade the system much sooner.

## **6. Technical Feasibility**

There are a number of low GWP alternatives to Halons and HFCs for use in total flooding fire suppression systems, however, they need to be analyzed for effectiveness, space constraints, safety concerns, and other issues. Not every alternative will work in every situation and technical feasibility will be vary based on space needs, human exposure potential for asphyxiates, and other constraints.

## **7. Additional Considerations**

Some factors that need to be considered as part of the evaluation include whether the alternatives are as effective, do the alternatives have increased toxicity, are there any multi-media environmental impacts and whether the strategy would this apply to only new installations or would existing installations need to be retrofitted? Other questions that need to be considered include what happens to the HFCs and Halons from any systems that are phased out, and will other agencies and insurance companies allow their use? Another fundamental

question concerns whether another agency would be more appropriate to adopt the strategy as well as determining if a voluntary measure be just as effective?

**Affected Entities:** Commercial building owners and property management companies, fire suppressant manufacturers (e.g., 3M, Great Lakes Chemical, Brownell, Dupont, Stat-X) and system manufacturers/suppliers (Sea fire, Nautical, Many suppliers – CA based include CalProtection, Chemetron, Diversified Protection, Facilities Protection Inc., Intelligent Technologies and Systems, and RFI Communications & Security).

**Trade Associations:** Building Industry Association, Chemical Manufacturers Association, Building Insurance, Fire Suppression Systems Association, Fire Equipment Manufacturers Association and others.

**Government Agencies to coordinate with:** California Department of Fire Protection, State Fire Marshall's Office, Department of General Services, OEHHA, DHS, Cal-OSHA, and others.

**Proposed Board Hearing Date:** December 2011

<b>8. Division:</b>	Research Division
<b>Staff Lead:</b>	Elizabeth Scheehle
<b>Section Manager:</b>	Mike FitzGibbon
<b>Branch Chief:</b>	TBD
<b>Staff Attorney:</b>	TBD

## 9. References:

*Intergovernmental Panel on Climate Change (IPCC). 1996. Climate Change 1995: The Science of Climate Change. J.T. Houghton, L.G. Miera Filho, B.A. Callander, N. Harris, A. Katternberg, and K. Maskell (eds.). Cambridge, UK: Cambridge University Press.*

*USEPA, 2006. Global Mitigation of Non-CO<sub>2</sub> Greenhouse Gases, EPA Report 430-R-06-005. Available at: <http://www.epa.gov/nonco2/econinv/downloads/GlobalMitigationFullReport.pdf>*

*Wickham, Robert. 2002. Status of Industry Efforts to Replace Halon Fire Extinguishing Agents. Wickham and Associates. March 16. Available at: <http://www.epa.gov/ozone/snap/fire/status.pdf>.*

*World Meteorological Association (WMO). 2002. Scientific Assessment of Ozone Depletion: 2002. Global Ozone Research and Monitoring Project - Report No. 47, 498pp., Geneva, 2003.*



# Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #           C08  
ID NUMBER:         ARB 2-11  
TITLE:             FORESTRY PROTOCOL ENDORSEMENT  
PROPONENT:        STAKEHOLDER SUGGESTION

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in the 4<sup>th</sup> quarter of 2007.

Staff recommends this strategy remain on the list as an early action by Board endorsement of the California Climate Action Registry (CCAR) forestry protocols for immediate use to enhance voluntary greenhouse gas emissions reductions. Staff recommends a two-phase process that allows early action by bringing existing sector, project, and certification protocols, developed by CCAR, to the Board for approval in October 2007 and also allows for longer term consideration and review of additional forestry protocol development as determined in the initial public workshop process. Endorsement of sector and project forest protocols would be non-regulatory, because their use would be voluntary.

## 3. Early Action Description

Forestry is the only sector that *actively removes* greenhouse gases from the atmosphere. The CCAR forestry protocols represent the work of leading experts in the field of forestry and in protocol development, the input of stakeholders and the public over a 4-year public process, and the review by 50 external experts, representing the forest industry, policy and academia. The protocols have been approved by the Board of Forestry (2004) and the CCAR Board (2005). The three protocols together – the sector, project, and certification protocols – are a cohesive and comprehensive set of methodologies for forest carbon accounting, and contain the elements necessary to generate high quality, conservative carbon credits. The first step to effective carbon reduction is accurate carbon accounting.

Unlike other sectors, immediate action in the forest sector does not result in instantaneous greenhouse gas reduction, because forests need time to grow to realize reduction benefits. Therefore, the sooner these voluntary protocols are endorsed, the faster forest projects can be put in place, to establish *future* reductions. The three carbon reduction project types – reforestation, conservation forest management, and avoided development – provide an accounting framework for maximizing carbon sequestration and minimizing carbon loss without compromising the other ecosystem functions forest provide (habitat, structure, nutrient cycling), as well as the suite of other benefits humans depend on from the forests (water storage, soil stability, temperature modification, air and water purification, wood products, recreation). As such, they are ready for use in voluntary measures to reduce carbon emissions in California.

#### **4. Potential Emission Reductions**

Because they are critical to accurate carbon accounting, the forestry protocols are required in several of the forest-related Climate Action Team (CAT) strategy implementation plans. A third of carbon reductions through the forest CAT plan depend on application of these forest protocols which equates to a cumulative sequestration of roughly 10 MMTCO<sub>2</sub>eq between now and 2020. The CAT-strategy reforestation projects in the year 2020 are expected to result in GHG emissions reduction of 2 MMTCO<sub>2</sub>eq (CAT, 2007). While there is already interest in the protocols from the private forest sector, the potential emissions reduction from the voluntary use of the protocols could vary depending on a variety of factors, including management activity, site fertility, and available funding. One unpublished industry study suggests a potential increase of 2½-fold in the pine zone (Steve Brink, California Forestry Association, pers. comm.). Nationally, an additional 100 to 200 Tg C/yr of forest carbon sequestration is achievable, but would require investment in inventory and monitoring, development of technology and practices, and assistance for land managers (Birdsey et al. 2006).

#### **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Currently, the methodologies for carbon stock assessment require intensive sampling programs to meet the required confidence levels for verification. This is labor and time intensive, and therefore costly. There is currently no better technology/methodology to measure carbon if a high degree of certainty is required in carbon stock assessment. Carbon stock certainty should meet the criteria of other carbon emission estimates in the state (20% of the mean estimate). Smaller landowners may find the cost to implement the sampling and subsequent verification too burdensome to participate. The larger industrial landowners (>30,000 acres) should be able to use forest stocking data from sustained-yield management plans which they are required to submit to California Department of Fire and Forest Protection (CalFire). Data for inventorying large land areas may be accessible from CalFire plot data and USFS Forest Inventory and Analysis plot data.

#### **6. Technical Feasibility**

The carbon accounting techniques used in the forest protocols are standard forest measurement techniques.

#### **7. Additional Considerations**

The forestry protocols are designed for small to mid-sized private forest ownerships. There is a need for continued development of forest accounting methodologies to address outstanding issues for: 1) public forest ownerships and for 2) industrial forest private land ownerships. These issues can be addressed within the framework of the existing protocols by defining additional project types beyond the three project types (reforestation, conservation forest management, and avoided deforestation) in the current protocols. For public landowners, issues to resolve include legality of permanent easement transfer, baseline/additionality definition, and carbon offset ownership. By recognizing the need for additional project types in the future, the existing forestry protocols can be moved forward through the public process, endorsed and implementation immediately while the new project types are developed through a longer term public process. This will expedite the availability of the forest protocols for immediate use, while still allowing due consideration to the different needs of the industrial and public forest sector.

**Affected Entities:** Any forest ownership in California could participate in all forest project types, including state and federal public forests, and private forests. Many non-forest entities might participate in reforestation activities, including local governments, utilities, others.

**Trade Associations:** California Forestry Association.

**Government Agencies Coordination:** California Department of Forest and Fire Protection, Board of Forestry, United States Forest Service.

**8. Division:** Planning and Technical Support Division  
**Staff Lead:** Jeanne Panek  
**Section Manager:** Dale Shimp  
**Branch Chief:** Richard Bode

## **9. References:**

*The protocols can be found in their entirety on the California Climate Action Registry website at: <http://www.climateregistry.org/PROTOCOLS/FP/>*

*Birdsey, R., K. Pregitzer, and A. Lucier. 2007. Forest Carbon Management in the United States: 1600–2100. J. Environ. Qual. 35:1461–1469.*

*CAT, Climate Action Team. 2007. Climate Action Team proposed early actions to mitigate climate change in California. Draft for public review. April 2007. [www.climatechange.ca.gov/climate\\_action\\_team/reports/2007-04-20\\_CAT\\_REPORT.PDF](http://www.climatechange.ca.gov/climate_action_team/reports/2007-04-20_CAT_REPORT.PDF)*

# Staff Analysis of Proposed Early Action for Climate Change Mitigation In California

## 1. Early Actions Strategy Name and Proponent

SUMMARY #            *C09*  
ID NUMBER:          *ARB 2-18 / EJAC-2*  
TITLE:                *ENFORCEMENT OF FEDERAL BAN ON HFC RELEASE DURING SERVICE/DISMANTLING OF MVACS*  
PROPONENT:        *2006 CAT REPORT*

## 2. Staff Recommendation

This measure was approved by the Board as an early action at its June 2007 hearing. Based on further evaluation by staff, no change in the classification of this measure is recommended. The Board date for consideration of this item is anticipated in 2<sup>nd</sup> quarter of 2010.

This non-regulatory strategy is expected to be developed in close collaboration with the United States Environmental Protection Agency (US EPA). The strategy is not a stand-alone measure. Rather, it is designed to be implemented in concert with a number of other strategies that staff has identified for mitigating the climate impact of HFCs.

## 3. Early Action Description

The goal of this non-regulatory strategy is improved compliance with a regulation of US EPA (40 CFR 82.154) that prohibits the venting of certain types of refrigerant, including HFCs, to the atmosphere when MVACS equipment is serviced or dismantled. Venting is avoided by recovering refrigerants with specialized equipment. The recovered refrigerant can be re-used by the owner or transferred to re-processors approved by US EPA.

The main focus of the proposed strategy would be the climate impact abatement of HFCs used in the air-conditioning (A/C) systems of vehicles that are to be dismantled. The current degree of compliance with 40 CFR 82.154 is poorly documented but under review. Per this strategy, better compliance by dismantlers would be obtained via a cooperative program that would be created among ARB's Enforcement Division, appropriate offices in the US EPA, and the environmental protection offices of the counties where dismantling activity is taking place. The specific form of the program has not been determined yet, pending quantification of the avoidable emissions of HFCs. However, the anticipated approach would emphasize enhanced enforcement of existing federal requirements for recovery via audits of activities and documentation.

## 4. Potential Emission Reductions

Potential emission reductions from dismantling have been estimated to be in the range of 0.1 to 0.6 MMTCO<sub>2</sub>E in 2010 and 0.1 MMTCO<sub>2</sub>E in 2020. The potential reductions are lower in the year 2020 because it is assumed that half of the cars going to the dismantlers will have new low-GWP refrigerant in the A/C system instead of HFC-134a as called for in other companion

HFC reduction strategies. Preliminary estimates suggest that the refrigerant bank in EOL vehicles could be as high as 0.5 MMTCO<sub>2</sub>E per year. Estimates of annual A/C servicing emissions ranges from 0.3 to 0.6 MMTCO<sub>2</sub>E. The ARB staff has initiated extramural research to estimate the annual amount of HFC that is available for recovery from vehicle at end-of-life and we will continue to work with the USEPA to develop improved estimates of the portion of the available amount that is being recovered and other parameters.

## **5. Estimated Costs / Economic Impacts and the Impacted Sectors / Entities**

Some dismantlers may not have the latest compliant hardware for recovering refrigerants or any equipment at all. Each such dismantler who would be prompted to purchase the equipment would have to spend in the neighborhood of \$3000 to \$4000 per unit. The number of units needed would depend on the size of the operation (vehicle throughput). However, this would be an expense that the dismantler has so far avoided only through failure to comply with the existing federal regulation. Thus, this is not a cost burden associated with the proposed strategy.

The same statements apply to obtaining certification for technicians who use the recovery equipment, but with minimal anticipated costs. Training for the US EPA's certification program is offered by various commercial schools. In addition, the Mobile Air Conditioning Society offers free training (a downloadable pamphlet) and a nominal exam fee, so the necessary expense for operator certification should be minimal.

## **6. Technical Feasibility**

This measure is technically feasible because it is the current federal law, which has been in existence for some time. As such, the equipment exists to recover the refrigerant from automobile A/C systems whether they are being serviced or dismantled. The rigorous enforcement of the federal regulation in California is meant to force vehicle dismantlers to universally use refrigerant-recovery equipment as required by law. The same is true for garages and auto service centers that service MVACS; however, the fraction of such shops that do not have the requisite equipment may be small. It should be noted that recovery procedures and equipment are being revised by industry standard setting bodies to make the process more effective with a higher recovery rates of the refrigerant.

## **7. Additional Considerations**

This strategy involves the enforcement of an existing federal regulation (U.S. EPA- 40 CFR 82.154) that prohibits the venting of refrigerants to the atmosphere when the MVACS is being serviced or dismantled. Some local air districts adopt the federal regulation by reference and others have their own regulation which prohibits the release of refrigerants into the atmosphere. Originally, this item was a strategy in the Climate Action Team Report of March 2006 that ARB intends to pursue as one of suite of measures designed for reducing HFC refrigerant impacts. This strategy involves the creation of a cooperative program among ARB's Enforcement Division, appropriate offices in the U.S. EPA, and local air districts in California. U.S. EPA is currently working on a regulatory impacts assessment that will estimate the emission reductions and costs associated with this type of measure. That work and other on-going activities are expected to yield the necessary additional information for strategy development such as the number of non-compliant dismantlers and shops that perform MVACS servicing in California.

**8. Division:** Research Division  
**Staff Lead:** Winston Potts  
**Section Manager:** Tao Huai  
**Branch Chief:** Alberto Ayala

**9. References:**

<sup>1</sup>Vincent, R., "HFC Reduction Strategy 2-2-5, Enforcement of the Federal Ban on Releasing HFCs During Servicing and Dismantling of MVACS," California Air Resources Board, 2006. As presented in the Climate Action Team Report of March 2006.

<sup>2</sup>Air Resources Board, HFC-134a as an Automotive Refrigerant - Background, Emissions and Effects of Potential Controls, August 6, 2004 ([www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm))

<sup>3</sup> Karen Thundiyil, USEPA, personal communication, 7/26/07.

<sup>4</sup> Improved Mobile Air Conditioning Program (IMAC), "Reducing Refrigerant Emissions at Service and Vehicle End of Life," June 30, 2007

# ***APPENDIX X***

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## ***Tribal-State Gaming Compacts***

**Tribal-State Compact Between the State of California and the  
North Fork Rancheria of Mono Indians of California**

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**TRIBAL-STATE COMPACT**

**BETWEEN**

**THE STATE OF CALIFORNIA**

**AND THE**

**NORTH FORK RANCHERIA OF MONO INDIANS  
OF CALIFORNIA**

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## Appendix A - Minimum Internal Control Standards

**TRIBAL-STATE COMPACT  
BETWEEN THE STATE OF CALIFORNIA AND THE  
NORTH FORK RANCHERIA OF  
MONO INDIANS OF CALIFORNIA**

The North Fork Rancheria of Mono Indians of California ("the Tribe"), a federally recognized Indian tribe listed in the Federal Register as the Northfork Rancheria of Mono Indians of California, and the State of California (hereinafter "the State") enter into this tribal-state compact pursuant to the Indian Gaming Regulatory Act of 1988 (hereinafter "IGRA").

**PREAMBLE**

WHEREAS, the Tribe is a restored Indian tribe with over 1,680 tribal citizens; and

WHEREAS, the lands which constitute the North Fork Rancheria are adjacent to the Sierra National Forest, are a 40-minute drive from the southern entrance of Yosemite National Park, and are located in the Sierra foothills in Madera County; and

WHEREAS, certain lands within the boundaries of the North Fork Rancheria are Indian lands which are eligible for gaming pursuant to IGRA; and

WHEREAS, the Tribe and the State do not believe that a Gaming Facility should be located in such an environmentally sensitive and scenic area, which includes the presence of threatened species and species of concern; and

WHEREAS, as subsequently set forth herein, the Tribe has agreed to utilize its Gaming Operation to facilitate another tribe's decision to forgo gaming on its environmentally sensitive and scenic lands adjacent to the Humboldt Bay National Wildlife Refuge; and

WHEREAS, Section 20(b)(1)(A) of IGRA contains a provision allowing a tribe to operate a Gaming Facility on lands that are acquired in trust for the benefit of a tribe after IGRA's effective date if after consultation with the tribe, the state, and local officials, the Secretary of the Interior determines that a Gaming Facility would be in the best interests of the tribe and its members and not detrimental to the surrounding community, and the governor of the state concurs in that determination; and

WHEREAS, in order to avoid undue impacts of a Gaming Facility on the area surrounding the North Fork Rancheria, the Tribe seeks to have the Secretary of Interior take into trust for the benefit of the Tribe a separate parcel of land located in an unincorporated area of Madera County ("305 Acre Parcel") that it claims can be eligible for gaming either through the Section 20 process referred to above or through the "restored lands" exception delineated in IGRA; and

WHEREAS, many of the Tribe's citizens live in Madera County, to which the Tribe has long-standing aboriginal, historical and cultural ties; and

WHEREAS, the Board of Supervisors of Madera County has expressed support for the Tribe's proposed Gaming Facility to be located on the 305 Acre Parcel; and

WHEREAS, the affected local community has expressed support for the Tribe's proposed Gaming Facility to be located on the 305 Acre Parcel; and

WHEREAS, the Tribe has also agreed to deposit a portion of its revenue from the Gaming Devices operated at said Gaming Facility into a Revenue Sharing Trust Fund created for the benefit of The Wiyot Tribe, formerly known as the Table Bluff Reservation - Wiyot Tribe, California, in order to compensate The Wiyot Tribe for its decision to forgo gaming on its own environmentally sensitive lands; and

WHEREAS, the Tribe and the State share an interest in mitigating the impacts of the operation of a Gaming Facility on the surrounding community outside the 305 Acre Parcel and in subjecting the operation of the Gaming Facility to a complete environmental review; and

WHEREAS, at the Tribe's request, the Bureau of Indian Affairs is preparing an environmental impact statement with respect to the construction and operation of a proposed Gaming Facility on the 305 Acre Parcel pursuant to the National Environmental Policy Act; and

WHEREAS, the Tribe has entered into an enforceable and binding agreement with Madera County to address all impacts of the Tribe's Gaming Facility as a precondition to developing its Gaming Facility; and

WHEREAS, in light of the Tribe's willingness to locate its Gaming Facility on the 305 Acre Parcel instead of an environmentally sensitive area, the Tribe's willingness to make revenue sharing payments to a tribe to facilitate that tribe's sovereign agreement to forgo gaming on environmentally sensitive land, Madera



County's support for the proposed Gaming Facility, and the other covenants of this Compact, the Governor anticipates concurring in a determination by the Secretary of Interior that the Gaming Facility would be in the best interests of the Tribe and its members and not detrimental to the surrounding community, as long as (i) the Board of Supervisors of Madera County has approved of the Gaming Facility's location in the form of a resolution or other appropriate instrument, and (ii) the affected community's support for the Gaming Facility is further demonstrated to the Governor; and

WHEREAS, in consideration of the exclusive rights enjoyed by the Tribe to engage in certain Gaming Activities and to operate the number of Gaming Devices specified herein, and the other meaningful concessions offered by the State in good faith negotiations, the Tribe has agreed, inter alia, to provide to the State, on a sovereign-to-sovereign basis, a fair revenue contribution from the Gaming Devices and banking and percentage card games operated pursuant to this Compact; and

WHEREAS, the Tribe and the State share a joint sovereign interest in ensuring that tribal Gaming Activities are free from criminal and other undesirable elements; and

WHEREAS, this Compact will afford the Tribe primary responsibility over the regulation of its Gaming Facility and will enhance tribal economic development and self-sufficiency; and

WHEREAS, the State and the Tribe have therefore concluded that this Compact protects the interests of the Tribe and its members, the surrounding community, and the California public, and will promote and secure long-term stability, mutual respect, and mutual benefits; and

WHEREAS, the State and the Tribe agree that all terms of this Compact are intended to be binding and enforceable;

NOW, THEREFORE, the Tribe and the State agree as set forth herein:

#### **SECTION 1.0. PURPOSES AND OBJECTIVES.**

The terms of this Compact are designed to:

- (a) Foster a mutually respectful government-to-government relationship that will serve the mutual interests of the parties.

- (b) Develop and implement a means of regulating the Class III Gaming to ensure its fair and honest operation in a way that protects the interests of the Tribe, the State, its citizens, and local communities in accordance with IGRA, and through that regulated Class III Gaming, enable the Tribe to develop self-sufficiency, promote tribal economic development, and generate jobs and revenues to support the Tribe's government and its governmental services and programs.
- (c) Promote ethical practices in conjunction with that Class III Gaming, through the licensing and control of persons and entities employed in, or providing goods and services to, the Tribe's Gaming Operation, protect against the presence or participation of persons whose criminal backgrounds, reputations, character, or associations make them unsuitable for participation in gaming, thereby maintaining a high level of integrity in tribal government gaming, and protect the patrons and employees of the Gaming Operation and the local communities.
- (d) Achieve the objectives set forth in the preamble.

## **SECTION 2.0. DEFINITIONS.**

**Sec. 2.1.** "Applicable Codes" means the California Building Code and the California Public Safety Code applicable to the County of Madera, as set forth in Titles 19 and 24 of the California Code of Regulations, as those regulations may be amended during the term of this Compact, including, but not limited to, codes for building, electrical, energy, mechanical, plumbing, fire and safety.

**Sec. 2.2.** "Applicant" means an individual or entity that applies for a tribal gaming license or for a State Gaming Agency determination of suitability.

**Sec. 2.3.** "Class III Gaming" means the forms of class III gaming defined in 25 U.S.C. § 2703(8) and by the regulations of the National Indian Gaming Commission.

**Sec. 2.4.** "Compact" means this compact.

**Sec. 2.5.** "County" means the County of Madera, California, a political subdivision of the State.

**Sec. 2.6.** "Financial Source" means any person or entity who, directly or indirectly, extends financing to the Gaming Facility or Gaming Operation.

**Sec. 2.7.** “Gaming Activity” or “Gaming Activities” means the Class III Gaming activities authorized under this Compact in section 3.1.

**Sec. 2.8.** “Gaming Device” means any slot machine within the meaning of article IV, section 19, subdivision (f) of the California Constitution. For purposes of calculating the number of Gaming Devices, each player station or terminal on which a game is played constitutes a separate Gaming Device, irrespective of whether it is part of an interconnected system to such terminals or stations. “Gaming Device” includes, but is not limited to, video poker, but does not include electronic, computer, or other technological aids that qualify as class II gaming (as defined under IGRA).

**Sec. 2.9.** “Gaming Employee” means any natural person who (a) conducts, operates, maintains, repairs, accounts for, or assists in any Class III Gaming, or is in any way responsible for supervising such Gaming Activities or persons who conduct, operate, maintain, repair, account for, assist, or supervise any such Gaming Activity, (b) is in a category under federal or tribal gaming law requiring licensing, (c) is an employee of the Tribal Gaming Agency with access to confidential information, or (d) is a person whose employment duties require or authorize access to areas of the Gaming Facility that are not open to the public.

**Sec. 2.10.** “Gaming Facility” or “Facility” means any building in which Gaming Activities or any Gaming Operations occur, or in which the business records, receipts, or other funds of the Gaming Operation are maintained (excluding offsite facilities dedicated to storage of those records and financial institutions), and all rooms, buildings, and areas, including hotels, parking lots, and walkways, a principal purpose of which is to serve the activities of the Gaming Operation.

**Sec. 2.11.** “Gaming Operation” means the business enterprise that offers and operates Gaming Activities, whether exclusively or otherwise.

**Sec. 2.12.** “Gaming Ordinance” means a tribal ordinance or resolution duly authorizing the conduct of Gaming Activities on the Tribe’s Indian lands in California and approved under IGRA.

**Sec. 2.13.** “Gaming Resources” means any goods or services provided or used in connection with Gaming Activities, whether exclusively or otherwise, including, but not limited to, equipment, furniture, Gaming Devices and ancillary equipment, implements of Gaming Activities such as playing cards, furniture

designed primarily for Gaming Activities, maintenance or security equipment and services, and Class III Gaming consulting services. "Gaming Resources" does not include professional accounting and legal services.

**Sec. 2.14.** "Gaming Resource Supplier" means any person or entity who, directly or indirectly, does, or is deemed likely to, manufacture, distribute, supply, vend, lease, purvey, or otherwise provide, to the Tribe's Gaming Operation or Facility at least twenty-five thousand dollars (\$25,000) in Gaming Resources in any twelve (12)-month period, or who, directly or indirectly, receives, or is deemed likely to receive, in connection with the Tribe's Gaming Operation or Facility, at least twenty-five thousand dollars (\$25,000) in any consecutive twelve (12)-month period, provided that the Tribal Gaming Agency may exclude a purveyor of equipment or furniture that is not specifically designed for, and is distributed generally for use other than in connection with, Gaming Activities, if, but for the purveyance, the purveyor is not otherwise a Gaming Resource Supplier, the compensation received by the purveyor is not grossly disproportionate to the value of the goods or services provided, and the purveyor is not otherwise a person who exercises a significant influence over the Gaming Operation.

**Sec. 2.15.** "IGRA" means the Indian Gaming Regulatory Act of 1988 (P.L. 100-497, 18 U.S.C. § 1166 et seq. and 25 U.S.C. § 2701 et seq.), and any amendments thereto, as interpreted by all regulations promulgated thereunder.

**Sec. 2.16.** "Interested Persons" means (i) all local, state, and federal agencies, which, if a Project were not taking place on Indian lands, would have responsibility for approving the Project or would exercise authority over the natural resources that may be affected by the Project, and (ii) persons, groups, or agencies that request in writing a notice of preparation of a draft Tribal Environmental Impact Report ("TEIR") or have commented on the Project in writing to the Tribe or the County of Madera.

**Sec. 2.17.** "Management Contractor" means any Gaming Resource Supplier with whom the Tribe has contracted for the management of any Gaming Activity or Gaming Facility, including, but not limited to, any person who would be regarded as a management contractor under IGRA.

**Sec. 2.18.** "MOU" means the Memorandum of Understanding entered into between the Tribe and the County on August 16, 2004. MOU, as defined herein, does not include any amendment to that agreement; provided that nothing herein is intended to limit the ability of the County and the Tribe to amend the MOU.

**Sec. 2.19.** “Net Win” means the total amount wagered, less all prizes and payouts that are directly related to the amount wagered (as determined by GAAP) and any participation fees. Participation fees shall be defined as payments made to Gaming Resource Suppliers on a periodic basis by the Gaming Operation for the right to lease or otherwise license for play Gaming Devices that the Tribe does not own and are not generally available for outright purchase by gaming operators.

**Sec. 2.20.** “NIGC” means the National Indian Gaming Commission.

**Sec. 2.21.** “Project” is any activity occurring on Indian lands, a principal purpose of which is to serve the Tribe’s Gaming Activities or Gaming Operation, and which may cause either a direct physical change in the off-reservation environment, or a reasonably foreseeable indirect physical change in the off-reservation environment. This definition shall be understood to include, but not be limited to, the construction or planned expansion of any Gaming Facility and any other construction or planned expansion, a principal purpose of which is to serve a Gaming Facility, including, but not limited to, access roads, parking lots, a hotel, utility, or waste disposal systems, or water supply, as long as such construction or expansion causes a direct or indirect physical change in the off-reservation environment. For purposes of this definition, section 11.0, and Exhibit A, “reservation” refers to the Tribe’s Indian lands within the meaning of IGRA or lands otherwise held in trust for the Tribe by the United States.

**Sec. 2.22.** “Significant Effect(s) on the Off-Reservation Environment” is the same as “Significant Effect(s) on the Environment” and occur(s) if any of the following conditions exist:

- (i) A proposed Project has the potential to degrade the quality of the off-reservation environment, curtail the range of the environment, or achieve short-term, to the disadvantage of long-term, environmental goals.
- (ii) The possible effects of a Project on the off-reservation environment are individually limited but cumulatively considerable. As used herein, “cumulatively considerable” means that the incremental effects of an individual Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
- (iii) The off-reservation environmental effects of a Project will cause substantial adverse effects on human beings, either directly or indirectly.

For purposes of this definition, “reservation” refers to the Tribe’s Indian lands within the meaning of IGRA or lands otherwise held in trust for the Tribe by the United States.

**Sec. 2.23.** “State” means the State of California or an authorized official or agency thereof designated by this Compact or by the Governor.

**Sec. 2.24.** “State Gaming Agency” means the entities authorized to investigate, approve, regulate and license gaming pursuant to the Gambling Control Act (Chapter 5 (commencing with section 19800) of Division 8 of the Business and Professions Code), or any successor statutory scheme, and any entity or entities in which that authority may hereafter be vested.

**Sec. 2.25.** “State Designated Agency” means the entity or entities designated or to be designated by the Governor to exercise rights and fulfill responsibilities established by this Compact.

**Sec. 2.26.** “305 Acre Parcel” means that certain parcel of land in Madera County, California, together with all buildings, structures, parking areas, and other improvements thereon, as legally described in, and represented on the map at, Exhibit E hereto, or any lesser portion of said Parcel that is taken into trust for the benefit of the Tribe.

**Sec. 2.27.** “Tribe” means the North Fork Rancheria of Mono Indians of California, a federally recognized Indian tribe listed in the Federal Register as the Northfork Rancheria of Mono Indians of California, or an authorized official or agency thereof.

**Sec. 2.28.** “Tribal Chairperson” means the person duly elected under the Tribe’s Constitution to perform the duties specified therein, including serving as the Tribe’s official representative.

**Sec. 2.29.** “Tribal Gaming Agency” means the person, agency, board, committee, commission, or council designated under tribal law, including, but not limited to, an intertribal gaming regulatory agency approved to fulfill those functions by the NIGC, primarily responsible for carrying out the Tribe’s regulatory responsibilities under IGRA and the Tribal Gaming Ordinance. No person employed in, or in connection with, the management, supervision, or conduct of any Gaming Activity may be a member or employee of the Tribal Gaming Agency.

**Sec. 2.30.** "The Wiyot Tribe" means The Wiyot Tribe (formerly known until October 2, 2004, as the Table Bluff Reservation – Wiyot Tribe, California), a federally recognized Indian tribe.

**SECTION 3.0. SCOPE OF CLASS III GAMING AUTHORIZED.**

**Sec. 3.1. Authorized and Permitted Class III Gaming.**

- (a) The Tribe is hereby authorized to operate only the following Gaming Activities under the terms and conditions set forth in this Compact:
  - (1) Gaming Devices.
  - (2) Any banking or percentage card games.
  - (3) Any devices or games that are authorized under state law to the California State Lottery, provided that the Tribe will not offer such games through use of the Internet unless others in the State are permitted to do so under state and federal law.
- (b) Nothing herein shall be construed to preclude the Tribe from offering class II gaming or preclude the negotiation of a separate compact governing the conduct of off-track wagering at the Tribe's Gaming Facility; however, the Tribe agrees to count the number of any class II devices that it operates against the total number of Gaming Devices permitted under section 4.1.
- (c) Nothing herein shall be construed to authorize the operation of the game known as roulette, whether played with or on a mechanical, electro-mechanical, electrical, or video device, or any combination of such devices, or any game that incorporates the physical use of dice.
- (d) The Tribe shall not engage in Class III Gaming that is not expressly authorized in this section.

**SECTION 4.0. AUTHORIZED LOCATION OF GAMING FACILITY,  
NUMBER OF GAMING DEVICES, AND REVENUE CONTRIBUTION.**

**Sec. 4.1. Authorized Number of Gaming Devices.** Subject to section 3.1, subdivision (b), and section 4.2, subdivision (c), the Tribe is entitled to operate up to 2500 Gaming Devices pursuant to the conditions set forth in section 4.3.3.

**Sec. 4.2. Authorized Gaming Facility.**

(a) In the event the Secretary of Interior makes the determination set forth in Section 20(b)(1)(A) of IGRA that a Gaming Facility on the 305 Acre Parcel would be in the best interest of the Tribe and its members and would not be detrimental to the surrounding community, the Governor anticipates concurring in that determination as long as both of the following have occurred:

- (i) The Board of Supervisors of Madera County has approved the Gaming Facility's location on the 305 Acre Parcel in the form of a resolution or other appropriate instrument, and
- (ii) The affected local community's support for a Gaming Facility on the 305 Acre Parcel has been demonstrated to the satisfaction of the Governor pursuant to a fair and scientific telephone survey, which meets the standards set forth in exhibit B.

(b) If, however, the 305 Acre Parcel is taken into trust as "restored lands" pursuant to Section 20(b)(1)(B)(iii) of IGRA, the Gaming Operation and Gaming Activities on the parcel will nonetheless be governed by the terms of this Compact; provided that nothing in this Compact shall be deemed to prevent or in any way affect the State's right to challenge any administrative or judicial order, decision or judgment resulting in a conclusion that the 305 Acre Parcel is eligible to be taken into trust under Section 20(b)(1)(B)(iii) of IGRA.

(c) The Tribe may only engage in Class III Gaming on eligible Indian lands at a single Gaming Facility on the 305 Acre Parcel and agrees not to engage in any Gaming Activities on its other Indian lands in California.



### **Sec. 4.3.3. Revenue Contribution.**

- (a) Subject to the deductions allowed under subdivision (c), the Tribe shall pay to the State the following percentages of its Net Win generated from the operation of Gaming Devices and banking and percentage card games:

<u>Annual Net Win</u>	<u>Percentage</u>
\$0-\$100 million	13.5%
Over \$100 million to \$200 million	18%
Over \$200 million	22%

- (b) (1) The Tribe shall remit to such agency, trust, fund, or entity, as the State Director of Finance, pursuant to law, from time to time, shall specify to the Tribe in writing, the payments referenced in subdivision (a) in quarterly payments. Said quarterly payments shall be based on the Net Win generated during that quarter from the Gaming Devices and banking and percentage card games, which payments shall be due on the thirtieth day following the end of each calendar quarter (i.e., by April 30 for the first quarter, July 30 for the second quarter, October 30 for the third quarter, and January 30 for the fourth quarter). The specific percentage applied to the quarterly Net Win pursuant to subdivision (a) shall be determined by the cumulative total of the Net Win earned since the beginning of the calendar year. Thus, for instance, if the cumulative Net Win in the third quarter exceeds \$100 million (but is less than \$200 million), the percentage applied to the Net Win earned during that quarter would be 13.5% for the amounts earned in that quarter up to the cumulative \$100 million total and 18% for the amounts in excess of \$100 million.
- (2) If the Gaming Activities authorized by this Compact commence during a calendar quarter, the first payment shall be due on the thirtieth day following the end of the first full quarter of the Gaming Activities and shall cover the period from the commencement of the Gaming Activities to the end of the first full calendar quarter.
- (3) All quarterly payments shall be accompanied by the certification specified in subdivision (d).

- (c) The Tribe may deduct the following from the quarterly payments specified in subdivision (b):
- (1) Payments made during the same calendar quarter by the Tribe pursuant to the MOU with the County up to a total of four million, thirty-five thousand dollars (\$4,035,000) annually, as adjusted by the consumer price index as set forth in the MOU.
  - (2) Payments made during the same calendar quarter by the Tribe (or an earlier calendar quarter if not yet deducted) pursuant to an intergovernmental agreement with the State Department of Transportation, or State Designated Agency, to mitigate off-reservation traffic impacts as specified in section 11.8.7, subdivision (b); provided, however, that each quarterly deduction cannot exceed two and one-half percent (2.5%) of the Tribe's quarterly Net Win from Gaming Devices and banking and percentage card games and provided, further, that the State may waive this quarterly limitation in whole or in part.
- (d) The quarterly payments specified under subdivision (b) shall be accompanied by a certification (the "Quarterly Net Win Payment Report") that specifies the following:
- (1) the Net Win calculation reflecting the quarterly Net Win from (i) the operation of Gaming Devices and (ii) banking and percentage card games;
  - (2) the percentage(s) applied to the quarterly Net Win pursuant to subdivision (a) (which percentage is determined by the cumulative total of the Net Win earned since the beginning of the calendar year);
  - (3) the deductions as specified in subdivision (c);
  - (4) the total amount of the quarterly payment paid to the State, after the deductions specified in subdivision (c); and

- (5) as a separate document, the quarterly Net Win calculation from the operation of Gaming Devices only, the percentage applied to the quarterly Net Win calculation pursuant to section 5.2, subdivision (a) (which percentage is determined by the cumulative total of the Net Win earned since the beginning of the calendar year), and the total amount of the quarterly payment as specified in section 5.2, subdivisions (a) and (c).

The Quarterly Net Win Payment Report shall be prepared by the chief financial officer of the Gaming Operation and shall also be sent to the State Gaming Agency.

- (e) (1) At any time after the fourth quarter, but in no event later than April 30 of the following calendar year, the Tribe shall provide to the State Gaming Agency and the agency, trust, fund, or entity to which quarterly payments are made pursuant to subdivision (b) an audited annual certification of (i) its Net Win calculation from the operation of Gaming Devices and banking and percentage card games, (ii) the deductions specified in subdivision (c), and (iii) its Net Win calculation from the operation of Gaming Devices only. The audit shall be conducted in accordance with generally accepted auditing standards, as applied to audits for the gaming industry, by an independent certified public accountant who is not employed by the Tribe, the Tribal Gaming Agency, the Management Contractor, or the Gaming Operation, is only otherwise retained by any of these entities to conduct regulatory audits or independent audits of the Gaming Operation, and has no financial interest in any of these entities. The auditor used by the Tribe for this purpose shall be approved by the California Gambling Control Commission, or other State Designated Agency, but the State shall not unreasonably withhold its consent.
- (2) If the audit shows that the Tribe made an overpayment from its Net Win to the State during the year covered by the audit, the Tribe's next quarterly payment may be reduced by the amount of the overage. Conversely, if the audit shows that the Tribe made an underpayment to the State during the year covered by the audit, the Tribe's next quarterly payment shall be increased by the amount owing.

- (3) The State Gaming Agency shall be authorized to confer with the auditor at the conclusion of the audit process and to review all of the independent certified public accountant's work papers and documentation relating to the audit. The Tribal Gaming Agency shall be notified of and provided the opportunity to participate in and attend any such conference or document review.
- (f) The State Gaming Agency may audit either or both of the Net Win calculations specified in subdivisions (d)(1) and (d)(5), as well as the deductions specified in subdivision (c). The State Gaming Agency shall have access to all records deemed necessary by the State Gaming Agency to verify the Net Win calculations, including access to the Gaming Device accounting systems and server-based systems and software and to the data contained therein. If the State Gaming Agency determines that the Net Win is understated or the deductions overstated, it will promptly notify the Tribe and provide a copy of the audit. The Tribe within twenty (20) days will either accept the difference or provide a reconciliation satisfactory to the State Gaming Agency. If the Tribe accepts the difference or does not provide a reconciliation satisfactory to the State Gaming Agency, the Tribe must immediately pay the amount of the resulting deficiency, plus accrued interest thereon at the rate of one percent (1.0%) per month or the maximum rate permitted by state law for delinquent payments owed to the State, whichever is less. If the Tribe does not accept the difference but does not provide a reconciliation satisfactory to the State Gaming Agency, the Tribe, once payment is made, may commence dispute resolution under section 13.0. The parties expressly acknowledge that the certifications are subject to section 8.4, subdivision (h).
- (g) Notwithstanding anything to the contrary in section 13, any failure of the Tribe to remit the payments referenced in subdivision (a) pursuant to subdivisions (b), (c), (d), (e) and (f) will entitle the State to immediately seek injunctive relief in federal or state court, at the State's election, to compel the payments, plus accrued interest thereon at the rate of one percent (1.0%) per month, or the maximum rate permitted by State law for delinquent payments owed to the State, whichever is less; and further, the Tribe expressly consents to be sued in either court and waives its right to assert sovereign immunity against the State in

any such proceeding. Failure to make timely payment shall be deemed a material breach of this Compact.

- (h) If the State Director of Finance decides, in his or her discretion, that the Tribe's payments referenced in subdivision (a) should be sold, in whole or in part, to a third party for purposes of securitizing the income stream in the form of bonds that can be issued to investors, the Tribe will use reasonable efforts and cooperate in good faith to aid the issuance of said bonds in accordance with Exhibit C.
- (i) The Tribe agrees that the State may provide to The Wiyot Tribe copies of any Quarterly Net Win Payment Reports or other financial documents submitted by the Tribe or prepared by the State pursuant to an audit of the Tribe's Gaming Operation; provided, however, that the State shall not provide, or shall redact, all information that does not relate to the Net Win from the operation of Gaming Devices or The Wiyot Tribe's payment, and provided, further, that the State will take action to enforce the confidentiality protections contained in Section 8.4 of this Compact.
- (j) Notwithstanding the section number under which this subdivision appears, this section constitutes a "section 4.3.1" within the meaning of article 6.5 (commencing with section 63048.6) of Chapter 2 of Division 1 of Title 6.7 of the California Government Code.

#### **Sec. 4.4. Exclusivity.**

In recognition of the Tribe's agreement to make the payments specified in section 4.3.3 and section 5.0, the Tribe shall have the following rights:

- (a) In the event the bonds referenced in section 4.3.3, subdivision (h), are issued, securitized by the Tribe's payments, during the life of said bonds and in order to protect the Tribe's ability to make the payments underlying said bonds, the State shall not thereafter authorize any person or entity other than a federally recognized Indian tribe to engage in any Gaming Activities specified in subdivisions (a)(1) and (a)(2) of section 3.1 of this Compact within the Tribe's core geographic market.
- (b) For purposes of this section, the Tribe's core geographic market consists of the geographic area that is within a 50-mile radius of the Tribe's Gaming Facility.

- (c) In the event that the bonds referenced in section 4.3.3, subdivision (h), are issued and the State authorizes any person or entity other than a federally recognized Indian tribe to engage in Gaming Activities in violation of the terms of subdivision (a), the Tribe shall have the right to enjoin such gaming or the authorization of said gaming as a substantial impairment of the right specified in subdivision (a), which is necessary to assure the marketability of the bonds referenced in section 4.3.3, subdivision (h), to protect the bondholders of said bonds, and to afford the Tribe stability in its Gaming Operation during the life of the bonds; provided that no remedy other than an injunction is available against the State or any of its political subdivisions for a violation of the terms of subdivision (a), and the parties agree that such substantial impairment of the right specified in subdivision (a) will cause irreparable harm that cannot be adequately remedied by damages.
- (d) Where the bonds referenced in section 4.3.3, subdivision (h), have been issued, securitized by the Tribe's annual payments, in the event that the State authorizes any person or entity other than a federally recognized Indian tribe to engage in Gaming Activities in violation of the terms of subdivision (a) and said person or entity commences within the Tribe's core geographic market said prohibited Gaming Activities, the Tribe shall have the right to cease the payments specified in sections 4.3.3, 5.2, and 5.3, until said person or entity ceases said Gaming Activities or reaches an agreement with the Tribe to share revenues with it in an effort to mitigate the irreparable harm.
- (e) If the bonds referenced in section 4.3.3, subdivision (h), are not issued or following the life of said bonds, the Tribe shall be relieved of its obligation to make the payments specified in sections 4.3.3, 5.2, and 5.3, if and only if the State authorizes any person or entity other than a federally recognized tribe to engage in the Gaming Activities specified in subdivision (a)(1) of section 3.1 of the Compact *and* said person or entity engages within the Tribe's core geographic market in the Gaming Activities specified in subdivision (a)(1) of section 3.1 of the Compact, until such time that such gaming ceases.
- (f) Notwithstanding the Tribe's cessation of payments under sections 4.3.3, 5.2, and 5.3, if the Tribe operates no more than 1500 Gaming Devices throughout any calendar year, it shall compensate the State for the actual and reasonable costs of regulation, as determined by the State

Director of Finance, or failing agreement on that amount, as determined by arbitration pursuant to section 13.2 of the Compact; provided that where the Tribe nonetheless operates more than 1500 Gaming Devices at any time during the calendar year, it shall instead pay twenty percent (20%) of the Net Win attributable to all Gaming Devices above 1500 in quarterly payments to the agency, trust, fund, or entity, as the State Director of Finance, pursuant to law, shall specify to the Tribe in writing in accordance with subdivisions (d), (e), (f), (g) and (j) of section 4.3.3, but in no event shall pay less than the actual and reasonable costs of regulation, as determined above, if that amount is greater. For purposes of this subdivision, the Net Win attributable to all Gaming Devices above 1500 shall be calculated by multiplying the average Net Win per Gaming Device for the quarter by the maximum number of Gaming Devices operated during that quarter in excess of 1500. The average Net Win per Gaming Device is the total Net Win for all Gaming Devices for the quarter divided by the maximum number of Gaming Devices operated during that quarter.

- (g) Nothing in this section is intended to preclude the State Lottery from offering any lottery games or devices that are authorized by the California Constitution as it exists as of July 1, 2004.

## **SECTION 5.0. REVENUE SHARING WITH NON-GAMING TRIBES.**

### **Sec. 5.1. Definitions.**

For purposes of this section 5.0, the following definitions apply:

- (a) "Revenue Sharing Trust Fund" is a fund created by the Legislature and administered by the California Gambling Control Commission, as trustee, with no duties or obligations except as set forth in this Compact, for the receipt, deposit, and distribution of monies paid by gaming tribes for the benefit of Non-Compact Tribes, including Non-Gaming Tribes.
- (b) "Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe" is a fund created by the Legislature and administered by the California Gambling Control Commission, as trustee, with no duties or obligations except as set forth in this Compact and in the State's compact with The Wiyot Tribe, for the receipt, deposit, and distribution of monies paid for the benefit of The Wiyot Tribe pursuant to this section.

- (c) A "Non-Gaming Tribe" is a federally recognized tribe in California, with or without a tribal-state compact, which has not engaged in, or offered, class II, or Class III Gaming as of the date of distribution to the tribe from the Revenue Sharing Trust Fund or during the immediately preceding three hundred sixty-five (365) days.
- (d) A "Non-Compact Tribe" is a federally recognized tribe that has a compact with the State but is operating fewer than 350 Gaming Devices.

**Sec. 5.2. Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe.**

- (a) The Tribe shall remit to the California Gambling Control Commission for deposit in the Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe the following percentages of the Tribe's Net Win from the operation of its Gaming Devices in accordance with the schedule set forth below:

<u>Annual Net Win of Gaming Devices</u>	<u>Percentage of Net Win of Gaming Devices Paid to The Wiyot Tribe</u>
\$0-\$100 million	2.5%
Over \$100 million to \$200 million	3%
Over \$200 million	3.5%

- (b) The California Gambling Control Commission shall serve as trustee of the Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe and shall receive and deposit the monies remitted by the Tribe pursuant to the provisions of this section. The California Gambling Control Commission's sole authority shall be to serve as a depository of the trust funds and to disburse them to The Wiyot Tribe as specified in the tribal-state compact with The Wiyot Tribe. It shall have no discretion with respect to the use or disbursement of this Fund. In no event shall the State's General Fund be obligated to make up any shortfall in the Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe or to pay any unpaid claims connected therewith.



- (c) (1) The Tribe shall remit the payments referenced in subdivision (a) to the California Gambling Control Commission in quarterly payments. Said quarterly payments shall be based on the Net Win generated from the Gaming Devices during that calendar quarter, which payments shall be due on the thirtieth day following the end of each calendar quarter (i.e., by April 30 for the first quarter, July 30 for the second quarter, October 30 for the third quarter, and January 30 for the fourth quarter). The specific percentage applied to the quarterly Net Win pursuant to subdivision (a) shall be determined by the cumulative total of the Net Win earned since the beginning of the calendar year. Thus, for instance, if the cumulative Net Win in the fourth quarter exceeds \$100 million (but is less than \$200 million), the percentage applied to the Net Win earned during that quarter would be 2.5% for the amounts earned in that quarter up to the cumulative \$100 million total and 3% for the amounts in excess of \$100 million.
- (2) If the Gaming Activities authorized by this Compact commence during a calendar quarter, the first payment shall be due on the thirtieth day following the end of the first full quarter of the Gaming Activities and shall cover the period from the commencement of the Gaming Activities to the end of the first full calendar quarter.
- (3) Said quarterly payments shall be accompanied by the certification specified in section 4.3.3, subdivision (d)(5) of this Compact.
- (d) Notwithstanding anything to the contrary in Section 13, any failure of the Tribe to remit the payments referenced in subdivision (a) pursuant to subdivision (c) will entitle the State to immediately seek injunctive relief in federal or state court, at the State's election, to compel the payments, plus accrued interest thereon at the rate of 1.0% per month, or the maximum rate permitted by State law for delinquent payments owed to the State, whichever is less; and further, the Tribe expressly consents to be sued in either court and waives its right to assert sovereign immunity against the State in any such proceeding. Failure to make timely payment shall be deemed a material breach of this Compact.

- (e) In the event that the compact between The Wiyot Tribe and the State, whereby The Wiyot Tribe relinquishes the right to Class III Gaming, is terminated or invalidated, the Tribe shall remit the amounts due under this section 5.2, up to one million dollars (\$1,000,000) annually, to the California Gambling Control Commission for deposit into the Revenue Sharing Trust Fund for distribution on an equal basis to Non-Gaming Tribes only (even if that distribution results in a payment to Non-Gaming Tribes in excess of one million, one hundred thousand dollars (\$1,100,000), and shall remit the balance of the amounts due under this section 5.2 to the State pursuant to the provisions of section 4.3.3, subdivisions (b), (d), and (g).

### **Sec. 5.3. Revenue Sharing Trust Fund**

- (a) Commencing on January 1 of the sixth calendar year of the Tribe's Gaming Activities, the Tribe shall pay on a quarterly basis to the State Gaming Agency for deposit into the Revenue Sharing Trust Fund the following annual fees in accordance with the following schedule:

<u>Year of the Tribe's Gaming Activities</u>	<u>Annual Payment</u>
Year 6	\$200,000
Year 7	\$300,000
Year 8	\$400,000
Year 9	\$500,000
Year 10	\$750,000
Year 11 and each succeeding year to December 31, 2025	\$1,100,000

- (b) Payments pursuant to subdivision (a) shall be accompanied by a written certification that sets forth the payment schedule in subdivision (a) and specifies the date on which the Tribe's Gaming Activities commenced, the calendar year of the present Gaming Activities, and the annual payment that applies to said year (of which the accompanying payment is for one quarter).
- (c) If the Tribe operates its Gaming Activities for at least two quarters during the first calendar year of its Gaming Activities, that year will be considered the first year of the Tribe's Gaming Activities for purposes of this section 5.3. Otherwise, the next calendar year of the Tribe's Gaming Activities will be considered the first year.

- (d) The gradual payment schedule in subdivision (a) is established in recognition of the Tribe's separate payments to the Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe, its prior status as a Non-Gaming Tribe and its needs as a result thereof, and its agreement to relinquish any right to revenue sharing payments for Non-Compact Tribes afforded under other tribal-state compacts once it commences its Gaming Operation.
- (e) The Tribe acknowledges that various compacts with the State provide for payments to the Revenue Sharing Trust Fund for the benefit of Non-Compact Tribes, which include Non-Gaming Tribes. Except as set forth in subdivision (d), nothing in this Compact affects the distribution of those payments. However, the payments made by the Tribe to the Revenue Sharing Trust Fund pursuant to this Compact shall be made only to Non-Gaming Tribes in equal shares with the objective of increasing the annual payment to those tribes.
- (f) The Tribe shall remit the payments referenced in subdivision (a) to the California Gambling Control Commission in quarterly payments, which payments shall be due thirty (30) days following the end of each calendar quarter (i.e., by April 30 for the first quarter, July 30 for the second quarter, October 30 for the third quarter, and January 30 for the fourth quarter).
- (g) The California Gambling Control Commission shall have no discretion with respect to the use or disbursement of the Revenue Sharing Trust Fund. Its sole authority shall be to serve as a depository of the trust funds and to disburse them on a quarterly basis to Non-Gaming and other Non-Compact Tribes as specified in the tribal-state compacts. In no event shall the State's general fund be obligated to make up any shortfall in the Revenue Sharing Trust Fund or to pay any unpaid claims connected therewith, and Non-Compact Tribes and Non-Gaming Tribes are not third party beneficiaries of this Compact.

## **SECTION 6.0. LICENSING.**

### **Sec. 6.1. Gaming Ordinance and Regulations.**

- (a) All Gaming Activities conducted under this Compact shall, at a minimum, comply (i) with a Gaming Ordinance duly adopted by the Tribe and approved in accordance with IGRA, (ii) with all rules,

regulations, procedures, specifications, and standards duly adopted by the NIGC and the Tribal Gaming Agency, and (iii) the provisions of this Compact.

- (b) The Tribal Gaming Agency shall transmit a copy of the Tribal Gaming Ordinance, and all of its rules, regulations, procedures, specifications, or standards applicable to the Gaming Activities, to the California Gambling Control Commission within twenty (20) days following execution of this Compact, or within twenty (20) days following their adoption or amendment.
- (c) The Tribe and the Tribal Gaming Agency shall make available a copy of the following documents to any member of the public upon request: NIGC minimum internal control standards, the Tribal Gaming Ordinance, this Compact, the rules of each class III game operated by the Tribe, the tort ordinance specified in section 12.5, subdivision (b), and the regulations promulgated by the Tribal Gaming Agency concerning patron disputes.

#### **Sec. 6.2. Tribal Ownership, Management, and Control of Gaming Operation.**

The Gaming Operations authorized under this Compact shall be owned solely by the Tribe.

#### **Sec. 6.3. Prohibitions Regarding Minors.**

- (a) The Tribe shall prohibit persons under the age of twenty-one (21) years from being present in any room or area in which Gaming Activities are being conducted unless the person is en route to a non-gaming area of the Gaming Facility.
- (b) If the Tribe permits the consumption of alcoholic beverages in the Gaming Facility, the Tribe shall prohibit persons under the age of twenty-one (21) years from purchasing, consuming, or possessing alcoholic beverages. The Tribe shall also prohibit persons under the age of twenty-one (21) years from being present in any room or area in which alcoholic beverages may be consumed, except to the extent permitted by the State Department of Alcoholic Beverage Control for other commercial establishments serving alcohol.

## **Sec. 6.4. Licensing Requirements and Procedures.**

### **Sec. 6.4.1. Summary of Licensing Principles.**

All persons in any way connected with the Gaming Operation or Facility who are required to be licensed or to submit to a background investigation under IGRA, and any others required to be licensed under this Compact, including, but not limited to, all Gaming Employees, Gaming Resource Suppliers, Financial Sources, and any other person having a significant influence over the Gaming Operation, must be licensed by the Tribal Gaming Agency and cannot have had a determination of suitability denied or revoked by the State Gaming Agency. The parties intend that the licensing process provided for in this Compact shall involve joint cooperation between the Tribal Gaming Agency and the State Gaming Agency, as more particularly described herein.

### **Sec. 6.4.2. Gaming Facility.**

- (a) The Gaming Facility authorized by this Compact shall be licensed by the Tribal Gaming Agency in conformity with the requirements of this Compact, the Tribal Gaming Ordinance, IGRA, and any applicable regulations adopted by the NIGC. The license shall be reviewed and renewed every year thereafter. Verification that this requirement has been met shall be provided by the Tribe to the State by sending a copy of the initial license and each renewal license to the California Gambling Control Commission and any State Designated Agency within twenty (20) days after issuance of the license or renewal. The Tribal Gaming Agency's certification that the Gaming Facility is being operated in conformity with these requirements shall be posted in a conspicuous and public place in the Gaming Facility at all times.
- (b) In order to assure the protection of the health and safety of all Gaming Facility patrons, guests, and employees, the Tribe shall require the Gaming Facility, any expansion, improvement, modification, or maintenance of such Gaming Facility, and any other construction to meet or exceed the Applicable Codes. In order to determine compliance with the Applicable Codes, in all cases where the Applicable Codes would otherwise require a permit, the Tribe shall require inspections and, in connection therewith, shall employ appropriate plan checkers or review firms that either are California licensed architects or engineers with relevant experience or are on the list, if any, of approved plan checkers or review firms provided by the

County of Madera, and shall employ project inspectors that are currently either certified as Class 1 inspectors by the Division of the State Architect or as Class A inspectors by the Office of Statewide Health Planning and Development or their successors. The Tribe agrees to correct any Gaming Facility condition noted in said inspections that does not meet the Applicable Codes (hereinafter "deficiency"). The Tribe shall require all inspectors to maintain contemporaneous records of all inspections and report in writing any failure to comply with the Applicable Codes to the Tribal Gaming Agency and the State Designated Agency. The plan checkers, review firms, and project inspectors shall hereinafter be referred to as "Inspector(s)."

- (c) In all cases where the Applicable Codes would otherwise require plan check, the Tribe shall arrange for the following:
  - (1) The Tribe shall cause the design and construction calculations, and plans and specifications that form the basis for the planned construction (the "Design and Building Plans") to be provided to the State Designated Agency within fifteen (15) days of their final plan check and approval;
  - (2) In the event that material changes to a structural detail of the Design and Building Plans will result from contract change orders or any other changes in the Design and Building Plans, the Tribe shall provide such change orders or other changes to the State Designated Agency within five (5) days of the change's execution or approval, and such changes shall be reviewed by the Inspectors for compliance with the Applicable Codes;
  - (3) The Tribe shall maintain during construction all other contract change orders for inspection and copying by the State Designated Agency upon its request;
  - (4) The Tribe shall maintain the Design and Building Plans for the term of this Compact.
- (d) In all events, the State Designated Agency may designate an agent or agents, who shall be given not fewer than three (3) business days' notice of each inspection required by Section 108 of the California

Building Code, and said State agents may accompany the Inspector on any such inspection. The Tribe agrees to correct any Gaming Facility deficiency noted in said inspection. Upon not fewer than three (3) business days' notice to the Tribal Gaming Agency, except in circumstances posing an immediate threat to the life or safety of any person, in which case no advance notice is required, the State Designated Agency shall also have the right to review all records of the Inspectors and conduct an independent inspection of the Gaming Facility to verify compliance with the Applicable Codes before public occupancy and shall report to the Tribal Gaming Agency any alleged deficiency; provided, however, that concurrent with any exercise by the State of its right to inspect without advance notice based upon alleged circumstances posing an immediate threat to the life or safety of any person, the State Designated Agency shall provide to the Tribal Gaming Agency notice in writing specifying in reasonable detail those alleged circumstances.

- (e) Upon final certification by the Inspector that a Gaming Facility meets the Applicable Codes, the Tribal Gaming Agency shall forward the Inspector's certification to the State Designated Agency within ten (10) days of issuance. If the State Designated Agency objects to that certification, the Tribe shall make a good faith effort to address the State's concerns, but if the State Designated Agency does not withdraw its objection, the matter will be resolved in accordance with the dispute resolution provisions of section 13.0.
- (f) Any failure to remedy within a reasonable period of time any material and timely raised deficiency shall be deemed a violation of the Compact, and furthermore, any deficiency that poses a serious or significant risk to the health or safety of any occupants shall be grounds for the State Designated Agency to prohibit occupancy of the affected portion of the Gaming Facility pursuant to a court order until the deficiency is corrected. The Tribe shall not allow occupancy of any portion of a Gaming Facility that is constructed or maintained in a manner that endangers the health or safety of the occupants.
- (g) Nothing herein shall prohibit the Tribe and the County from negotiating, or having negotiated, additional or more stringent standards in connection with any construction, modifications, or improvements on the 305 Acre Parcel.

- (h) The Tribe shall also take all necessary steps to reasonably ensure the ongoing availability of sufficient and qualified fire suppression services to the Gaming Facility, and to reasonably ensure that the Gaming Facility satisfies all requirements of Title 19 of the California Code of Regulations applicable to similar facilities in the County as set forth below:
- (1) Not less than thirty (30) days before the commencement of the Gaming Activities, and not less than biennially thereafter, and upon at least ten (10) days' notice to the State Designated Agency, the Gaming Facility shall be inspected, at the Tribe's expense, by an independent expert for purposes of certifying that the Gaming Facility meets a reasonable standard of fire safety and life safety.
  - (2) The State Designated Agency shall be entitled to designate and have a qualified representative or representatives present during the inspection. During such inspection, the State's representative(s) shall specify to the independent expert any condition which the representative(s) reasonably believes would preclude certification of the Gaming Facility as meeting a reasonable standard of fire and life safety.
  - (3) The independent expert shall issue to the Tribal Gaming Agency and the State Designated Agency a report on the inspection within fifteen (15) days, identifying any deficiency in fire or life safety at the Gaming Facility or in the ability of the Tribe to meet reasonably expected fire suppression needs of the Gaming Facility.
  - (4) Within fifteen (15) days after the issuance of the report, the independent expert shall also require and approve a specific plan for correcting deficiencies, whether in fire or life safety at the Gaming Facility or in the Tribe's ability to meet the reasonably expected fire suppression needs of the Gaming Facility, including those identified by the State Designated Agency's representatives. A copy of the report shall be served on the State Designated Agency and the Tribal Gaming Agency.



- (5) Immediately upon correction of all deficiencies identified in the report, the independent expert shall certify in writing to the Tribal Gaming Agency and the State Designated Agency that all deficiencies have been corrected.
- (6) Any failure to correct all deficiencies identified in the report within a reasonable period of time shall be deemed a violation of the Compact, and any failure to promptly correct those deficiencies that pose a serious or significant risk to the health or safety of any occupants shall be a violation of the Compact and grounds for the State Gaming Agency or other State Designated Agency to prohibit occupancy of the affected portion of the Gaming Facility pursuant to court order until the deficiency is corrected.

**Sec. 6.4.3. Gaming Employees.**

- (a) Every Gaming Employee shall obtain, and thereafter maintain current, a valid tribal gaming license, and except as provided in subdivision (b), shall obtain, and thereafter maintain current, a State Gaming Agency determination of suitability, which license and determination shall be subject to biennial renewal; provided that in accordance with section 6.4.9, those persons may be employed on a temporary or conditional basis pending completion of the licensing process and the State Gaming Agency determination of suitability.
- (b) A Gaming Employee who is required to obtain and maintain current a valid tribal gaming license under subdivision (a) is not required to obtain or maintain a State Gaming Agency determination of suitability if any of the following applies:
  - (1) The employee is subject to the licensing requirement of subdivision (a) solely because he or she is a person who conducts, operates, maintains, repairs, or assists in Class III Gaming, provided that he or she does not supervise Gaming Activities or persons who conduct, operate, maintain, repair, assist, account for or supervise any such Gaming Activity, *and* is not empowered to make discretionary decisions affecting the conduct of the Gaming Operation.

- (2) The employee is subject to the licensing requirement of subdivision (a) solely because he or she is a person whose employment duties require or authorize access to areas of the Gaming Facility that are not open to the public, provided that he or she does not supervise Gaming Activities or persons who conduct, operate, maintain, repair, assist, account for or supervise any such Gaming Activity, *and* is not empowered to make discretionary decisions affecting the conduct of the Gaming Operation.
  - (3) If the State Gaming Agency, in consultation with the Tribal Gaming Agency, exempts the Gaming Employee from the requirement to obtain or maintain current a State Gaming Agency determination of suitability.
- (c) Notwithstanding subdivision (b), the State Gaming Agency is authorized to review the tribal license application, and all materials and information received by the Tribal Gaming Agency in connection therewith, for any person whom the Tribal Gaming Agency has licensed, or proposes to license, as a Gaming Employee. If the State Gaming Agency determines that the person would be unsuitable for issuance of a license or permit for a similar level of employment in a gambling establishment subject to the jurisdiction of the State, it shall notify the Tribal Gaming Agency of that determination. Upon receipt of such notification, the Tribal Gaming Agency, in accordance with section 6.5.1, subdivision (d), shall deny that person a tribal gaming license and shall promptly revoke any tribal gaming license theretofore issued to that person, provided that the Tribal Gaming Agency may, in its discretion, reissue a tribal gaming license to the person following entry of a final judgment reversing the determination of the State Gaming Agency in a proceeding in State court conducted pursuant to section 1085 of the California Code of Civil Procedure.
- (d) The Tribe shall not employ, or continue to employ, any person whose application to the State Gaming Agency for a determination of suitability or for a renewal of such a determination has been denied, or whose determination of suitability has expired without renewal.
- (e) At any time after five (5) years following the effective date of this Compact, either party to this Compact may request renegotiation of the scope of coverage of subdivision (b).

- (f) This section shall not apply to members of the Tribal Gaming Agency.

**Sec. 6.4.4. Gaming Resource Suppliers.**

- (a) Every Gaming Resource Supplier shall be licensed by the Tribal Gaming Agency prior to the sale, lease, or distribution, or further sale, lease, or distribution, of any Gaming Resources to or in connection with the Tribe's Gaming Operation or Facility. Unless the Tribal Gaming Agency licenses the Gaming Resource Supplier pursuant to subdivision (d), the Gaming Resource Supplier shall also apply to, and the Tribe shall require it to apply to, the State Gaming Agency for a determination of suitability at least thirty (30) days prior to the sale, lease, or distribution, or further sale, lease, or distribution, of any Gaming Resources to or in connection with the Tribe's Gaming Operation or Facility, except that for Gaming Devices the period specified under section 7.1, subdivision (a), shall govern. The period during which a determination of suitability as a Gaming Resource Supplier is valid expires on the earlier of (i) the date two (2) years following the date on which the determination is issued, unless a different expiration date is specified by the State Gaming Agency, or (ii) the date of its revocation by the State Gaming Agency. If the State Gaming Agency denies or revokes a determination of suitability, the Tribal Gaming Agency shall deny or revoke the license. The license and determination of suitability shall be reviewed at least every two (2) years for continuing compliance. For purposes of section 6.5.2, such a review shall be deemed to constitute an application for renewal. In connection with such a review, the Tribal Gaming Agency shall require the Gaming Resource Supplier to update all information provided in the previous application.
- (b) Any agreement between the Tribe and a Gaming Resource Supplier shall include a provision for its termination without further liability on the part of the Tribe, except for the bona fide payment of all outstanding sums (exclusive of interest) owed as of, or payment for services or materials received up to, the date of termination, upon revocation or non-renewal of the Gaming Resource Supplier's license by the Tribal Gaming Agency based on a determination of unsuitability by the State Gaming Agency. Except as set forth above, the Tribe shall not enter into, or continue to make payments to a Gaming Resource Supplier pursuant to, any contract or agreement for

the provision of Gaming Resources with any person or entity whose application to the State Gaming Agency for a determination of suitability has been denied or revoked or whose determination of suitability has expired without renewal.

- (c) Notwithstanding subdivision (a), the Tribal Gaming Agency may license a Management Contractor for a period of no more than seven (7) years, but said Management Contractor must still apply for renewal of a determination of suitability by the State Gaming Agency at least every two (2) years and where the State Gaming Agency denies or revokes a determination of suitability, the Tribal Gaming Agency shall deny or revoke the license. Nothing in this subdivision shall be construed to bar the Tribal Gaming Agency from issuing additional new licenses to the same Management Contractor following the expiration of a seven (7) year license.
- (d) The Tribal Gaming Agency may elect to license a person or entity as a Gaming Resource Supplier without requiring it to apply to the State Gaming Agency for a determination of suitability under subdivision (a) if the Gaming Resource Supplier has already been issued a determination of suitability that is then valid. In that case, the Tribal Gaming Agency shall immediately notify the State Gaming Agency of its licensure of the person or entity as a Gaming Resource Supplier, and shall identify in its notification the State Gaming Agency determination of suitability on which the Tribal Gaming Agency has relied in proceeding under this subdivision (d). Subject to the Tribal Gaming Agency's compliance with the requirements of this subdivision, a Gaming Resource Supplier licensed under this subdivision may, during and only during the period in which the determination of suitability remains valid, engage in the sale, lease, or distribution of Gaming Resources to or in connection with the Tribe's Gaming Operation or Facility, without applying to the State Gaming Agency for a determination of suitability. The issuance of a license under this subdivision is in all cases subject to any later determination by the State Gaming Agency that the Gaming Resource Supplier is not suitable or to a tribal gaming license suspension or revocation pursuant to section 6.5.1, and does not extend the time during which the determination of suitability relied on by the Tribal Gaming Agency is valid. A license issued under this subdivision expires upon the revocation or expiration of the determination of suitability relied on by the Tribal Gaming Agency. Nothing in this subdivision affects

the obligations of the Tribal Gaming Agency, or of the Gaming Resource Supplier, under section 6.5.2 and section 6.5.6 of this Compact.

- (e) Except where subdivision (d) applies, within ten (10) days of the issuance of a license to a Gaming Resource Supplier, the Tribal Gaming Agency shall transmit to the State Gaming Agency a copy of the license and a copy of all tribal license application materials and information received by it from the Applicant.

#### **Sec. 6.4.5. Financial Sources.**

- (a) Every Financial Source shall be licensed by the Tribal Gaming Agency prior to extending any financing in connection with the Tribe's Gaming Operation or Facility. Except as provided in subdivision (e)(4) or section 6.5.6, subdivision (i), every Financial Source shall also apply to, and the Tribe shall require it to apply to, the State Gaming Agency for a determination of suitability pursuant to the following timetable: (i) at least ninety (90) days prior to extending any financing in connection with the Tribe's Gaming Operation or Facility, provided that any Financial Source that applies for such a determination within ten (10) days of the effective date of this Compact is not in violation of this section; and (ii) in the event of a purchase or acceptance of an assignment or participation interest in any financing in connection with the Tribe's Gaming Operation or Facility, at least five (5) days prior to the Financial Source's purchase or acceptance of the assignment or participation interest. Where the State Gaming Agency denies the determination of suitability, the Tribal Gaming Agency shall deny or revoke the license. In each instance where licensure or an application for a determination of suitability is required as set forth above, the license and determination of suitability shall be reviewed at least every two (2) years for continuing compliance. For purposes of section 6.5.2, such a review shall be deemed to constitute an application for renewal. In connection with such a review, the Tribal Gaming Agency shall require the Financial Source to update all information provided in the previous application.

- (b) Any agreement between the Tribe and a Financial Source shall include a provision for its termination without further liability on the part of the Tribe, except for the payment of all bona fide obligations (including accrued interest) which remain unpaid as of the date of termination, upon revocation or non-renewal of the Financial Source's license by the Tribal Gaming Agency based on a determination of unsuitability by the State Gaming Agency. Except as provided above, the Tribe shall not enter into, or continue to make payments to a Financial Source pursuant to, any contract or agreement for the provision of financing with any person whose application to the State Gaming Agency for a determination of suitability has been denied or revoked or whose determination of suitability has expired without renewal.
- (c) A Gaming Resource Supplier who provides financing exclusively in connection with the provision, sale, or lease of Gaming Resources obtained from that Gaming Resource Supplier may be licensed solely in accordance with the licensing procedures applicable, if at all, to Gaming Resource Suppliers, and need not be separately licensed as a Financial Source under this section.
- (d) Within ten (10) days of the issuance of a license to a Financial Source, the Tribal Gaming Agency shall transmit to the State Gaming Agency a copy of the license and a copy of all tribal license application materials and information received by it from the Applicant.
- (e)(1) The Tribal Gaming Agency may, at its discretion, exclude from the licensing requirements of this section the following Financial Sources under the circumstances stated:
  - (A) Any federally-regulated or state-regulated bank, savings and loan association, or other federally- or state-regulated lender and any fund or other investment vehicle which is administered or managed by any such entity.
  - (B) Any entity described in Uniform Tribal Gaming Regulation CGCC-2, subdivision (f) (as in effect on July 1, 2004) of the California Gambling Control Commission, when that entity is a Financial Source solely by reason of being (i) a purchaser or a holder of debt securities or other forms of indebtedness issued

directly or indirectly by the Tribe for a Gaming Facility or for the Gaming Operation or (ii) the owner of a participation interest in any amount of indebtedness for which a Financial Source described in subdivision (e)(1)(A), or any fund or other investment vehicle which is administered or managed by any such Financial Source, is the creditor.

- (C) Any investor who, alone or together with any persons controlling, controlled by or under common control with such investor, holds less than ten percent (10%) of all outstanding debt securities issued directly or indirectly by the Tribe for a Gaming Facility or for the Gaming Operation.
  - (D) Any agency of the federal, state or local government providing financing, together with any person purchasing any debt securities or other forms of indebtedness of the agency to provide such financing.
- (2) Except as provided in subdivision (e)(4), the Tribal Gaming Agency's exclusion of any Financial Source from the licensing requirements of this section does not relieve the Financial Source from the requirement of applying to the State Gaming Agency for a determination of suitability pursuant to subdivision (a).
  - (3) In any case where the Tribal Gaming Agency elects to exclude a Financial Source from the licensing requirements of this section, the Tribal Gaming Agency shall give immediate notice thereof to the State Gaming Agency, shall give reasonable advance notice of any extension of financing by said Financial Source in connection with the Tribe's Gaming Operation or Facility, and upon request of the State Gaming Agency, shall provide it with all documentation supporting the Tribal Gaming Agency's exclusion of the Financial Source from the licensing requirements of this section.
  - (4) (A) Where the Tribal Gaming Agency elects to exclude a Financial Source from the licensing requirements of this section, that Financial Source need not apply to the State Gaming Agency for a determination of suitability if:

- (i) It is a Financial Source specified in subdivision (e)(1)(A), or
  - (ii) It is a Financial Source specified in paragraph (2) or (3) of subdivision (f) of Uniform Tribal Gaming Regulation CGCC-2, which falls within the description of subdivision (e)(1)(B) of section 6.4.5, and the California Gambling Control Commission has by resolution found that the interest of the State does not require an application for a determination of suitability to be made by such Financial Source prior to the extension of financing covered by subdivision (e)(1)(B).
- (B) Notwithstanding subdivision (e)(4)(A), the State Gaming Agency continues to have the right to find the Financial Source unsuitable, and if the State Gaming Agency finds that an investigation of any Financial Source is warranted, the Financial Source shall be required to submit an application for a determination of suitability to the State Gaming Agency and shall pay the costs and charges incurred in the investigation and processing of the application, in accordance with the provisions set forth in Business and Professions Code sections 19867 and 19951.
- (5) In the event that any Financial Source excluded from the licensing requirements of this section is found unsuitable by the State Gaming Agency, the Tribe must not enter into, or continue to make payments (except for payment of all bona fide obligations (including accrued interest) which remain unpaid as of the date of the finding of unsuitability) to said Financial Source pursuant to, any contract or agreement for the provision of financing.
- (6) The following are not Financial Sources for purposes of this section.
  - (A) An entity identified by Uniform Tribal Gaming Regulation CGCC-2, subdivision (h) (as in effect on July 1, 2004) of the California Gambling Control Commission.



- (B) A person or entity whose sole connection with a provision or extension of financing to the Tribe is to provide loan brokerage or debt servicing for a Financial Source at no cost to the Tribe or the Gaming Operation, provided that no portion of any financing provided is an extension of credit to the Tribe or the Gaming Operation by that person or entity.
- (f) In recognition of changing financial circumstances, this section shall be subject to good faith renegotiation by both parties in or after five (5) years from the effective date of this Compact upon the request of either party; provided such renegotiation shall not retroactively affect transactions that have already taken place where the Financial Source has been excluded or exempted from licensing requirements.

#### **Sec. 6.4.6. Processing Tribal Gaming License Applications.**

- (a) Each Applicant for a tribal gaming license shall submit the completed application along with the required information and an application fee, if required, to the Tribal Gaming Agency in accordance with the rules and regulations of that agency.
- (b) At a minimum, the Tribal Gaming Agency shall require submission and consideration of all information required under IGRA, including Part 556.4 of Title 25 of the Code of Federal Regulations, for licensing primary management officials and key employees.
- (c) For Applicants who are business entities, these licensing provisions shall apply to the entity as well as: (i) each of its officers and directors; (ii) each of its principal management employees, including any chief executive officer, chief financial officer, chief operating officer, and general manager; (iii) each of its owners or partners, if an unincorporated business; (iv) each of its shareholders who owns more than ten percent (10%) of the shares of the corporation, if a corporation; and (v) each person or entity (other than a Financial Source that the Tribal Gaming Agency has determined does not require a license under the preceding section) that, alone or in combination with others, has provided financing in connection with any Gaming Operation or gaming authorized under this Compact, if that person or entity provided more than ten percent (10%) of either the start-up capital or the operating capital, or of a combination thereof, over a

twelve (12)-month period. For purposes of this subdivision, where there is any commonality of the characteristics identified in clauses (i) to (v), inclusive, between any two or more entities, those entities may be deemed to be a single entity.

- (d) Nothing herein precludes the Tribe or Tribal Gaming Agency from requiring more stringent licensing requirements.

**Sec. 6.4.7. Suitability Standard Regarding Gaming Licenses.**

- (a) In reviewing an application for a tribal gaming license, and in addition to any standards set forth in the Tribal Gaming Ordinance, the Tribal Gaming Agency shall consider whether issuance of the license is inimical to public health, safety, or welfare, and whether issuance of the license will undermine public trust that the Tribe's Gaming Operations are free from criminal and dishonest elements and would be conducted honestly.
- (b) A license may not be issued unless, based on all information and documents submitted, the Tribal Gaming Agency is satisfied that the Applicant, and in the case of an entity, each individual identified in section 6.4.6, meets all the following requirements:
  - (1) The person is of good character, honesty, and integrity.
  - (2) The person's prior activities, criminal record (if any), reputation, habits, and associations do not pose a threat to the public interest or to the effective regulation and control of gaming, or create or enhance the dangers of unsuitable, unfair, or illegal practices, methods, or activities in the conduct of gaming, or in the carrying on of business and financial arrangements incidental thereto.
  - (3) The person is in all other respects qualified to be licensed as provided, and meets the criteria established in this Compact, IGRA, NIGC regulations, the Tribal Gaming Ordinance, and any other criteria adopted by the Tribal Gaming Agency or the Tribe; provided, however, an Applicant shall not be found to be unsuitable solely on the ground that the Applicant was an employee of a tribal gaming operation in California that was conducted prior to May 16, 2000.

#### **Sec. 6.4.8. Background Investigations of Applicants.**

- (a) The Tribal Gaming Agency shall conduct or cause to be conducted all necessary background investigations reasonably required to determine that the Applicant is qualified for a gaming license under the standards set forth in section 6.4.7, and to fulfill all requirements for licensing under IGRA, NIGC regulations, the Tribal Gaming Ordinance, and this Compact. The Tribal Gaming Agency shall not issue a gaming license, other than a temporary license pursuant to section 6.4.9, until a determination is made that those qualifications have been met.
- (b) In lieu of completing its own background investigation, and to the extent that doing so does not conflict with or violate IGRA or the Tribal Gaming Ordinance, the Tribal Gaming Agency may contract with the State Gaming Agency for the conduct of background investigations, may rely on a State determination of suitability previously issued under a Class III Gaming compact involving another tribe and the State, or may rely on a State Gaming Agency license previously issued to the Applicant, to fulfill some or all of the Tribal Gaming Agency's background investigation obligations.
- (c) An Applicant for a tribal gaming license shall be required to provide releases to the State Gaming Agency to make available to the Tribal Gaming Agency background information regarding the Applicant. The State Gaming Agency shall cooperate in furnishing to the Tribal Gaming Agency that information, unless doing so would violate state or federal law, would violate any agreement the State Gaming Agency has with a source of the information other than the Applicant, or would impair or impede a criminal investigation, or unless the Tribal Gaming Agency cannot provide sufficient safeguards to assure the State Gaming Agency that the information will remain confidential.
- (d) If the Tribe adopts an ordinance confirming that Article 6 (commencing with section 11140) of Chapter 1 of Title 1 of Part 4 of the California Penal Code is applicable to members, investigators, and staff of the Tribal Gaming Agency, and those members, investigators, and staff thereafter comply with that ordinance, then, for purposes of carrying out its obligations under this section, the Tribal Gaming Agency may be considered to be an entity entitled to receive state summary criminal history information within the meaning of

subdivision (b)(12) of section 11105 of the California Penal Code. In that case, the California Department of Justice shall provide services to the Tribal Gaming Agency through the California Law Enforcement Telecommunications System (CLETS), subject to a determination by the CLETS advisory committee that the Tribal Gaming Agency is qualified for receipt of such services, and on such terms and conditions as are deemed reasonable by that advisory committee.

**Sec. 6.4.9. Temporary Licensing of Gaming Employees.**

- (a) If the Applicant has completed a license application in a manner satisfactory to the Tribal Gaming Agency, and that agency has conducted a preliminary background investigation, and the investigation or other information held by that agency does not indicate that the Applicant has a criminal history or other information in his or her background that would either automatically disqualify the Applicant from obtaining a tribal gaming license or cause a reasonable person to investigate further before issuing a license, or that the Applicant is otherwise unsuitable for licensing, the Tribal Gaming Agency may issue a temporary tribal gaming license and may impose such specific conditions thereon pending completion of the Applicant's background investigation, as the Tribal Gaming Agency in its sole discretion shall determine.
- (b) Special fees may be required by the Tribal Gaming Agency to issue or maintain a temporary tribal gaming license.
- (c) A temporary tribal gaming license shall remain in effect until suspended or revoked, or a final determination is made on the application.
- (d) At any time after issuance of a temporary tribal gaming license, the Tribal Gaming Agency shall or may, as the case may be, suspend or revoke it in accordance with the provisions of sections 6.5.1 or 6.5.5, and the State Gaming Agency may request suspension or revocation before making a determination of unsuitability.
- (e) Nothing herein shall be construed to relieve the Tribe of any obligation under Part 558 of Title 25 of the Code of Federal Regulations.

#### **Sec. 6.5.0. Tribal Gaming License Issuance.**

Upon completion of the necessary background investigation, the Tribal Gaming Agency may issue a tribal gaming license on a conditional or unconditional basis. Nothing herein shall create a property or other right of an Applicant in an opportunity to be licensed, or in a tribal gaming license itself, both of which shall be considered to be privileges granted to the Applicant in the sole discretion of the Tribal Gaming Agency.

#### **Sec. 6.5.1. Denial, Suspension, or Revocation of Licenses.**

- (a) Any Applicant's application for a tribal gaming license may be denied, and any license issued may be revoked, if the Tribal Gaming Agency determines that the application is incomplete or deficient, or if the Applicant is determined to be unsuitable or otherwise unqualified for a tribal gaming license.
- (b) Pending consideration of revocation, the Tribal Gaming Agency may suspend a tribal gaming license in accordance with section 6.5.5.
- (c) All rights to notice and hearing shall be governed by tribal law and comport with federal procedural due process. The Applicant shall be notified in writing of the hearing and given notice of any intent to suspend or revoke the tribal gaming license.
- (d) Notwithstanding anything to the contrary herein, upon receipt of notice that the State Gaming Agency has determined that a person would be unsuitable for licensure in a gambling establishment subject to the jurisdiction of the State Gaming Agency, the Tribal Gaming Agency shall deny that person a tribal gaming license and promptly revoke any tribal gaming license that has theretofore been issued to that person; provided that the Tribal Gaming Agency may, in its discretion, reissue a tribal gaming license to the person following entry of a final judgment reversing the determination of the State Gaming Agency in a proceeding in State court conducted pursuant to section 1085 of the California Code of Civil Procedure.

### **Sec. 6.5.2. Renewal of Licenses; Extensions; Further Investigation.**

- (a) Except as provided in section 6.4.4, subdivision (c), the term of a tribal gaming license shall not exceed two (2) years, and application for renewal of a license must be made prior to its expiration. Applicants for renewal of a license shall provide updated material, as requested, on the appropriate renewal forms, but, at the discretion of the Tribal Gaming Agency, may not be required to resubmit historical data previously submitted or which is otherwise available to the Tribal Gaming Agency. At the discretion of the Tribal Gaming Agency, an additional background investigation may be required at any time if the Tribal Gaming Agency determines the need for further information concerning the Applicant's continuing suitability or eligibility for a license.
- (b) Prior to renewing a license, the Tribal Gaming Agency shall deliver to the State Gaming Agency copies of all information and documents received in connection with the application for renewal of the tribal gaming license for purposes of the State Gaming Agency's consideration of renewal of its determination of suitability.
- (c) At the discretion of the State Gaming Agency, an additional background investigation may be required if the State Gaming Agency determines the need for further information concerning the Applicant's continuing suitability for a license.

### **Sec. 6.5.3. Identification Cards.**

- (a) The Tribal Gaming Agency shall require that all persons who are required to be licensed wear, in plain view at chest height at all times while in the Gaming Facility, identification badges issued by the Tribal Gaming Agency.
- (b) Identification badges must display information, including, but not limited to, a photograph and the person's name, which is adequate to enable members of the public and agents of the Tribal Gaming Agency to readily identify the person and determine the validity and date of expiration of his or her license.

- (c) The Tribe shall monthly provide the State Gaming Agency with the name, badge identification number (if any), and job title of all Gaming Employees.

#### **Sec. 6.5.4. Fees for Tribal License.**

The fees for all tribal gaming licenses shall be set by the Tribal Gaming Agency.

#### **Sec. 6.5.5. Suspension of Tribal Gaming License.**

The Tribal Gaming Agency shall summarily suspend the tribal gaming license of any employee if the Tribal Gaming Agency determines that the continued licensing of the person could constitute a threat to the public health or safety or may summarily suspend the license of any employee if the Tribal Gaming Agency determines that the continued licensing of the person may violate the Tribal Gaming Agency's licensing or other standards. Any right to notice or hearing in regard thereto shall be governed by Tribal law and comport with federal procedural due process.

#### **Sec. 6.5.6. State Determination of Suitability Process.**

- (a) The State Gaming Agency and the Tribal Gaming Agency (together with tribal gaming agencies under other gaming compacts) shall cooperate in developing standard licensing forms for tribal Gaming Employee license applications, on a statewide basis, that reduce or eliminate duplicative or excessive paperwork, which forms and procedures shall take into account the Tribe's requirements under IGRA and the expense thereof. To facilitate the State Gaming Agency's ability to obtain any criminal information that may relate to the Applicant, each application form shall be printed showing the State Gaming Agency's approval of its use, but said approval shall not be unreasonably withheld.
- (b) With respect to Gaming Employees, upon receipt of an Applicant's completed license application and a determination to issue either a temporary or permanent license, the Tribal Gaming Agency shall transmit within ten (10) days to the State Gaming Agency for a determination of suitability for licensure under the California Gambling Control Act a notice of intent to license the Applicant, together with all of the following:

- (1) A copy of all tribal license application materials and information received by the Tribal Gaming Agency from the Applicant.
  - (2) A complete set of fingerprint impressions, rolled by a certified fingerprint roller, transmitted electronically.
  - (3) A current photograph.
  - (4) Except to the extent waived by the State Gaming Agency, such releases of information, waivers, and other completed and executed forms as have been obtained by the Tribal Gaming Agency.
- (c) Upon receipt of a written request from a Gaming Resource Supplier or a Financial Source for a determination of suitability, the State Gaming Agency shall transmit an application package to the Applicant to be completed and returned to the State Gaming Agency for purposes of allowing it to make a determination of suitability for licensure.
- (d) Investigation and disposition of applications for a determination of suitability shall be governed entirely by State law, and the State Gaming Agency shall determine whether the Applicant would be found suitable for licensure in a gambling establishment subject to the State Gaming Agency's jurisdiction. Additional information may be required by the State Gaming Agency to assist it in its background investigation, to the extent permitted under State law for licensure in a gambling establishment subject to the State Gaming Agency's jurisdiction.
- (e) The Tribal Gaming Agency shall require a licensee to apply for renewal of a determination of suitability at such time as the licensee applies for renewal of a tribal gaming license.
- (f) Upon receipt of completed license or license renewal application information from the Tribal Gaming Agency, the State Gaming Agency may conduct a background investigation pursuant to state law to determine whether the Applicant is suitable to be licensed for association with Class III Gaming operations. While the Tribal



Gaming Agency shall ordinarily be the primary source of application information, the State Gaming Agency is authorized to directly seek application information from the Applicant. If further investigation is required to supplement the investigation conducted by the Tribal Gaming Agency, the Applicant will be required to pay the application fee charged by the State Gaming Agency pursuant to California Business and Professions Code section 19951, subdivision (a), but any deposit requested by the State Gaming Agency pursuant to section 19867 of that Code shall take into account reports of the background investigation already conducted by the Tribal Gaming Agency and the NIGC, if any. Failure to provide information reasonably required by the State Gaming Agency to complete its investigation under State law or failure to pay the application fee or deposit can constitute grounds for denial of the application by the State Gaming Agency. The State Gaming Agency and Tribal Gaming Agency shall cooperate in sharing as much background information as possible, both to maximize investigative efficiency and thoroughness, and to minimize investigative costs.

- (g) Upon completion of the necessary background investigation or other verification of suitability, the State Gaming Agency shall issue a notice to the Tribal Gaming Agency certifying that the State has determined that the Applicant is suitable, or that the Applicant is unsuitable, for licensure in a Gaming Operation and, if unsuitable, stating the reasons therefor. Issuance of a determination of suitability does not preclude the State Gaming Agency from a subsequent determination based on newly discovered information that a person or entity is unsuitable for the purpose for which the person or entity is licensed. Upon receipt of notice that the State Gaming Agency has determined that a person or entity is or would be unsuitable for licensure, the Tribal Gaming Agency shall deny that person or entity a license and promptly revoke any tribal gaming license that has theretofore been issued to that person or entity; provided that the Tribal Gaming Agency may, in its discretion, reissue a tribal gaming license to the person or entity following entry of a final judgment reversing the determination of the State Gaming Agency in a proceeding in state court conducted pursuant to section 1085 of the California Code of Civil Procedure.

- (h) Prior to denying an application for a determination of suitability, or to issuing notice to the Tribal Gaming Agency that a person or entity previously determined to be suitable had been determined unsuitable for licensure, the State Gaming Agency shall notify the Tribal Gaming Agency and afford the Tribe an opportunity to be heard. If the State Gaming Agency denies an application for a determination of suitability, or issues notice that a person or entity previously determined suitable has been determined unsuitable for licensure, the State Gaming Agency shall provide that person or entity with written notice of all appeal rights available under state law.
- (i) The California Gambling Control Commission (“Commission”), or its successor, shall maintain a roster of Gaming Resource Suppliers and Financial Sources that it has determined to be suitable pursuant to the provisions of this section, or through separate procedures to be adopted by the Commission. Upon application to the Tribal Gaming Agency for a tribal gaming license, a Gaming Resource Supplier or Financial Source that appears on the Commission’s suitability roster may be licensed by the Tribal Gaming Agency in the same manner as a Gaming Resource Supplier under subdivision (d) of Section 6.4.4, subject to any later determination by the State Gaming Agency that the Gaming Resource Supplier or Financial Source is not suitable or to a tribal gaming license suspension or revocation pursuant to section 6.5.1; provided that nothing in this subdivision exempts the Gaming Resource Supplier or Financial Source from applying for a renewal of a State determination of suitability.

## **SECTION 7.0. APPROVAL AND TESTING OF GAMING DEVICES.**

### **Sec. 7.1. Gaming Device Approval.**

No Gaming Device may be offered for play unless all the following occurs:

- (a) The manufacturer or distributor which sells, leases, or distributes such Gaming Device (i) has applied for a determination of suitability by the State Gaming Agency at least fifteen (15) days before it is offered for play, (ii) has not been found to be unsuitable by the State Gaming Agency, and (iii) has been licensed by the Tribal Gaming Agency;

- (b) The software for the game authorized for play on the Gaming Device has been tested, approved and certified by an independent gaming test laboratory or state governmental gaming test laboratory (the "Gaming Test Laboratory") as operating in accordance with the standards of Gaming Laboratories International, Inc. known as GLI-11 and GLI-12, or the technical standards approved by the State of Nevada, or such other technical standards as the State Gaming Agency and the Tribal Gaming Agency shall agree upon, which agreement shall not be unreasonably withheld;
- (c) A copy of the certification by the Gaming Test Laboratory, specified in subdivision (b) above, is provided to the State Gaming Agency by electronic transmission or by mail, unless the State Gaming Agency waives receipt of copies of the certification;
- (d) The software for the game authorized for play on the Gaming Device is tested by the Tribal Gaming Agency to ensure each game authorized for play on the Gaming Device has the correct electronic signature prior to insertion into the Gaming Device; and
- (e) The hardware and associated equipment for the Gaming Device has been tested by the Gaming Test Laboratory to ensure operation in accordance with the manufacturer's specifications.

## **Sec. 7.2. Gaming Test Laboratory Selection.**

The Gaming Test Laboratory shall be an independent or state governmental gaming test laboratory recognized in the gaming industry which (i) is competent and qualified to conduct scientific tests and evaluations of Gaming Devices, and (ii) is licensed or approved by any of the following states: Arizona, California, Colorado, Illinois, Indiana, Iowa, Michigan, Missouri, Nevada, New Jersey, or Wisconsin. The Tribal Gaming Agency shall submit to the State Gaming Agency documentation that demonstrates the Gaming Test Laboratory satisfies (i) and (ii) herein at least thirty (30) days before the commencement of Gaming Activities pursuant to this Compact, or if such use follows the commencement of Gaming Activities, within fifteen (15) days prior to reliance thereon. If, at any time, the Gaming Test Laboratory license and/or approval required by (ii) herein is suspended or revoked by any of those states or the Gaming Test Laboratory is found unsuitable by the State Gaming Agency, then the State Gaming Agency may reject the use of such Gaming Test Laboratory, and upon such rejection, the Tribal

Gaming Agency shall ensure that such Gaming Test Laboratory discontinues its responsibilities under this section.

### **Sec. 7.3. Independent Audits.**

The Tribal Gaming Agency shall ensure that compliance with section 7.1 is audited annually by an independent auditor and shall provide the results of such audits to the State Gaming Agency within five (5) business days of completion. For purposes of this section, an independent auditor shall be a certified public accountant and/or certified internal auditor who is not employed by the Tribe, the Tribal Gaming Agency, the Management Contractor, or the Gaming Operation, has no financial interest in any of these entities, and is only otherwise retained by any of these entities to conduct regulatory audits, independent audits of the Gaming Operation, or audits under this section.

### **Sec. 7.4. State Gaming Agency Inspections.**

- (a) The State Gaming Agency, utilizing such consultants, if any, deemed appropriate, may inspect the Gaming Devices in operation at the Gaming Facility on a random basis not to exceed four (4) times annually to confirm that they operate and play properly pursuant to the manufacturer's technical standards. Said random inspections conducted pursuant to this subdivision shall occur during normal business hours from 7 a.m. to 5 p.m. outside of Fridays, weekends, and holidays and shall not remove from play more than five percent (5%) of the Gaming Devices operating at the Gaming Facility.
- (b) The State Gaming Agency shall provide notice to the Tribal Gaming Agency of such inspection at or prior to the commencement of the random inspection, and the Tribal Gaming Agency may accompany the State Gaming Agency inspector(s).
- (c) The State Gaming Agency, utilizing such consultants, if any, deemed appropriate, may conduct additional inspections at additional times upon reasonable belief of any irregularity and after informing the Tribal Gaming Agency of the basis for such belief.
- (d) The Tribe and the State Gaming Agency shall inform the Gaming Test Laboratory in writing that irrespective of the source of payment of its fees, the Gaming Test Laboratory's duty of loyalty runs equally to the State and the Tribe.

### **Sec. 7.5. Technical Standards.**

The Tribal Gaming Agency shall provide to the State Gaming Agency copies of its regulations for technical standards applicable to the Tribe's Gaming Devices at least thirty (30) days before the commencement of the Gaming Operation and at least thirty (30) days before the effective date of any revisions to the regulations.

### **Sec. 7.6. State Gaming Agency Designation.**

For purposes of sections 7.1 to 7.5, the State Gaming Agency shall be the California Gambling Control Commission, unless the Governor provides otherwise by written notice pursuant to section 16.

### **Sec. 7.7. Transportation of Gaming Devices.**

- (a) Subject to the provisions of subdivision (b), the Tribal Gaming Agency shall not permit any Gaming Device to be transported to or from the Tribe's land except in accordance with procedures established by agreement between the State Gaming Agency and the Tribal Gaming Agency and upon at least ten (10) days' notice to the Sheriff's Department for the County.
- (b) Transportation of a Gaming Device from a Gaming Facility within California is permissible only if:
  - (1) The final destination of the Gaming Device is a gaming facility of any tribe in California that has a compact with the State which makes lawful the receipt of such Gaming Device;
  - (2) The final destination of the Gaming Device is any other state in which possession of the Gaming Devices is made lawful by state law or by tribal-state compact;
  - (3) The final destination of the Gaming Device is another country, or any state or province of another country, wherein possession of the Gaming Device is lawful; or
  - (4) The final destination is a location within California for testing, repair, maintenance, or storage by a person or entity that has

been licensed by the Tribal Gaming Agency and has been found suitable for licensure by the State Gaming Agency.

- (c) Any Gaming Device transported from or to the Tribe's land in violation of this section 7.7, or in violation of any permit issued pursuant thereto, is subject to summary seizure by California peace officers.

## **SECTION. 8.0. INSPECTIONS.**

### **Sec. 8.1. Investigation and Sanctions.**

- (a) The Tribal Gaming Agency shall investigate any reported violation of this Compact and shall require the Gaming Operation to correct the violation upon such terms and conditions as the Tribal Gaming Agency determines are necessary.
- (b) The Tribal Gaming Agency shall be empowered by the Tribal Gaming Ordinance to impose fines or other sanctions within the jurisdiction of the Tribe against gaming licensees who interfere with or violate the Tribe's gaming regulatory requirements and obligations under IGRA, NIGC gaming regulations, the Tribal Gaming Ordinance, or this Compact as long as said fines or sanctions comport with federal due process.
- (c) The Tribal Gaming Agency shall report violations of this Compact and any failures to comply with its orders to the California Gambling Control Commission and the Division of Gambling Control in the California Department of Justice within ten (10) days of discovery.

### **Sec. 8.2. Assistance by State Gaming Agency.**

The Tribe may request the assistance of the State Gaming Agency whenever it reasonably appears that such assistance may be necessary to carry out the purposes described in section 8.1, or otherwise to protect public health, safety, or welfare.

**Sec. 8.3. Access to Premises by State Gaming Agency; Notification; Inspections.**

- (a) Notwithstanding that the Tribe and its Tribal Gaming Agency have the primary responsibility to administer and enforce the regulatory requirements of this Compact, the State Gaming Agency, including but not limited to any consultants retained by it, shall have the right to inspect the Tribe's Gaming Facility, and all Gaming Operation or Facility records relating to Class III Gaming, including such records located in off-site facilities dedicated to their storage subject to the conditions in subdivisions (b), (c), and (d).
- (b) Except as provided in section 7.4, the State Gaming Agency may inspect public areas of the Gaming Facility at any time without prior notice during normal Gaming Facility business hours (8:00 a.m. to 5:00 p.m.).
- (c) Inspection of areas of the Gaming Facility not normally accessible to the public may be made at any time the Gaming Facility is open to the public, immediately after the State Gaming Agency's authorized inspector notifies the Tribal Gaming Agency of his or her presence on the premises, presents proper identification, and requests access to the non-public areas of the Gaming Facility. The Tribal Gaming Agency, in its sole discretion, may require a member of the Tribal Gaming Agency to accompany the State Gaming Agency inspector at all times that the State Gaming Agency inspector is in a non-public area of the Gaming Facility. If the Tribal Gaming Agency imposes such a requirement, it shall require such member to be available at all times for those purposes and shall ensure that the member has the ability to gain immediate access to all non-public areas of the Gaming Facility.
- (d) Nothing in this Compact shall be construed to limit the State Gaming Agency to one inspector during inspections.

**Sec. 8.4. Inspection, Copying and Confidentiality of Documents.**

- (a) Inspection and copying of Gaming Operation papers, books, and records may occur at any time, immediately after the State Gaming Agency gives notice to the Tribal Gaming Agency, during the hours from 8:00 a.m. to 5:00 p.m. Monday through Friday, and at any other time that a Tribal Gaming Agency employee, a Gaming Facility

employee, or a Gaming Operation employee is available onsite with physical access to offices, including off-site facilities, where the papers, books, and records are kept. The Tribe shall cooperate with, and cannot refuse, said inspection and copying, provided that the State Gaming Agency inspectors cannot require copies of papers, books, or records in such volume that it unreasonably interferes with the normal functioning of the Gaming Operation or Facility.

- (b) In lieu of onsite inspection and copying of Gaming Operation papers, books, and records by its inspectors, the State Gaming Agency may request in writing that the Tribal Gaming Agency provide copies of such papers, books, and records as the State Gaming Agency deems necessary to ensure compliance with the terms of this Compact. The State Gaming Agency's written request shall describe those papers, books, and records requested to be copied with sufficient specificity to reasonably identify the requested documents. Within ten (10) days after it receives the request, or such other time as the State Gaming Agency may agree in writing, the Tribal Gaming Agency shall provide one copy of the requested papers, books, and records to the requesting State Gaming Agency. An electronic version of the requested papers, books, and records may be submitted to the State Gaming Agency in lieu of a paper copy so long as the software required to access the electronic version is reasonably available to the State Gaming Agency and the State Gaming Agency does not object.
- (c) Notwithstanding any other provision of California law, any confidential information and records, as defined in subdivision (d), that the State Gaming Agency obtains or copies pursuant to this Compact shall be, and remain, the property solely of the Tribe; provided that such confidential records and copies may be retained by the State Gaming Agency as is reasonably necessary to assure the Tribe's compliance with this Compact or to complete any investigation of suspected criminal activity; and provided further that the State Gaming Agency may provide such confidential records and copies to federal law enforcement and other state agencies or consultants that the State deems reasonably necessary in order to assure the Tribe's compliance with this Compact, in order to renegotiate any provision thereof, or in order to conduct or complete any investigation of suspected criminal activity in connection with the Gaming Activities or the operation of the Gaming Facility or the Gaming Operation. The Tribe agrees that the State may also provide



to The Wiyot Tribe copies of certifications or other financial documents relevant to assessing the Tribe's compliance with section 5.0 of this Compact; provided, however, that the State shall not provide, or shall redact, all financial information which does not relate to the Net Win of Gaming Devices, and provided further that the State provides in its compact with The Wiyot Tribe that The Wiyot Tribe is subject to at least the same standards of confidentiality as the State as set forth in subdivision (e) herein.

- (d) "Confidential information and records" means information and records treated as confidential or protected from disclosure under California state law, including, but not limited to, trade secrets, non-public financial data, player tracking data, internal controls, and internal reports related to security and prevention of theft. The Tribe shall designate as confidential each page of each record it believes to be confidential under California state law, and in all such cases the State shall treat the record as confidential until such time that the designation is removed. If the State objects to such designation with respect to any record or page(s) of a record, the matter will be resolved in accordance with the arbitration procedures under section 13.2. The State need not treat as confidential any page or record not so designated.
- (e) The State Gaming Agency and all other state agencies and consultants to which it provides information and records obtained pursuant to subdivisions (a) or (b) of this section, which are deemed confidential pursuant to subdivision (d), will exercise care in the preservation of the confidentiality of such information and records and will apply the highest standards of confidentiality provided under California state law to preserve such information and records from disclosure until such time as the confidential designation may be removed by the Tribe, by mutual agreement, or pursuant to the arbitration procedures under section 13.2. Before the State Gaming Agency provides confidential information or records to a consultant as authorized under subdivision (c), it shall enter a confidentiality agreement with that consultant that meets the standards of this subdivision.
- (f) The Tribe may avail itself of any and all remedies under State law for the improper disclosure of confidential information or records. In the case of any disclosure of confidential information or records compelled by judicial process, the State Gaming Agency will

endeavor to give the Tribe prompt notice of the order compelling disclosure and a reasonable opportunity to interpose an objection thereto with the court.

- (g) The Tribal Gaming Agency and the State Gaming Agency shall confer regarding protocols for the release to law enforcement agencies of information obtained during the course of background investigations.
- (h) Confidential records received by the State Gaming Agency from the Tribe in compliance with this Compact, or information compiled by the State Gaming Agency from those confidential records, shall be exempt from disclosure under the California Public Records Act.
- (i) Notwithstanding any other provision of this Compact, the State Gaming Agency shall not be denied access to papers, books, records, equipment, or places where such access is reasonably necessary to ensure compliance with this Compact or to conduct or complete an investigation of suspected criminal activity in connection with the Gaming Activities or the operation of the Gaming Facility or the Gaming Operation.

#### **Sec. 8.5. NIGC Audit Reports.**

The Tribe shall provide to the California Gambling Control Commission, within twenty (20) days of their submission to the NIGC, copies of the audited financial statements of class III gaming and management letter(s), if any, provided to the NIGC. All submissions to the California Gambling Control Commission made pursuant to this section 8.5 shall be subject to the confidentiality protections and assurances set forth in section 8.4, subdivision (h) of this Compact.

#### **Sec. 8.6. Cooperation with Tribal Gaming Agency.**

The State Gaming Agency shall meet periodically with the Tribal Gaming Agency and cooperate in all matters relating to the enforcement of the provisions of this Compact and its Appendix.

#### **Sec. 8.7. Compact Compliance Review.**

The State Gaming Agency is authorized to conduct an annual comprehensive Compact compliance review of the Gaming Operation, Gaming Facilities, and Gaming Activities to ensure compliance with all provisions of this

Compact, any exhibits and appendices hereto, including, without limitation, minimum internal control standards set forth in Appendix A, and with all laws, ordinances, codes, rules, regulations, policies, internal controls, standards, and procedures that are required to be adopted, implemented, or complied with pursuant to this Compact. The State Gaming Agency may conduct additional periodic reviews of any part of the Gaming Operation, Gaming Facility, and Gaming Activities and other activities subject to this Compact in order to ensure compliance with all provisions of the Compact and its appendices. Nothing in this section shall be construed to supersede any other audits, inspections, investigations, and monitoring authorized by this Compact.

## **SEC. 9.0. RULES AND REGULATIONS FOR THE OPERATION AND MANAGEMENT OF THE GAMING OPERATION AND FACILITY.**

### **Sec. 9.1. Adoption of Regulations for Operation and Management; Minimum Standards.**

It is the responsibility of the Tribal Gaming Agency to conduct on-site gaming regulation and control in order to enforce the terms of this Compact, of IGRA, of NIGC gaming regulations, and of the Tribal Gaming Ordinance, to protect the integrity of the Gaming Activities and the Gaming Operation for honesty and fairness, and to maintain the confidence of patrons that tribal governmental gaming in California meets the highest standards of fairness and internal controls. To meet those responsibilities, the Tribal Gaming Agency shall be vested with the authority to promulgate, and shall promulgate, rules and regulations governing, at a minimum, the following subjects pursuant to the standards and conditions set forth therein:

- (a) The enforcement of all relevant laws and rules with respect to the Gaming Operation and Facility, and the conduct of investigations and hearings with respect thereto, and to any other subject within its jurisdiction.
- (b) The physical safety of Gaming Facility patrons and employees, and any other person while in the Gaming Facility. Except as provided in section 12.2, nothing herein shall be construed, however, to make applicable to the Tribe any State laws, regulations, or standards governing the use of tobacco.
- (c) The physical safeguarding of assets transported to, within, and from the Gaming Facility.

- (d) The prevention of illegal activity within the Gaming Facility or with regard to the Gaming Operation, including, but not limited to, the maintenance of employee procedures and a surveillance system as provided in subdivision (e).
- (e) Maintenance of a closed-circuit television surveillance system consistent with industry standards for gaming facilities of the type and scale operated by the Tribe, which system shall be approved by, and may not be modified without the approval of, the Tribal Gaming Agency. The Tribal Gaming Agency shall have current copies of the Gaming Facility floor plan and closed-circuit television system at all times.
- (f) The recording of any and all occurrences within the Gaming Facility that deviate from normal operating policies and procedures (hereinafter "incidents"). The regulations shall provide that the Tribal Gaming Agency shall transmit copies of incident reports to the State Gaming Agency forthwith. The procedure for recording incidents pursuant to said regulations shall also do all of the following:
  - (1) Specify that security personnel record all incidents, regardless of an employee's determination that the incident may be immaterial (all incidents shall be identified in writing).
  - (2) Require the assignment of a sequential number to each report.
  - (3) Provide for permanent reporting in indelible ink in a bound notebook from which pages cannot be removed and in which entries are made on each side of each page.
  - (4) Require that each report include, at a minimum, all of the following:
    - (A) The record number.
    - (B) The date.
    - (C) The time.
    - (D) The location of the incident.
    - (E) A detailed description of the incident.
    - (F) The persons involved in the incident.
    - (G) The security department employee assigned to the incident.

- (g) The establishment of employee procedures designed to permit detection of any irregularities, theft, cheating, fraud, or the like, consistent with industry practice.
- (h) Maintenance of a list of persons barred from the Gaming Facility who, because of their past behavior, criminal history, or association with persons or organizations, pose a threat to the integrity of the Gaming Activities of the Tribe or to the integrity of regulated gaming within the State. The Tribal Gaming Agency shall transmit a copy of the list to the State Gaming Agency quarterly and shall make a copy of the current list available to the State Gaming Agency upon request. Notwithstanding anything in this Compact to the contrary, the State Gaming Agency is authorized to make the copies of the list available to other Tribal Gaming Agencies, to licensees of the California Gambling Control Commission, the California Horse Racing Board, and other law enforcement agencies.
- (i) The conduct of an audit, at the Tribe's expense, of the annual financial statements of the Tribe's Gaming Activities.
- (j) Submission to, and prior approval by, the Tribal Gaming Agency of the rules and regulations of each class III game to be operated by the Tribe, and of any changes in those rules and regulations. No class III game may be played that has not received Tribal Gaming Agency approval.
- (k) The obligation of the Gaming Facility and the Gaming Operation to maintain a copy of the rules, regulations, and procedures for each game as played, including, but not limited to, the method of play and the odds and method of determining amounts paid to winners.
- (l) Specifications and standards to ensure that information regarding the method of play, odds, and payoff determinations is visibly displayed or available to patrons in written form in the Gaming Facility and to ensure that betting limits applicable to any gaming station is displayed at that gaming station.
- (m) Maintenance of a cashier's cage in accordance with industry standards for such facilities.

- (n) Specification of minimum staff and supervisory requirements for each Gaming Activity to be conducted.
- (o) Technical standards and specifications in conformity with the requirements of this Compact for the operation of Gaming Devices and other games authorized herein to be conducted by the Tribe.

**Sec. 9.1.1. Minimum Internal Control Standards (MICS).**

- (a) The Tribe shall conduct its Gaming Activities pursuant to an internal control system that implements minimum internal control standards for Class III Gaming that are no less stringent than those contained in the Minimum Internal Control Standards of the NIGC (25 C.F.R. Part 542), as they existed on October 19, 2006, and as they may be amended from time to time, without regard to the NIGC's authority to promulgate, enforce, or audit the standards. This requirement is met through compliance with the provisions set forth in this section and in section 9.1.
- (b) Before commencement of Class III Gaming Operations, the Tribal Gaming Agency shall, in accordance with the Tribal Gaming Ordinance, establish written Tribal internal control standards for the Gaming Facility that shall: (i) provide a level of control that equals or exceeds the minimum internal control standards set forth in Appendix A to this Compact, as it exists currently and as it may be revised; (ii) contain standards for currency transaction reporting that comply with 31 C.F.R. Part 103, as it exists currently and as it may be amended; (iii) satisfy the requirements of section 9.1; (iv) be consistent with this Compact; and (v) require the Gaming Operation to comply with the Tribal internal control standards.
- (c) The Gaming Operation shall operate the Gaming Facility pursuant to a written internal control system. The internal control system shall comply with and implement the internal control standards established by the Tribal Gaming Agency pursuant to subdivision (b) of this section 9.1.1. The internal control system, and any proposed changes to the system, must be approved by the Tribal Gaming Agency prior to implementation. The internal control system shall be designed to reasonably assure that: (i) assets are safeguarded and accountability

over assets is maintained; (ii) liabilities are properly recorded and contingent liabilities are properly disclosed; (iii) financial records including records relating to revenues, expenses, assets, liabilities, and equity/fund balances are accurate and reliable; (iv) transactions are performed in accordance with the Tribe's general or specific authorization; (v) access to assets is permitted only in accordance with the Tribe's specific authorization; (vi) recorded accountability for assets is compared with actual assets at frequent intervals and appropriate action is taken with respect to any discrepancies; and (vii) functions, duties and responsibilities are appropriately segregated and performed in accordance with sound practices by qualified personnel.

- (d) The Tribal Gaming Agency shall provide a copy of its written internal control standards and any changes to those control standards to the State Gaming Agency within thirty (30) days of approval by the Tribal Gaming Agency. The State Gaming Agency will review and submit to the Tribal Gaming Agency written comments or objections, if any, to the internal control standards and any changes to the standards, within thirty (30) days of receiving them, or by another date agreed upon by the Tribal Gaming Agency and the State Gaming Agency. The State Gaming Agency's review shall be for the purpose of determining whether the Tribal internal control standards and any changes to the standards provide a level of control which equals or exceeds the level of control required by the minimum internal control standards set forth in Appendix A, as it exists currently and as it may be revised, and are consistent with this Compact.
- (e) The minimum internal control standards set forth in Appendix A to this Compact shall apply to all Tribal Gaming Activities, Gaming Facilities and Gaming Operations; however, Appendix A is not applicable to any activities not expressly permitted in this Compact. Should the terms in Appendix A be inconsistent with this Compact, the terms in this Compact shall prevail.
- (f) The Tribal Gaming Agency and the State Gaming Agency shall, every three (3) years after the Tribe commences Class III Gaming Operations, and not later than thirty (30) days after the three-year period, promptly commence negotiations to amend Appendix A to this Compact to continue efficient regulation, foster statewide uniformity

of regulation of class III gaming operations, and address future circumstances, including, without limitation, technological advancements and changes in industry standards. The Tribal Gaming Agency or the State Gaming Agency may, at any time, request negotiations to amend Appendix A to this Compact for the purposes described in this subdivision (f). Such revisions to Appendix A shall not be considered to be an amendment to this Compact. Any disputes regarding the contents of future amendments to Appendix A shall be resolved in the manner set forth in section 13.0 of this Compact.

- (g) The Tribe shall cause, at its own expense and not less than annually at the Tribe's fiscal year end, an independent certified public accountant to be engaged to perform "Agreed-Upon Procedures" to verify that the Gaming Operation is in compliance with the Tribal written internal control standards at each Gaming Facility operated by the Tribe. The independent certified public accountant shall perform the Agreed-Upon Procedures in accordance with Part 542.3, subdivision (f), in Appendix A, as it may be revised. The independent certified public accountant shall issue a report of its findings to the Tribal Gaming Agency within one hundred twenty (120) days after the Gaming Operation's fiscal year end. Promptly upon receipt of the Agreed-Upon Procedures report, and in no event later than fifteen (15) days after receipt of the report, the Tribal Gaming Agency shall provide a complete copy of the Agreed-Upon Procedures report to the State Gaming Agency, along with a copy of any supporting reports or documents the independent certified public accountant has prepared, and any replies the Tribe has prepared in response to the independent certified public accountant's report. Failure to comply with this subdivision (g) shall be deemed a material breach of this Compact.
- (h) For purposes of this section 9.1.1, the State Gaming Agency shall be the California Gambling Control Commission, unless the State provides otherwise by written notice pursuant to section 16.0 of the Compact.

#### **Sec. 9.2. Program to Mitigate Problem Gambling.**

The Tribal Gaming Agency shall establish a program to mitigate pathological and problem gambling by implementing the following measures:



- (a) It shall train Gaming Facility supervisors and gaming floor employees on responsible gaming and to identify and manage problem gambling.
- (b) It shall make available to patrons at conspicuous locations and ATM's in the Gaming Facility educational and informational materials which aim at the prevention of problem gambling and which specify where to find assistance.
- (c) It shall establish self-exclusion programs whereby a self-identified problem gambler may request the halt of promotional mailings, the revocation of privileges for casino services, the denial or restraint on the issuance of credit and check cashing services, and exclusion from the Gaming Facility.
- (d) It shall establish an involuntary exclusion program that allows the Gaming Operation to halt promotional mailings, deny or restrain the issuance of credit and cash checking services, and deny access to the Gaming Facility to patrons who have exhibited signs of problem gambling.
- (e) It shall display at conspicuous locations and at ATM's within the Gaming Facility signage bearing a toll-free help-line number where patrons may obtain assistance for gambling problems.
- (f) It shall make diligent efforts to prevent underage individuals from loitering in the area of the Gaming Facility where the Gaming Activities take place.
- (g) It shall assure that advertising and marketing of the Gaming Activities at the Gaming Facility contain a responsible gambling message and a toll-free help-line number for problem gamblers, where practical, and that it make no false or misleading claims.
- (h) It shall adopt a code of conduct, derived, inter alia, from that of the American Gaming Association, that addresses responsible gambling and responsible advertising.

Nothing herein is intended to grant any third party the right to sue based on a perceived violation of these standards.

### **Sec. 9.3. Enforcement of Regulations.**

The Tribal Gaming Agency shall ensure the enforcement of the rules, regulations, and specifications promulgated under this Compact, including under section 9.1.

### **Sec. 9.4. State Civil and Criminal Jurisdiction.**

Nothing in this Compact impairs the civil or criminal jurisdiction of the State under Public Law 280 (18 U.S.C. § 1162; 28 U.S.C. § 1360) or IGRA to the extent applicable. Except as provided below, all State and local law enforcement agencies and State courts shall exercise jurisdiction to enforce the State's criminal laws within the 305 Acre Parcel, including the Gaming Facility and all related structures, in the same manner and to the same extent, and subject to the same restraints and limitations, imposed by the laws of the State and the United States, as is exercised by State and local law enforcement agencies and State courts elsewhere in the State, to the fullest extent permitted by decisions of the United States Supreme Court related to Public Law 280. The Tribe hereby consents to such criminal jurisdiction. However, no Gaming Activity conducted by the Tribe pursuant to this Compact may be deemed to be a criminal violation of any law of the State. Except for such Gaming Activity conducted pursuant to this Compact, criminal jurisdiction to enforce State gambling laws on the Tribe's Indian lands, and to adjudicate alleged violations thereof, is hereby transferred to the State pursuant to 18 U.S.C. § 1166(d).

### **Sec. 9.5. Tribal Gaming Agency Members.**

- (a) The Tribe shall take all reasonable steps to ensure that members of the Tribal Gaming Agency are free from corruption, undue influence, compromise, and conflicting interests in the conduct of their duties under this Compact; shall adopt a conflict-of-interest code to that end and shall ensure its enforcement; and shall ensure the prompt removal of any member of the Tribal Gaming Agency who is found to have acted in a corrupt or compromised manner or to have a conflict of interest.
- (b) The Tribe shall conduct a background investigation on each prospective member of the Tribal Gaming Agency, who shall meet the background requirements of a management contractor under IGRA; provided that if such member is elected through a tribal election process, that member may not participate in any Tribal Gaming

Agency matters under this Compact unless a background investigation has been concluded and the member has been found to be suitable. If requested by the tribal government or the Tribal Gaming Agency, the State Gaming Agency may assist in the conduct of such a background investigation and may assist in the investigation of any possible corruption or compromise of a member of the Tribal Gaming Agency.

- (c) In the event that the State Gaming Agency determines that a member of the Tribal Gaming Agency is unsuitable, the State Gaming Agency shall serve upon the Tribe a written notice of its finding of unsuitability and request the removal of the member. Upon receipt of notice that the State Gaming Agency has determined the member to be unsuitable, the Tribe shall either remove that member from the Tribal Gaming Agency or demand an expedited arbitration pursuant to section 13.2.
- (d) If the Tribe demands an expedited arbitration of the State's determination of unsuitability, the arbitrator shall make a de novo determination as to whether the State Gaming Agency's determination of unsuitability is justified using the following bases for such determination.
  - (1) To be found suitable, the member must be all of the following:
    - (A) A person of good character, honesty, and integrity.
    - (B) A person whose prior activities, criminal record, if any, reputation, habits, and associations do not pose a threat to the public interest of this state, or to the effective regulation and control of controlled gambling, or create or enhance the dangers of unsuitable, unfair, or illegal practices, methods, and activities in the conduct of controlled gambling or in the carrying on of the business and financial arrangements incidental thereto.
    - (C) A person that is in all other respects qualified to be licensed as provided in section 6.4.7 of this Compact.
  - (2) A member is deemed unsuitable if any of the following apply:

- (A) The person, any partner, or any officer, director, or shareholder of any corporation in which the person has a controlling interest, has any financial interest in any business or organization that is engaged in any form of gambling prohibited by section 330 of the California Penal Code, whether within or without the State of California.
- (B) The person fails to clearly establish eligibility and qualification in accordance with section 6.4.7 of this Compact.
- (C) The person fails to provide information, documentation, and assurances required by sections 6.4.7, 6.4.8, subdivision (c), or 6.5.6 of this Compact or requested by the Tribal Gaming Agency, or fails to reveal any fact material to qualification, or supplies information that is untrue or misleading as to a material fact pertaining to the qualification criteria.
- (D) The person has been convicted of a felony, including a conviction by a federal court or by a court in another state for a crime that would constitute a felony if committed in California.
- (E) The person has been convicted of any misdemeanor involving dishonesty or moral turpitude within the ten (10) year period immediately preceding the beginning of his or her service on the Tribal Gaming Agency, unless the applicant has been granted relief pursuant to section 1203.4, 1203.4a, or 1203.45 of the California Penal Code; provided, however, that the granting of relief pursuant to section 1203.4, 1203.4a, or 1203.45 of the California Penal Code shall not constitute a limitation on the discretion of the arbitrator to determine the person's compliance with the requirements of sections 6.4.7 and 9.5, subdivision (d)(1), of this Compact.
- (F) The person has been associated with criminal profiteering activity or organized crime, as defined by section 186.2 of the California Penal Code.

- (G) The person has exhibited contumacious defiance of any legislative investigatory body, or other official investigatory body of any state or of the United States, when that body is engaged in the investigation of crimes relating to gambling, official corruption related to gambling activities, or criminal profiteering activity or organized crime, as defined by section 186.2 of the California Penal Code.
- (H) The person is less than twenty-one (21) years of age.

In all cases, in coming to a decision, the arbitrator must give due consideration for the proper protection of the health, safety and welfare of the residents of the State, and must take into account whether membership on the Tribal Gaming Agency would undermine public trust that the Gaming Operation is free from criminal and dishonest elements and would be conducted honestly.

#### **Sec. 9.6. State Gaming Agency Regulations.**

- (a) Pursuant to the procedures set forth in section 9.7, the State Gaming Agency may adopt regulations governing matters encompassed in sections 6.0, 7.0, and 9.1 under the following circumstances:
  - (1) The State Gaming Agency may adopt regulations that apply to any aspect of the Gaming Operation that is not addressed by a regulation of the Tribal Gaming Agency, as long as the regulations are not inconsistent with the terms of this Compact.
  - (2) The State Gaming Agency may adopt regulations that apply to any subjects covered by sections 6.0, 7.0, and 9.1 when it deems that the regulations adopted by the Tribal Gaming Agency in connection with said subject are ineffective in addressing it, as long as they are not inconsistent with the terms of this Compact.
  - (3) In circumstances that present an imminent threat to public health or safety, the State Gaming Agency may adopt a regulation that becomes effective immediately, regardless of whether the Tribe or Tribal Gaming Agency has enacted a regulation on the subject and regardless of whether the tribal

regulation is deemed ineffective. Any such regulation shall be accompanied by a detailed, written description of the exigent circumstances, and shall be submitted immediately to the Tribal Gaming Agency. A regulation adopted by the State Gaming Agency pursuant to this subdivision shall be subject to the provisions governing arbitration under subdivision (d) of section 9.7.

- (b) Chapter 3.5 (commencing with section 11340) of Part 1 of Division 3 of Title 2 of the California Government Code does not apply to regulations adopted by the State Gaming Agency under this section.

**Sec. 9.7. Limitations on Adoption of State Gaming Regulations.**

- (a) To promote respectful relations between the Tribe and the State, except as provided in section 9.6, subdivision (a)(3), no regulation of the State Gaming Agency adopted under section 9.6, subdivisions (a)(1) and (2), shall be effective with respect to the Tribe's Gaming Operation until all of the following procedures have been exhausted:
  - (1) When the State Gaming Agency suspects, with respect to an aspect of the Gaming Operation that no such regulation exists, or that an existing regulation is ineffective in addressing a subject, it may so notify the Tribal Gaming Agency, set forth the reasons for its position, and request a meeting for the purpose of considering the adoption of a regulation by the Tribal Gaming Agency or the State Gaming Agency. The notification shall propose a date for the meeting, which shall not be less than ten (10) days following the date the notification is made.
  - (2) Representatives of the Tribal Gaming Agency shall meet with the representatives of the State Gaming Agency (for purposes of this section, the "parties") on the date proposed in the notification, or such other date as may be mutually agreed. In the absence of agreement upon a different date, the date proposed in the notification shall control. The parties at the meeting shall confer in good faith over the necessity for the adoption of a regulation and ways in which effective regulation may be achieved. Any proposal of a regulation by the Tribal Gaming Agency, either at or prior to the meeting, shall be

without prejudice to its right to dispute either the necessity of a regulation or the effectiveness of a regulation in existence.

- (3) Within thirty (30) days following the meeting, the Tribal Gaming Agency may propose a regulation for the purpose of addressing the subject as to which the State Gaming Agency provided notification. The Tribal Gaming Agency may adopt the regulation only after inviting comment or objection by the State Gaming Agency, and the Tribal Gaming Agency must provide at least thirty (30) days for the State Gaming Agency to comment or object by providing a copy of the proposed regulation to the State Gaming Agency at least thirty (30) days prior to the date of its intended adoption. Prior to adoption of any regulation under this paragraph, the Tribal Gaming Agency shall respond in writing to each comment and objection of the State Gaming Agency.
  - (4) If the Tribal Gaming Agency adopts a regulation as provided in subdivision (a)(3), the State Gaming Agency may, if dissatisfied with the regulation, make a demand for binding arbitration upon the Tribal Gaming Agency, in which case arbitration shall proceed as provided in subdivision (d).
- (b) If the Tribal Gaming Agency does not propose a regulation within thirty (30) days following the meeting specified in subdivision (a)(2) and adopt a regulation as provided in subdivision (a)(3) within seventy (70) days of the meeting specified in subdivision (a)(2), the State Gaming Agency may adopt a regulation for the purpose of addressing the subject as to which it provided the Tribal Gaming Agency notification pursuant to subdivision (a)(1). Except as provided in section 9.6, subdivision (a)(3), the State Gaming Agency shall adopt no regulation under this subdivision without first providing the proposed regulation to, and inviting comment or objection by, the Tribal Gaming Agency at least thirty (30) days prior to the date of the intended adoption of the regulation. The Tribal Gaming Agency shall provide its comments or objections, if any, to the State Gaming Agency at least ten (10) days prior to the date of the intended adoption of the regulation. Prior to adoption of any regulation under this subdivision, the State Gaming Agency shall respond in writing to each comment and objection of the Tribal Gaming Agency.

- (c) If the State Gaming Agency adopts a regulation as provided in subdivision (b), the Tribal Gaming Agency may, if dissatisfied with the regulation, make a demand upon the State Gaming Agency for binding arbitration, in which case the arbitration shall proceed as provided in subdivision (d).
- (d) Neither a demand for arbitration nor the pendency of arbitration shall impair the effect of a regulation adopted by the Tribal Gaming Agency under subdivision (a)(3) or by the State Gaming Agency under subdivision (b) of this section or subdivision (a)(3) of section 9.6. Arbitration, when demanded, shall proceed before a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Each party shall exchange with the other within fifteen (15) days of the demand for arbitration a single proposal in the form of a regulation that the party proposes to adopt. If either party has adopted a regulation pursuant to subdivisions (a) or (b) of this section or subdivision (a)(3) of section 9.6, that regulation shall constitute the proposal of that party. The arbitrator shall be limited to determining whether the Compact authorizes a regulation to be adopted with respect to the aspect of the Gaming Operation at issue, and if so, which of the proposals before the arbitrator most effectively addresses the subject in light of the purposes and objectives of sections 6.0, 7.0, and 9.1 of this Compact. Unless the arbitrator determines that no regulation is required by the Compact, the arbitrator shall issue an order, effective upon issuance, which shall identify which of the two (2) proposals is to be given effect as a regulation. If requested by a party at the hearing, a reasoned statement of the arbitrator's decision shall be included in the order. Review of the arbitrator's order is waived. In order to effectuate this provision, and in the exercise of its sovereignty, the Tribe agrees to waive, and does hereby waive, its right to assert sovereign immunity in connection with the arbitrator's jurisdiction and in any action to (i) enforce the other party's obligation to arbitrate, or (ii) enforce or confirm any arbitral order rendered in the arbitration.
- (e) The proposal identified by the arbitrator's order as the proposal to be given effect shall be effective as follows: If the proposal so identified is in effect on the date the arbitrator's order is issued, it need not be readopted and shall be effective from the date of adoption. If the



proposal so identified is not in effect on the date the arbitrator's order is issued, it shall be adopted as a regulation by the party that proposed it not earlier than thirty (30) days after the date of the arbitrator's order. Any proposal adopted as a regulation pursuant to sections 9.6 and 9.7 prior to the arbitrator's order, which is not adopted by the arbitrator pursuant to subdivision (d), shall cease to be effective upon adoption of the proposal identified by the arbitrator's order.

- (f) Nothing in this section 9.7 shall be deemed to preclude either the State or the Tribe from seeking, under section 13.1, a resolution of the question whether a regulation adopted under section 9.0 conflicts with a final published regulation of the NIGC.

#### **SECTION 10.0. PATRON DISPUTES.**

The Tribal Gaming Agency shall promulgate regulations governing patron disputes over the play or operation of any game, including any refusal to pay to a patron any alleged winnings from any Gaming Activities, which regulations must meet the following minimum standards:

- (a) A patron who makes a complaint to personnel of the Gaming Operation over the play or operation of any game within seven (7) days of said play or operation shall be notified in writing of his or her right to request, within fifteen (15) days of said written notification, resolution of the dispute by the Tribal Gaming Agency, and if dissatisfied with the resolution, to seek binding arbitration of the dispute before a retired judge pursuant to the terms and provisions in subdivision (c). If the patron is not provided with the aforesaid notification within thirty (30) days of the patron's complaint, the deadlines herein shall be removed, leaving only the relevant statutes of limitations under California law that would otherwise apply.
- (b) Upon request by the patron for a resolution of his or her complaint, the Tribal Gaming Agency shall conduct an appropriate investigation, shall provide to the patron a copy of its regulations concerning patron complaints, and shall render a decision in accordance with industry practice extant in Nevada and New Jersey. The decision shall be issued within sixty (60) days of the patron's request, shall be in writing, shall be based on the facts surrounding the dispute, and shall set forth the reasons for the decision.

(c) If the patron is dissatisfied with the decision of the Tribal Gaming Agency, or no decision is issued within the sixty (60)-day period, the patron may request that the dispute be settled by binding arbitration before a single arbitrator, who shall be a retired judge, in accordance with the streamlined arbitration rules and procedures of JAMS (or if those rules no longer exist, the closest equivalent). Upon such request, the Tribe shall consent to such arbitration, and agree to abide by the decision of the arbitrator; provided, however, that if any alleged winnings are found to be a result of a mechanical, electronic or electromechanical failure and not due to the intentional acts or gross negligence of the Tribe or its agents, the arbitrator shall deny the patron's claim for the winnings but shall award reimbursement of the amounts wagered by the patron which were lost as a result of any said failure. To effectuate its consent to said arbitration, the Tribe shall, in the exercise of its sovereignty, waive its right to assert sovereign immunity in connection with the arbitrator's jurisdiction and in any action to (i) enforce the Tribe's or the patron's (for purposes of this section, the "parties") obligation to arbitrate, (ii) confirm, correct, modify, or vacate the arbitral award rendered in the arbitration, or (iii) enforce or execute a judgment based upon said award. The cost and expenses of such arbitration shall be initially borne by the Tribe, but the arbitrator shall award to the prevailing party its costs and expenses (but not attorney fees). Any party dissatisfied with the award of the arbitrator may at that party's election invoke the JAMS Optional Arbitration Appeal Procedure (and if those rules no longer exist, the closest equivalent); provided that the party making such election must bear all the costs and expenses of JAMS and the arbitrators associated with the Appeal Procedure, regardless of the outcome.

## **SECTION 11.0. OFF-RESERVATION ENVIRONMENTAL AND ECONOMIC IMPACTS.**

### **Section 11.8.1.<sup>1</sup> Tribal Environmental Impact Report.**

- (a) Before the commencement of any Project as defined in section 2.21 herein, the Tribe shall cause to be prepared a tribal environmental impact report, which is hereinafter referred to as a TEIR, analyzing the potentially significant off-reservation environmental impacts of the Project pursuant to the process set forth in this section 11.0; provided, however, that information or data which is relevant to such a TEIR and is a matter of public record or is generally available to the public need not be repeated in its entirety in said TEIR, but may be specifically cited as the source for conclusions stated therein; and provided further that such information or data shall be briefly described, that its relationship to the TEIR shall be indicated, and that the source thereof shall be reasonably available for inspection at a public place or public building. The TEIR shall provide detailed information about the Significant Effect(s) on the Off-Reservation Environment which the Project is likely to have, including each of the matters set forth in Exhibit A, shall list ways in which the Significant Effects on the Environment might be minimized, and shall include a detailed statement setting forth all of the following:
  - (1) All Significant Effects on the Environment of the proposed Project;
  - (2) In a separate section:
    - (A) Any Significant Effect on the Environment that cannot be avoided if the Project is implemented;
    - (B) Any Significant Effect on the Environment that would be irreversible if the Project is implemented;

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<sup>1</sup> Sections 11.1 through 11.7 have been deliberately omitted.

- (3) Mitigation measures proposed to minimize Significant Effects on the Environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy;
  - (4) Alternatives to the Project; provided that the Tribe need not address alternatives that would cause it to forgo its right to engage in the Gaming Activities authorized by this Compact on its Indian lands;
  - (5) Whether any proposed mitigation would be feasible;
  - (6) Any direct growth-inducing impacts of the Project; and
  - (7) Whether the proposed mitigation would be effective to substantially reduce the potential Significant Effects on the Environment.
- (b) In addition to the information required pursuant to subdivision (a), the TEIR shall also contain a statement briefly indicating the reasons for determining that various effects of the Project on the off-reservation environment are not significant and consequently have not been discussed in detail in the TEIR. In the TEIR, the direct and indirect Significant Effects on the Off-Reservation Environment, including each of the items on Exhibit A, shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion of mitigation measures shall describe feasible measures which could minimize significant adverse effects, and shall distinguish between the measures that are proposed by the Tribe and other measures proposed by others. Where several measures are available to mitigate an effect, each should be discussed and the basis for selecting a particular measure should be identified. Formulation of mitigation measures should not be deferred until some future time. The TEIR shall also describe a range of reasonable alternatives to the Project or to the location of the Project, which would feasibly attain most of the basic objectives of the Project and which would avoid or substantially lessen any of the Significant Effects on the Environment, and evaluate the comparative merits of the alternatives; provided that the Tribe need not address alternatives that would cause it to forgo its right to engage in the Gaming Activities authorized by this Compact on its Indian lands. The TEIR

must include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison. The TEIR shall also contain an index or table of contents and a summary, which shall identify each Significant Effect on the Environment with proposed measures and alternatives that would reduce or avoid that effect, and issues to be resolved, including the choice among alternatives and whether and how to mitigate the Significant Effects on the Environment. Previously approved land use documents, including, but not limited to, general plans, specific plans, and local coastal plans, may be used in cumulative impact analysis. The Tribe shall consider any recommendations from the County concerning the person or entity to prepare the TEIR.

#### **Section 11.8.2. Notice of Preparation of Draft TEIR.**

- (a) Upon commencing the preparation of the draft TEIR, the Tribe shall issue a Notice of Preparation to the State Clearinghouse in the State Office of Planning and Research (“State Clearinghouse”) and to the County for distribution to the public. The Notice shall provide all Interested Persons, as defined in section 2.16, with information describing the Project and its potential Significant Effects on the Environment sufficient to enable Interested Persons to make a meaningful response or comment. At a minimum, the Notice shall include all of the following information:
  - (1) A description of the Project;
  - (2) The location of the Project shown on a detailed map, preferably topographical, and on a regional map; and
  - (3) The probable off-reservation environmental effects of the Project.
- (b) The Notice shall also inform Interested Persons of the preparation of the draft TEIR and shall inform them of the opportunity to provide comments to the Tribe within thirty (30) days of the date of the receipt of the Notice by the State Clearinghouse and the County. The Notice shall also request Interested Persons to identify in their comments the off-reservation environmental issues and reasonable mitigation measures that the Tribe will need to have explored in the draft TEIR.

### **Section 11.8.3. Notice of Completion of the Draft TEIR.**

- (a) Within no less than thirty (30) days following the receipt of the Notice of Preparation by the State Clearinghouse and the County, the Tribe shall file a copy of the draft TEIR and a Notice of Completion with the State Clearinghouse, the State Gaming Agency, the County, and the California Department of Justice. The Notice of Completion shall include all of the following information:
  - (1) A brief description of the Project;
  - (2) The proposed location of the Project;
  - (3) An address where copies of the draft TEIR are available; and
  - (4) Notice of a period of forty-five (45) days during which the Tribe will receive comments on the draft TEIR.
- (b) The Tribe will submit ten (10) copies each of the draft TEIR and Notice of Completion to the County, which will be asked to post public notice of the draft TEIR at the office of the County Board of Supervisors and to furnish the public notice to the public libraries serving the County. The County shall also be asked to serve in a timely manner the Notice of Completion to all Interested Persons, which Interested Persons shall be identified by the Tribe for the County, to the extent it can identify them. In addition, the Tribe will provide public notice by at least one of the procedures specified below:
  - (1) Publication at least one time by the Tribe in a newspaper of general circulation in the area affected by the Project. If more than one area is affected, the notice shall be published in the newspaper of largest circulation from among the newspapers of general circulation in those areas; or
  - (2) Direct mailing by the Tribe to the owners and occupants of property adjacent to, but outside, the Indian lands on which the Project is to be located. Owners of such property shall be identified as shown on the latest equalization assessment roll.

#### **Section 11.8.4. Issuance of Final TEIR.**

The Tribe shall prepare, certify and make available to the County, the State Clearinghouse, and the State Gaming Agency at least fifty-five (55) days before the completion of negotiations pursuant to section 11.8.7 a Final TEIR, which shall consist of:

- (a) The draft TEIR or a revision of the draft;
- (b) Comments and recommendations received on the draft TEIR either verbatim or in summary;
- (c) A list of persons, organizations, and public agencies commenting on the draft TEIR;
- (d) The responses of the Tribe to significant environmental points raised in the review and consultation process; and
- (e) Any other information added by the Tribe.

#### **Section 11.8.5.**

The Tribe shall reimburse the County for copying and mailing costs resulting from making the Notice of Preparation, Notice of Completion, and Draft TEIR available to the public under this section 11.0.

#### **Section 11.8.6.**

The Tribe's failure to prepare a TEIR when required may warrant an injunction where appropriate.

#### **Section 11.8.7. Intergovernmental Agreement.**

- (a) Before the commencement of a Project, and no later than the issuance of the Final TEIR to the County, the Tribe shall offer to commence negotiations with the County, and upon the County's acceptance of the Tribe's offer, shall negotiate with the County and shall enter into an enforceable written agreement with the County (the "Intergovernmental Agreement") with respect to the matters set forth below:

- (1) The timely mitigation of any Significant Effect on the Off-Reservation Environment (which effects may include, but are not limited to, aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, water resources, land use, mineral resources, traffic, noise, utilities and service systems, and cumulative effects), where such effect is attributable, in whole or in part, to the Project unless the parties agree that the particular mitigation is infeasible, taking into account economic, environmental, social, technological, or other considerations.
  - (2) Compensation for law enforcement, fire protection, emergency medical services and any other public services to be provided by the County and its special districts to the Tribe for the purposes of the Tribe's Gaming Operation, including the Gaming Facility, as a consequence of the Project.
  - (3) Reasonable compensation for programs designed to address gambling addiction.
  - (4) Mitigation of any effect on public safety attributable to the Project, including any compensation to the County as a consequence thereof.
- (b) The Tribe shall not commence a Project until the Intergovernmental Agreement specified in subdivision (a) is executed by the parties or is effectuated pursuant to section 11.8.8.
- (c) Before the commencement of a Project, and no later than the issuance of the Final TEIR to the State Gaming Agency, the Tribe shall negotiate with the State Department of Transportation or the State Designated Agency (if one is designated) and shall enter into an enforceable written agreement with the State Department of Transportation or the State Designated Agency to pay its fair share to timely mitigate the off-reservation traffic impacts of the Project on the State highway system and facilities where such impacts are attributable, in whole or in part, to the Project.



- (d) Nothing in this section 11.8.7 requires the Tribe to enter into any other intergovernmental agreements with a local governmental entity other than as set forth in subdivision (a).

#### **Section 11.8.8. Arbitration.**

In order to foster good government-to-government relationships and to assure that the Tribe is not unreasonably prevented from commencing a Project and benefiting therefrom, if an Intergovernmental Agreement with the County is not entered within fifty-five (55) days of the submission of the Final TEIR, or such further time as the Tribe and the County (for purposes of this section "the parties") may agree in writing, either party may demand binding arbitration before a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association as set forth herein with respect to any remaining disputes arising from, connected with, or related to the negotiation:

- (a) The arbitration shall be conducted as follows: Each party shall exchange with each other within five (5) days of the demand for arbitration its last, best written offer made during the negotiation pursuant to section 11.8.7. The arbitrator shall schedule a hearing to be heard within thirty (30) days of his or her appointment unless the parties agree to a longer period. The arbitrator shall be limited to awarding only one of the offers submitted, without modification, based upon that proposal which best provides feasible mitigation of Significant Effects on the Environment and on public safety and most reasonably compensates for public services pursuant to section 11.8.7, without unduly interfering with the principal objectives of the Project or imposing environmental mitigation measures which are different in nature or scale from the type of measures that have been required to mitigate impacts of a similar scale of other projects in the surrounding area, to the extent there are such other projects. The arbitrator shall take into consideration whether the Final TEIR provides the data and information necessary to enable the County to determine both whether the Project may result in a Significant Effect on the Environment and whether the proposed measures in mitigation are sufficient to mitigate any such effect. If the respondent does not participate in the arbitration, the arbitrator shall nonetheless conduct the arbitration and issue an award, and the claimant shall submit such evidence as the arbitrator may require therefor. Review of the resulting arbitration award is waived.

- (b) In order to effectuate this section, and in the exercise of its sovereignty, the Tribe agrees to waive its right to assert sovereign immunity in connection with the arbitrator's jurisdiction and in any action to (i) enforce the other party's obligation to arbitrate, (ii) enforce or confirm any arbitral award rendered in the arbitration, or (iii) enforce or execute a judgment based upon said award.
- (c) The arbitral award will become part of the written agreement required under section 11.8.7.

### **Section 11.8.9.**

Notwithstanding anything to the contrary herein, the MOU (as defined in section 2.18), and any amendments thereto, constitute an Intergovernmental Agreement within the meaning of section 11.8.7, and satisfy the requirements under section 11.8.7 to negotiate an Intergovernmental Agreement with the County with respect to the initial Gaming Facility constructed on the 305 Acre Parcel; provided, however, that the MOU, and any amendments thereto, satisfy said requirements only if the initial building (in which Gaming Activities and related hotel and restaurant facilities are located) has a footprint of no more than 280,000 square feet and the Tribe operates no more than 2000 Gaming Devices, and provided, further, that such MOU (in its original form or as amended) does not eliminate the Tribe's obligation to negotiate an amendment to the MOU or a new Intergovernmental Agreement for any Project commenced after the construction of such building. Further, if the aforementioned building has a footprint of more than 280,000 square feet or the Tribe operates more than 2000 Gaming Devices, the Tribe must offer to negotiate an amendment to the MOU or a new Intergovernmental Agreement with the County and comply with the requirements of section 11.0, including section 11.8.7.

## **SECTION 12.0. PUBLIC AND WORKPLACE HEALTH, SAFETY, AND LIABILITY.**

### **Sec. 12.1. General Requirements.**

The Tribe shall not conduct Class III Gaming in a manner that endangers the public health, safety, or welfare, provided, however, that nothing herein shall be construed to make applicable to the Tribe any State laws or regulations governing the use of tobacco.

### **Sec. 12.2. Tobacco Smoke.**

Notwithstanding section 12.1, the Tribe agrees to provide a non-smoking area in the Gaming Facility and to utilize a ventilation system throughout the Gaming Facility that exhausts tobacco smoke to the extent reasonably feasible under existing state-of-the-art technology, and further agrees not to offer or sell tobacco to anyone under eighteen (18) years of age.

### **Sec. 12.3. Health and Safety Standards.**

For the purposes of this Compact, the Tribe shall:

- (a) Adopt and comply with State public health standards for food and beverage handling. The Tribe will allow, during normal hours of operation, inspection of food and beverage services in the Gaming Facility by State, County, or city health inspectors, whichever inspector would have jurisdiction but for the Gaming Facility being on Indian lands, in order to assess compliance with these standards, unless inspections are routinely made by an agency of the United States government to ensure compliance with equivalent standards of the United States Public Health Service. Any report or other writing by said State, County, city or federal health inspectors shall be transmitted within twenty-four (24) hours to the State Gaming Agency and the Tribal Gaming Agency. Nothing herein shall be construed as submission of the Tribe to the jurisdiction of those State, County, or city health inspectors, but any violations of the standards shall be treated as violations of this Compact and may serve as a basis to issue, pursuant to section 13.0, orders requiring corrective action, including an order to enjoin the food and beverage operations of the Gaming Facility where warranted to protect public health or safety.
- (b) Adopt and comply with federal water quality and safe drinking water standards applicable in California. The Tribe will allow, during normal hours of operation, inspection and testing of water quality at the Gaming Facility by State, County, or city health inspectors, whichever inspector would have jurisdiction but for the Gaming Facility being on Indian lands, in order to assess compliance with these standards, unless inspections and testing are routinely made by an agency of the United States pursuant to federal law to ensure compliance with federal water quality and safe drinking water standards. Any report or other writings by said State, County, city or

federal health inspectors shall be transmitted within twenty-four (24) hours to the State Gaming Agency and the Tribal Gaming Agency. Nothing herein shall be construed as submission of the Tribe to the jurisdiction of those State, County, or city health inspectors, but any violations of the standards shall be treated as violations of this Compact and may serve as a basis to issue, pursuant to section 13.0, orders requiring corrective action, including an order to enjoin the use or disposal of water at the Gaming Facility where warranted to protect public health or safety.

- (c) Comply with the building and safety standards set forth in section 6.4.2.
- (d) Adopt and comply with federal and State workplace and occupational health and safety standards. The Tribe will allow inspection of Gaming Facility workplaces by State inspectors, during normal hours of operation, to assess compliance with these standards, and consents to the jurisdiction of the State agencies charged with the enforcement of those laws, including the Division of Occupational Safety and Health, the Occupational Safety and Health Standards Board and Occupational Safety and Health Appeals Board, and of the courts of the State of California for purposes of enforcement; provided that there is no right to inspection by State inspectors where an inspection has been conducted by an agency of the United States pursuant to federal law during the previous calendar quarter and the Tribe has provided a copy of the federal agency's report to the State Gaming Agency within ten (10) days of said federal inspection.
- (e) Adopt and comply with tribal codes to the extent consistent with the provisions of this Compact and other applicable federal law regarding public health and safety.
- (f) Adopt and comply with standards no less stringent than federal laws and state laws forbidding harassment, including sexual harassment, in the workplace, forbidding employers from discrimination in connection with the employment of persons to work or working for the Gaming Operation or in the Gaming Facility on the basis of race, color, religion, ancestry, national origin, gender, marital status, medical condition, sexual orientation, age, or disability, and forbidding employers from retaliation against persons who oppose discrimination or participate in employment discrimination

proceedings (hereinafter “harassment, retaliation, or employment discrimination”); provided that nothing herein shall preclude the Tribe from giving a preference in employment to members of federally-recognized Indian tribes pursuant to a duly adopted tribal ordinance.

- (1) The Tribe shall obtain and maintain an employment practices insurance policy consistent with industry standards for non-tribal casinos and underwritten by an insurer with an A.M. Best rating of A or higher which provides coverage of at least three million dollars (\$3,000,000) per occurrence for unlawful harassment, retaliation, or employment discrimination arising out of the claimant’s employment in, in connection with, or relating to the operation of, the Gaming Operation, Gaming Facility or Gaming Activities. In order to effectuate the insurance coverage, the Tribe, in the exercise of its sovereignty, shall expressly waive, and also waive its right to assert, sovereign immunity and any and all defenses based thereon up to the limits of the employment practices insurance policy, in accordance with the tribal ordinance referenced in subdivision (f)(2) below, in connection with any claim for harassment, retaliation, or employment discrimination arising out of the claimant’s employment in, in connection with, or relating to the operation of, the Gaming Operation, Gaming Facility or Gaming Activities; provided, however, that nothing herein requires the Tribe to agree to liability for punitive damages or to waive its right to assert sovereign immunity in connection therewith. The employment practices liability insurance policy shall acknowledge in writing that the Tribe has expressly waived, and also waived its right to assert, sovereign immunity and any and all defenses based thereon for the purpose of arbitration of those claims for harassment, retaliation, or employment discrimination up to the limits of such policy and for the purpose of enforcement of any ensuing award or judgment and shall include an endorsement providing that the insurer shall not invoke tribal sovereign immunity up to the limits of such policy; however, such endorsement or acknowledgement shall not be deemed to waive or otherwise limit the Tribe’s sovereign immunity for any portion of the claim that exceeds such policy limits. Nothing in this provision shall be interpreted to supersede any requirement in the Tribe’s employment discrimination complaint ordinance that a claimant

must exhaust administrative remedies as a prerequisite to arbitration.

- (2) The standards shall be subject to enforcement pursuant to an employment discrimination complaint ordinance which shall be adopted by the Tribe prior to the effective date of this Compact and which shall continuously provide at least the following:
  - (A) That California law shall govern all claims of harassment, retaliation, or employment discrimination arising out of the claimant's employment in, in connection with, or relating to the operation of, the Gaming Operation, Gaming Facility or Gaming Activities; provided that California law governing punitive damages need not be a part of the ordinance. Nothing in this provision shall be construed as a submission of the Tribe to the jurisdiction of the California Department of Fair Employment and Housing or the California Fair Employment and Housing Commission.
  - (B) That a claimant shall have one year from the date that an alleged discriminatory act occurred to file a written notice with the Tribe that he or she has suffered prohibited harassment, retaliation, or employment discrimination.
  - (C) That, in the exercise of its sovereignty, the Tribe expressly waives its right to assert sovereign immunity with respect to the binding arbitration of claims for harassment, retaliation, or employment discrimination, but only up to the limits of the employment practices insurance policy referenced in subdivision (f)(1) above; provided, however, such waiver shall not be deemed to waive or otherwise limit the Tribe's sovereign immunity for any portion of the claim that exceeds the insurance policy limits.
  - (D) That the Tribe consents to binding arbitration before a single arbitrator, who shall be a retired judge, in accordance with the comprehensive arbitration rules and

procedures of JAMS (or if those rules no longer exist, the closest equivalent), that discovery in the arbitration proceedings shall be governed by section 1283.05 of the California Code of Civil Procedure, that the Tribe shall initially bear the cost of JAMS and the arbitrator, but the arbitrator may award costs to the prevailing party not to exceed those allowable in a suit in California superior court, and that any party dissatisfied with the award of the arbitrator may at the party's election invoke the JAMS Optional Arbitration Appeal Procedure (or if those rules no longer exist, the closest equivalent), provided that the party making such election must bear all costs and expenses of JAMS and the arbitrators associated with the Appeal Procedure, regardless of the outcome. The arbitration shall take place within seventy-five (75) miles of the 305 Acre Parcel, or as otherwise mutually agreed by the parties. To effectuate its consent to the foregoing arbitration procedure, the Tribe shall, in the exercise of its sovereignty, waive its right to assert sovereign immunity in connection with the arbitrator's jurisdiction and in any state or federal court action to (i) enforce the parties' obligation to arbitrate, (ii) confirm, correct, or vacate the arbitral award rendered in the arbitration in accordance with section 1285 *et seq.* of the California Code of Civil Procedure, or (iii) enforce or execute a judgment based upon the award. The Tribe agrees not to assert, and will waive, any defense alleging improper venue or forum non conveniens as to any state or federal court located within the County in any such action brought with respect to the arbitration award.

- (3) The employment discrimination complaint ordinance required under subdivision (f)(2) may require, as a prerequisite to binding arbitration under subdivision (f)(2)(D), that the claimant exhaust the Tribe's administrative remedies, if any exist, in the form of a tribal discrimination complaint resolution process, for resolving the claim in accordance with the following standards:

- (A) Upon notice that the claimant alleges that he or she has suffered prohibited harassment, retaliation, or employment discrimination, the Tribe or its designee shall provide notice by personal service or certified mail, return receipt requested, that the claimant is required to proceed with the Tribe's employment discrimination complaint resolution process in the event that the claimant wishes to pursue his or her claim.
  - (B) The claimant must bring his or her claim within one hundred eighty (180) days of receipt of the written notice ("limitation period") of the Tribe's employment discrimination complaint resolution process as long as the notice thereof is served personally on the claimant or by certified mail with an executed return receipt by the claimant and the one hundred eighty (180) day limitation period is prominently displayed on the front page of the notice.
  - (C) The arbitration may be stayed until the completion of the Tribe's employment discrimination complaint resolution process or one hundred eighty (180) days from the date the claim was filed, whichever first occurs, unless the parties mutually agree upon a longer period.
  - (D) The decision of the Tribe's employment discrimination complaint resolution process shall be in writing, shall be based on the facts surrounding the dispute, shall be a reasoned decision, and shall be rendered within one hundred eighty (180) days from the date the claim was filed, unless the parties mutually agree upon a longer period.
- (4) Within fourteen (14) days following notification that a claimant claims that he or she has suffered harassment, retaliation, or employment discrimination, the Tribe shall provide notice by personal service or certified mail, return receipt requested, that the claimant is required within the specified limitation period to first exhaust the Tribe's employment discrimination complaint resolution process, if any exists, and if dissatisfied with the resolution, is entitled to arbitrate his or her claim before a



retired judge in a binding arbitration proceeding.

- (5) In the event the Tribe fails to adopt the ordinance specified in subdivision (f)(2), persons who claim they have suffered prohibited harassment, retaliation, or employment discrimination may proceed to arbitration as provided in this subdivision (f), in which California employment discrimination law, including applicable statutes of limitations, shall apply to all such claims arising out of the claimant's employment in, in connection with, or relating to the operation of the Gaming Operation, Gaming Facility or Gaming Activities, and the Tribe shall be deemed to have waived its right to assert sovereign immunity up to the limits of the employment practices insurance policy in connection with the arbitration of any such claims, any court proceedings based on such arbitration, including the arbitral award resulting therefrom, and any ensuing judgments. Nothing in this subdivision (f)(5), shall be interpreted as a waiver of the Tribe's sovereign immunity or consent to the jurisdiction of any court other than for the purposes set forth in this subdivision (f).
- (6) The Tribe shall provide written notice of the employment discrimination complaint ordinance and the procedures for bringing a complaint in its employee handbook. The Tribe also shall post and keep posted in prominent and accessible places in the Gaming Facility where notices to employees and applicants for employment are customarily posted, a notice setting forth the pertinent provisions of the employment discrimination complaint ordinance and information pertinent to the filing of a complaint.
- (7) The Tribe's failure to comply with this subdivision (f), shall be deemed a material breach of the Compact.
- (g) Adopt and comply with State laws prohibiting a gambling enterprise from cashing any check drawn against a federal, state, county, or city fund, including but not limited to, Social Security, unemployment insurance, disability payments, or public assistance payments.

- (h) Adopt and comply with State laws, if any, prohibiting a gambling or other enterprise from providing, allowing, contracting to provide, or arranging to provide alcoholic beverages, or food or lodging, for no charge or at reduced prices at a gambling establishment, lodging facility, or other enterprise as an incentive or enticement.
- (i) Adopt and comply with State laws, if any, prohibiting extensions of credit.
- (j) Comply with provisions of the Bank Secrecy Act, P.L. 91-508, October 26, 1970, 31 U.S.C. §§ 5311-5314, as amended, and all reporting requirements of the Internal Revenue Service, insofar as such provisions and reporting requirements are applicable to gambling establishments.
- (k) Adopt and comply with standards no less stringent than the standards of the Fair Labor Standards Act, 29 U.S.C. § 201, et seq., and the United States Department of Labor regulations implementing the Fair Labor Standards Act (29 CFR § 500, et seq.).

#### **Sec. 12.4. Tribal Gaming Facility Standards Ordinance.**

The Tribe shall adopt in the form of an ordinance the standards described in subdivisions (a) through (j) of section 12.3 to which the Gaming Operation is held, and shall transmit said ordinance to the State Gaming Agency not later than thirty (30) days after the effective date of this Compact. In the absence of a promulgated tribal standard in respect to a matter identified in those subdivisions, or the express adoption of an applicable federal and/or State statute or regulation, as the case may be, in respect of any such matter, the otherwise applicable federal and/or State statute or regulation shall be deemed to have been adopted by the Tribe as the applicable standard.

#### **Sec. 12.5. Insurance Coverage and Claims.**

- (a) The Tribe shall obtain and maintain commercial general liability insurance consistent with industry standards for non-tribal casinos in the United States underwritten by an insurer with an A.M. Best rating of A or higher ("Policy") which provides coverage of no less than ten million dollars (\$10,000,000) per occurrence for bodily injury, personal injury, and property damage arising out of, connected with, or relating to the operation of the Gaming Facility or Gaming

Activities. In order to effectuate the insurance coverage, the Tribe shall waive its right to assert its sovereign immunity up to the limits of the Policy, in accordance with the tribal ordinance referenced in subdivision (b) below, in connection with any claim for bodily injury, personal injury, or property damage, arising out of, connected with, or relating to the operation of the Gaming Facility or the Gaming Activities, including, but not limited to, injuries resulting from entry onto the Tribe's land for purposes of patronizing the Gaming Facility or providing goods or services to the Gaming Facility; provided, however, that nothing herein requires the Tribe to agree to liability for punitive damages or to waive its right to assert sovereign immunity in connection therewith. The Policy shall acknowledge in writing that the Tribe has waived its right to assert sovereign immunity for the purpose of arbitration of those claims up to the limits of the Policy referred to above and for the purpose of enforcement of any ensuing award or judgment and shall include an endorsement providing that the insurer shall not invoke tribal sovereign immunity up to the limits of the Policy; however, such endorsement or acknowledgement shall not be deemed to waive or otherwise limit the Tribe's sovereign immunity for any portion of the claim that exceeds the Policy limits.

- (b) The Tribe shall adopt, and at all times hereinafter shall maintain in continuous force, an ordinance that provides for all of the following:
  - (1) The ordinance shall provide that California tort law, including all applicable statutes of limitations, shall govern all claims of bodily injury, personal injury, or property damage arising out of, connected with, or relating to the operation of the Gaming Facility or the Gaming Activities, including but not limited to injuries resulting from entry onto the Tribe's land for purposes of patronizing the Gaming Facility or providing goods or services to the Gaming Facility, provided that California law governing punitive damages need not be a part of the ordinance.
  - (2) Said ordinance shall also expressly provide for waiver of the Tribe's right to assert sovereign immunity with respect to the arbitration of such claims but only up to the limits of the Policy; provided, however, such waiver shall not be deemed to waive or otherwise limit the Tribe's sovereign immunity for any portion of the claim that exceeds the Policy limits.

- (3) Said ordinance shall provide for the Tribe's consent to binding arbitration before a single arbitrator, who shall be a retired judge, in accordance with the comprehensive arbitration rules and procedures of JAMS (or if those rules no longer exist, the closest equivalent) to the extent of the limits of the Policy, that discovery in the arbitration proceedings shall be governed by section 1283.05 of the California Code of Civil Procedure, that the Tribe shall initially bear the cost of JAMS and the arbitrator, but the arbitrator may award costs to the prevailing party not to exceed those allowable in a suit in California Superior Court, and that any party dissatisfied with the award of the arbitrator may at the party's election invoke the JAMS Optional Arbitration Appeal Procedure (or if those rules no longer exist, the closest equivalent), provided that the party making such election must bear all costs and expenses of JAMS and the arbitrators associated with the Appeal Procedure regardless of the outcome. To effectuate its consent to the foregoing arbitration procedure, the Tribe shall, in the exercise of its sovereignty, waive its right to assert its sovereign immunity in connection with the arbitrator's jurisdiction and in any action to (i) enforce the parties' obligation to arbitrate, (ii) confirm, correct, modify, or vacate the arbitral award rendered in the arbitration, or (iii) enforce or execute a judgment based upon said award.
- (4) The ordinance may also require that the claimant first exhaust the Tribe's administrative remedies for resolving the claim (hereinafter the "Tribal Dispute Process") in accordance with the following standards: The claimant must bring his or her claim within one hundred eighty (180) days of receipt of written notice of the Tribal Dispute Process as long as notice thereof is served personally on the claimant or by certified mail with an executed return receipt by the claimant and the one hundred eighty (180) day limitation period is prominently displayed on the front page of said notice. The ordinance may provide that any arbitration shall be stayed until the completion of the Tribal Dispute Process or one hundred eighty (180) days from the date the claim is filed in the Tribal Dispute Process, whichever first occurs, unless the parties mutually agree to a longer period.

- (c) Upon notice that a claimant claims to have suffered an injury or damage covered by this section, the Tribe shall provide notice by personal service or certified mail, return receipt requested, that the claimant is required within the specified limitation period to first exhaust the Tribal Dispute Process, if any, and if dissatisfied with the resolution, entitled to arbitrate his or her claim de novo before a retired judge.
- (d) In the event the Tribe fails to adopt the ordinance specified in subdivision (b), the tort law of the State of California, including applicable statutes of limitations, shall apply to all claims of bodily injury, personal injury, and property damage arising out of, connected with, or relating to the operation of the Gaming Facility or the Gaming Activities, including but not limited to injuries resulting from entry onto the Tribe's land for purposes of patronizing the Gaming Facility or providing goods or services to the Gaming Facility; and the Tribe shall be deemed to have waived its right to assert sovereign immunity up to the limits of the Policy in connection with the arbitration of any such claims, any court proceedings based on such arbitration, including the arbitral award resulting therefrom, and any ensuing judgments.
- (e) Employees or authorized agents of the Tribe may not invoke, and the Tribe shall not invoke on behalf of any employee or agent, the Tribe's sovereign immunity in connection with any claim for, or any judgment based on any claim for, intentional injury to persons or property committed by the employee or authorized agent, without regard to the Tribe's liability insurance limits. Nothing in this subdivision prevents the Tribe from invoking sovereign immunity on its own behalf or authorizes a claim against the Tribe or a tribally owned entity.

**Sec. 12.6. Participation in State Statutory Programs Related to Employment.**

- (a) The Tribe agrees that it will participate in the State's workers' compensation program with respect to employees employed at the Gaming Facility. The workers' compensation program includes, but is not limited to, state laws relating to the securing of payment of compensation through one or more insurers duly authorized to write workers' compensation insurance in this State or through self-insurance as permitted under the State's workers' compensation laws. All disputes arising from the workers' compensation laws shall be heard by the Workers' Compensation Appeals Board pursuant to the

California Labor Code. The Tribe hereby consents to the jurisdiction of the Workers' Compensation Appeals Board and the courts of the State of California for purposes of enforcement. The parties agree that independent contractors doing business with the Tribe are bound by all State workers' compensation laws and obligations.

- (b) The Tribe agrees that it will participate in the State's program for providing unemployment compensation benefits and unemployment compensation disability benefits with respect to employees employed at the Gaming Facility, which participation shall include compliance with the provisions of the California Unemployment Insurance Code, and the Tribe consents to the jurisdiction of the State agencies charged with the enforcement of that Code and of the courts of the State of California for purposes of enforcement.
- (c) As a matter of comity, with respect to persons employed at the Gaming Facility, the Tribe shall withhold all taxes due to the State as provided in the California Unemployment Insurance Code and the Revenue and Taxation Code, and shall forward such amounts as provided in said Codes to the State.
- (d) As a matter of comity, the Tribe shall, with respect to the earnings of any person employed at the Gaming Facility, comply with all earnings withholding orders for support of a child, or spouse or former spouse, and all other orders by which the earnings of an employee are required to be withheld by an employer pursuant to Chapter 5 (commencing with section 706.010) of Division 1 of Title 9 of Part 2 of the California Code of Civil Procedure, and with all earnings assignment orders for support made pursuant to Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the California Family Code or section 3088 of the Probate Code.

#### **Sec. 12.7. Emergency Services Accessibility.**

The Tribe shall make reasonable provisions for adequate emergency fire, medical, and related relief and disaster services for patrons and employees of the Gaming Facility.

#### **Sec. 12.8. Alcoholic Beverage Service.**

Standards for alcohol service shall be subject to applicable law.

#### **Sec. 12.9. Possession of Firearms.**

The possession of firearms by any person in the Gaming Facility is prohibited at all times, except for federal, State, or local law enforcement personnel, or tribal law enforcement or security personnel authorized by tribal law and federal or State law to possess firearms at the Facility.

#### **Sec. 12.10. Labor Relations.**

The Gaming Activities authorized by this Compact may only commence after the Tribe has adopted an ordinance identical to the Tribal Labor Relations Ordinance attached hereto as Exhibit D, and the Gaming Activities may only continue as long as the Tribe maintains said ordinance. The Tribe shall provide written notice to the State that it has adopted said ordinance, along with a copy of the ordinance, before commencing the Gaming Activities authorized by this Compact.

### **SECTION 13.0. DISPUTE RESOLUTION PROVISIONS.**

#### **Sec. 13.1. Voluntary Resolution.**

In recognition of the government-to-government relationship of the Tribe and the State, the parties shall make their best efforts to resolve disputes that arise under this Compact by good faith negotiations whenever possible. Therefore, except for the right of either party to seek injunctive relief against the other when circumstances are deemed to require immediate relief, the Tribe and the State shall seek to resolve disputes by first meeting and conferring in good faith in order to foster a spirit of cooperation and efficiency in the administration and monitoring of the performance and compliance of the terms, provisions, and conditions of this Compact, as follows:

- (a) Either party shall give the other, as soon as possible after the event giving rise to the concern, a written notice setting forth the facts giving rise to the dispute and with specificity, the issues to be resolved.
- (b) The other party shall respond in writing to the facts and issues set forth in the notice within fifteen (15) days of receipt of the notice, unless both parties agree in writing to an extension of time.

- (c) The parties shall meet and confer in good faith by telephone or in person in an attempt to resolve the dispute through negotiation within thirty (30) days after receipt of the notice set forth in subdivision (a), unless both parties agree in writing to an extension of time.
- (d) If the dispute is not resolved to the satisfaction of the parties after the first meeting, either party may seek to have the dispute resolved by an arbitrator in accordance with this section, but neither party shall be required to agree to submit to arbitration.
- (e) Disagreements that are not otherwise resolved by arbitration or other mutually agreed means may be resolved in the United States District Court in the judicial district where the Tribe's Gaming Facility is located, or any State court of competent jurisdiction in or over the County. The disputes to be submitted to court action include, but are not limited to, claims of breach of this Compact. The parties are entitled to all rights of appeal permitted by law in the court system in which the action is brought.
- (f) In no event may the Tribe be precluded from pursuing any arbitration or judicial remedy against the State on the ground that the Tribe has failed to exhaust its State administrative remedies, and in no event may the State be precluded from pursuing any arbitration or judicial remedy against the Tribe on the ground that the State has failed to exhaust any tribal administrative remedies.

### **Sec. 13.2. Arbitration Rules.**

Unless otherwise specified in this Compact, arbitration shall be conducted before a single arbitrator in accordance with the Commercial Arbitration Rules of the American Arbitration Association, and shall be held in the federal judicial district in which the Tribe's Gaming Facility is located at a location selected by the arbitrator. Each side shall initially bear one-half the costs and expenses of the American Arbitration Association and the arbitrator, but the arbitrator shall award the prevailing party its costs, including the costs of the American Arbitration Association and the arbitrator; however, the parties shall bear their own attorney fees. The provisions of Section 1283.05 of the California Code of Civil Procedure shall apply, provided that no discovery authorized by that section may be conducted without leave of the arbitrator. The decision of the arbitrator shall be in writing, shall give reasons for the decision, and shall be binding. Judgment on the award may be entered in any federal or State court having jurisdiction thereof.



**Sec. 13.3. No Waiver or Preclusion of Other Means of Dispute Resolution.**

This section 13.0 may not be construed to waive, limit, or restrict any remedy that is otherwise available to either party, nor may this section be construed to preclude, limit, or restrict the ability of the parties to pursue, by mutual agreement, any other method of dispute resolution, including, but not limited to, mediation.

**Sec. 13.4. Limited Waiver of Sovereign Immunity.**

- (a) For the purpose of actions or arbitrations based on disputes between the State and the Tribe that arise under this Compact and the enforcement of any judgment or award resulting therefrom, the State and the Tribe expressly waive their right to assert their sovereign immunity from suit and enforcement of any ensuing judgment or arbitral award and to the arbitrator's jurisdiction and further consent to be sued in federal or state court, as the case may be, provided that (i) the dispute is limited solely to issues arising under this Compact, (ii) neither side makes any claim for monetary damages (except that payment of any money required by the terms of this Compact may be sought, and injunctive relief, specific performance (including enforcement of a provision of this Compact requiring the payment of money to one or another of the parties), and declaratory relief may be sought), and (iii) nothing herein shall be construed to constitute a waiver of the sovereign immunity of either the Tribe or the State with respect to any third party that is made a party or intervenes as a party to the action.
- (b) In the event that intervention, joinder, or other participation by any additional party in any action between the State and the Tribe would result in the waiver of the Tribe's or the State's sovereign immunity as to that additional party, the waivers of either the Tribe or the State provided herein may be revoked, except where joinder is required to preserve the court's jurisdiction or where The Wiyot Tribe is the additional party, in which cases the State and the Tribe may not revoke their waivers of sovereign immunity as to each other.

- (c) The waivers and consents to jurisdiction expressly provided for under this section 13.0 and elsewhere in the Compact shall extend to all arbitrations and civil actions authorized by this Compact, including, but not limited to, actions to compel arbitration, any arbitration proceeding herein, any action to confirm, modify, or vacate any arbitral award or to enforce any judgment, and any appellate proceeding emanating from any such proceedings. Except as stated herein or elsewhere in this Compact, no other waivers or consents to be sued are granted by either party.

## **SECTION 14.0. EFFECTIVE DATE AND TERM OF COMPACT.**

### **Sec. 14.1. Effective Date.**

This Compact shall not be effective unless and until all of the following have occurred:

- (a) The Compact is ratified in accordance with State law;
- (b) Notice of approval or constructive approval is published in the Federal Register as provided in 25 U.S.C. § 2710(d)(3)(B);
- (c) The State's compact with The Wiyot Tribe has been ratified in accordance with State law; and
- (d) Notice of approval or constructive approval of the State's compact with The Wiyot Tribe is published in the Federal Register, unless either the United States Department of Interior does not require such approval or such approval of that compact is not required as a matter of law.

### **Sec. 14.2. Term of Compact; Termination.**

- (a) Once effective, this Compact shall be in full force and effect for State law purposes until December 31, 2028. No sooner than eighteen (18) months prior to the aforementioned termination date, either party may request the other party to enter into negotiations to extend this Compact or to enter into a new compact.

- (b) Either party may bring an action in federal court, after providing a thirty (30)-day written notice of an opportunity to cure any alleged breach of this Compact, for a declaration that the other party has materially breached this Compact or that a material part of this Compact has been invalidated. Unless said declaration is stayed, upon issuance of such a declaration by the trial court, the complaining party may unilaterally terminate this Compact upon service of written notice on the other party. In the event a federal court determines that it lacks jurisdiction over such an action, the action may be brought in the Superior Court for Madera County. The parties expressly waive their immunity to suit for purposes of an action under this subdivision, subject to the qualifications stated in section 13.4.
- (c) If this Compact does not take effect by December 31, 2010, it shall be deemed null and void unless the Tribe and the State agree in writing to extend the date.
- (d) If the 305 Acre Parcel is not taken into trust by December 31, 2010, or does not receive final federal and State approval necessary to make such land eligible for Class III Gaming by December 31, 2010, the Compact shall be deemed null and void unless the Tribe and the State agree in writing to extend the date.

## **SECTION 15.0. AMENDMENTS; RENEGOTIATIONS.**

### **Sec. 15.1. Amendment by Agreement.**

The terms and conditions of this Compact may be amended at any time by the mutual and written agreement of both parties.

### **Sec. 15.2. Requests to Amend or Renegotiate.**

All requests to amend or renegotiate this Compact shall be in writing, addressed to the Tribal Chairperson or the Governor, as the case may be, and shall include the activities or circumstances to be negotiated, together with a statement of the basis supporting the request. If the request meets the requirements of this section, the parties shall confer promptly and determine within forty-five (45) days of the request a schedule for commencing negotiations, and both parties shall negotiate in good faith. The Chairperson of the Tribe and the Governor of the

State are hereby authorized to designate the person or agency responsible for conducting the negotiations, and shall execute any documents necessary to do so.

#### **SECTION 16.0. NOTICES.**

Unless otherwise indicated by this Compact, all notices required or authorized to be served shall be served by first-class mail or facsimile transmission to the following addresses, or to such other address as either party may designate by written notice to the other:

Governor  
Attention: Legal Affairs Secretary  
Governor's Office  
State Capitol  
Sacramento, California 95814

Tribal Chairperson  
North Fork Rancheria of Mono  
Indians of California  
P.O. Box 929  
North Fork, California 93643

#### **SECTION 17.0. CHANGES TO IGRA.**

This Compact is intended to meet the requirements of IGRA as it reads on the effective date of this Compact, and when reference is made to IGRA or to an implementing regulation thereof, the referenced provision is deemed to have been incorporated into this Compact as if set out in full. Subsequent changes to IGRA that diminish the rights of the State or the Tribe may not be applied retroactively to alter the terms of this Compact, except to the extent that federal law validly mandates retroactive application without the State's or the Tribe's respective consent.

#### **SECTION 18.0. MISCELLANEOUS.**

##### **Sec. 18.1. Third Party Beneficiaries.**

Except to the extent expressly provided under this Compact, this Compact is not intended to, and shall not be construed to, create any right on the part of a third party to bring an action to enforce any of its terms.

##### **Sec. 18.2. Complete Agreement.**

This Compact, together with all exhibits and approved amendments, sets forth the full and complete agreement of the parties and supersedes any prior agreements or understandings with respect to the subject matter hereof.

### **Sec. 18.3. Construction.**

Neither the presence in another tribal-state compact of language that is not included in this Compact, nor the absence in another tribal-state compact of language that is present in this Compact shall be a factor in construing the terms of this Compact.

### **Sec. 18.4. Successor Provisions.**

Wherever this Compact makes reference to a specific statutory provision or set of rules, it also applies to said provision or rules, as they may be amended from time to time, and any successor provision or set of rules.

### **Sec. 18.5. Representations.**

- (a) The Tribe expressly represents that as of the date of the undersigned's execution of this Compact the undersigned has the authority to execute this Compact on behalf of the Tribe, including any waiver of the right to sovereign immunity therein, and will provide written proof of such authority and of the ratification of this Compact by the tribal governing body to the Governor no later than thirty (30) days after the execution of this Compact by the undersigned.
- (b) The Tribe further represents that it is (i) recognized as eligible by the Secretary of the Interior for special programs and services provided by the United States to Indians because of their status as Indians, and (ii) recognized by the Secretary of the Interior as possessing powers of self-government.
- (c) In entering into this Compact, the State expressly relies upon the foregoing representations by the Tribe, and the State's entry into the Compact is expressly made contingent upon the truth of those representations as of the date of the Tribe's execution of this Compact through the undersigned. If the Tribe fails to timely provide written proof of the undersigned's aforesaid authority to execute this Compact or written proof of ratification by the Tribe's governing body, the Governor shall have the right to declare this Compact null and void.

IN WITNESS WHEREOF, the undersigned sign this Compact on behalf of the State of California and the North Fork Rancheria of Mono Indians of California.

STATE OF CALIFORNIA

NORTH FORK RANCHERIA OF  
MONO INDIANS OF CALIFORNIA

\_\_\_\_\_  
By Arnold Schwarzenegger  
Governor of the State of California

\_\_\_\_\_  
By Judy E. Fink  
Chairperson of the  
North Fork Rancheria of Mono  
Indians of California

Executed this \_\_ day of \_\_\_\_\_,  
2008, at Sacramento, California

Executed this \_\_ day of \_\_\_\_\_,  
2008, at Sacramento, California

**ATTEST:**

\_\_\_\_\_  
Debra Bowen  
Secretary of State, State of California

## **EXHIBITS**

- A. Off-Reservation Environmental Impact Analysis Checklist
- B. Telephone Survey Methodology
- C. Securitization
  - C-1. Form of Confidentiality Agreement
  - C-2. Form of Limited Waiver
- D. Tribal Labor Relations Ordinance
- E. Map and Description of 305 Acre Parcel

## EXHIBIT A

### Off-Reservation Environmental Impact Analysis Checklist

#### I. Aesthetics

Would the project:	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage off-reservation scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Create a new source of substantial light or glare, which would adversely affect day or nighttime views of historic buildings or views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### II. Agricultural Resources

Would the project:	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Involve changes in the existing environment, which, due to their location or nature, could result in conversion of off-reservation farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### III. Air Quality

Would the project:	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d) Expose off-reservation sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people off-reservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### IV. Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse impact, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any off-reservation riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected off-reservation wetlands as defined by Section 404 of the Clean Water Act?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## V. Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of an off-reservation historical or archeological resource?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Directly or indirectly destroy a unique off-reservation paleontological resource or site or unique off-reservation geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any off-reservation human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## VI. Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Expose off-reservation people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial off-reservation soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## VII. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the off-reservation public or the off-reservation environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the off-reservation public or the off-reservation environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

quarter mile of an existing or proposed off-reservation school?

- d) Expose off-reservation people or structures to a significant risk of loss, injury or death involving wildland fires.

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### VIII. Water Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete off-reservation groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff off-reservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Place within a 100-year flood hazard area structures, which would impede or redirect off-reservation flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Expose off-reservation people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### IX. Land Use

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with any off-reservation land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Conflict with any applicable habitat conservation plan or natural communities conservation plan covering off-reservation lands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## X. Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known off-reservation mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in the loss of availability of an off-reservation locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## XI. Noise

Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exposure of off-reservation persons to noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of off-reservation persons to excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the off-reservation vicinity of the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the off-reservation vicinity of the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## XII. Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial off-reservation population growth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere off-reservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### XIII. Public Services

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered off-reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the off-reservation public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### XIV. Recreation

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Increase the use of existing off-reservation neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### XV. Transportation / Traffic

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause an increase in off-reservation traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated off-reservation roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards to an off-reservation design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access for off-reservation responders?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## XVI. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exceed off-reservation wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant off-reservation environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant off-reservation environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in a determination by an off-reservation wastewater treatment provider (if applicable), which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## XVII. Cumulative Effects

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have impacts that are individually limited, but cumulatively considerable off-reservation? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past, current, or probable future projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## **EXHIBIT B**

### **Telephone Survey Methodology**

The telephone survey shall be conducted among at least 600 randomly selected residents who live within the affected community of Madera County. The affected community shall be defined as all Madera County residents living within an area with a postal zip code address of 93610, 93622, 93637, 93638, or 93653. This area, which is shown on the map attached at page B-5 hereto, incorporates 76% of the Madera County population, or approximately 104,000 residents, including all residents of the City of Madera, Chowchilla, and the surrounding unincorporated areas in Madera County reaching west, north, and south from the 305 Acre Parcel to the County border and extending eastward from the 305 Acre Parcel approximately 15 or more miles.

The residents surveyed must be selected using random digit dialing techniques to include unlisted as well as listed phone numbers. Using this method to survey the general population will allow for diversity in public sentiment, including men and women from all education levels, ages, and races.

Given the sample size of at least 600 and the method of random selection, the statistical margin of error can be reliably set at plus or minus four percent within a 95 percent degree of confidence. In other words, in 95 out of every 100 responses, the "surveyed value" will be within plus or minus four percent of the "true value."

The survey must test respondents' support for the proposed gambling casino in the affected community of Madera County, using the questions below. The survey would also ask questions to determine the demographics of the sample (e.g. age, race, education). These results will be compared with current census data to ensure that the sample is representative of the community.

### **Survey Questions**

Hello, I'm \_\_\_\_\_ from \_\_\_\_\_, a public opinion research company. I am not trying to sell you anything. We're conducting a very brief survey about issues that concern the residents of Madera County, and we would like to include your opinions. I want to assure you that your answers are voluntary and will be treated as anonymous and strictly confidential. [Ask for the appropriate member of the household who is 18 years or older, as dictated by generally accepted survey techniques.]

1. Are you a resident of Madera County?

Yes .....1  
No ..... Thank and Terminate  
Don't know ..... Thank and Terminate

2. What is your ZIP code?

93610.....1  
93622.....2  
93637.....3  
93638.....4  
93653.....5  
Other ..... Thank and Terminate

3. Now I'd like to ask you about a local issue in Madera County. Have you read, seen, or heard anything about a proposed casino near Highway 99 in Madera County? [IF YES, ASK:] Have you heard a lot, a fair amount, or just a little?

Yes, heard a lot .....1  
Yes, heard a fair amount .....2  
Yes, heard a little .....3  
No .....4  
[DON'T READ] Don't know .....5

4. As you may know, the North Fork Rancheria of Mono Indians has proposed building a resort hotel and casino just north of the city of Madera next to Highway 99. Do you support or oppose this proposed project? [IF SUPPORT/OPPOSE, ASK:] Do you strongly (support/oppose) or just somewhat (support/oppose) this?

Strongly support .....1  
Somewhat support .....2  
Somewhat oppose .....3  
Strongly oppose .....4  
[DON'T READ] Don't know .....5  
Refused .....6

I have a few final questions for statistical purposes, and we'll be through.



5. Do you live inside the city limits of the City of Chowchilla or the City of Madera, or do you live in an unincorporated area of Madera County?

Chowchilla .....1  
 Madera .....2  
 Unincorporated area .....3  
 Other City (Specify) .....4  
 [DON'T READ] Refused .....5

6. Are you currently registered to vote in Madera County?

Yes .....1  
 No .....2

7. What is your approximate age?

18 to 24 .....1  
 25 to 29 .....2  
 30 to 34 .....3  
 35 to 39 .....4  
 40 to 44 .....5  
 45 to 49 .....6  
 50 to 54 .....7  
 55 to 59 .....8  
 60 to 64 .....9  
 65 and over .....0  
 [DON'T READ] Refused .....X

8. What was the last level of school you completed?

Grades 1-8 .....1  
 Grades 9-11 .....2  
 High school graduate (12) .....3  
 Some college/vocational school .....4  
 College graduate (4).....5  
 Post Graduate work/Professional school .....6  
 [DON'T READ] Don't know .....7

9. With which ethnic group do you identify yourself: Latino or Hispanic, White, Black or African American, Asian American, Native American or Indian, or of some other ethnic or racial background?

Latino/Hispanic .....1  
 White.....2

Black/African American .....	3
Asian American .....	4
Native American/Indian .....	5
Other .....	6
[DON'T READ] Don't know .....	7

[THANK AND TERMINATE.]

10. Gender [BY OBSERVATION]

Male .....	1
Female.....	2

## **EXHIBIT C**

### **Securitization**

The parties acknowledge that, from time to time, during the term of the Compact, the State may elect to securitize all or a portion of the payments to be made by the Tribe pursuant to the Compact. The provisions set forth herein are intended to facilitate the securitization of such payments should the State so elect.

1. The Tribe and the State agree that any securitization financing will utilize a structure that does not require public disclosure of tribal or tribal business enterprise financial information or business information which is not already in the public domain at the time that such information is to be disclosed.
2. In order to assist the State in the securitization of tribal payments made pursuant to this Compact, the Tribe agrees to consider in good faith all arrangements designed to comply with requests by insurers, letter of credit providers, investment banks, financial advisory firms, other financial institutions, legal counsel or others in connection with the provision of credit enhancement or the structuring of a securitization financing by such entities; provided, however, that the Tribe is not required to consider any agreement in which the Tribe guarantees the obligations of any other tribe or entity. In connection therewith, the Tribe agrees to provide requested information to any of the aforementioned entities, including, but not limited to, information relating to its financial and operating data, market studies or management analysis, its legal organization, any service or management contracts, and any outstanding indebtedness; provided, however, that the production of such information is conditioned upon entry by the State or the requesting entity, as appropriate, into a Confidentiality Agreement with the Tribe in a form substantially similar to the form attached hereto as Exhibit C-1.
3. During the term of this Compact, the Tribe agrees to use its reasonable best efforts to make arrangements intended to assist the State in any securitization financing, including but not limited to, obtaining such approvals and consents as are necessary to provide that payments required to be made pursuant to this Compact shall constitute an operating expense of the Tribe and shall be senior in

priority to any payment of any bank loans or other obligations for borrowed money currently existing or incurred hereafter.

4. The Tribe agrees to provide a limited waiver of sovereign immunity as necessary to provide for the enforcement of any arrangements agreed to pursuant to this Exhibit C. At a minimum, any waiver of sovereign immunity by the Tribe shall include provisions substantially similar to those attached hereto as Exhibit C-2.
5. The Tribe shall, or shall cause the appropriate counsel to, provide customary legal opinions affirming the validity and enforceability of (i) this Compact; (ii) any arrangements agreed upon or entered into pursuant to this Exhibit C; (iii) the priority of the payment of the amounts required to be paid by the Tribe under this Compact; and (iv) the Tribe's waiver of sovereign immunity.
6. The covenant of the State to provide the exclusivity set forth in Section 4.4 constitutes an important inducement to the Tribe to make the payments described in Section 4.3.3, subdivision (a), of this Compact, and granting such exclusivity in return for such payments is purely a financial matter, and has been negotiated by the parties pursuant to articulated federal policy pursuant to the IGRA. Nothing herein shall preclude the State from exercising its police power in the event that the health, welfare or well-being of the citizens of the State shall require such exercise; provided, however, that the State acknowledges and recognizes that expansion of gaming within the exclusive geographic core market described in Section 4.4, subdivision (b), in a manner violative of this Compact is not an exercise of such police power and is purely a financial matter.

## **EXHIBIT C-1**

### **Form of Confidentiality Agreement**

**[Date]**

**[Name of Tribe]**

**[Address]**

Ladies and Gentlemen:

In connection with one or more bond issues by the State of California (the "State") pursuant to its Tribal Compact Asset Securitization Program (the "Transaction"), the following individuals or entities may receive certain non-public information (including, but not limited to, financial statements, balance sheets, income statements, and operating data) regarding the [NAME OF TRIBE] (the "Tribe"): [NAMES AND TITLES OF STATE EMPLOYEES OR OFFICIALS] (collectively, the "State Officials") and [NAMES OF INVESTMENT BANKS, OTHER FINANCIAL INSTITUTIONS, INSURERS, LETTER OF CREDIT PROVIDERS, RATING AGENCIES, FINANCIAL ADVISORS, LEGAL COUNSEL AND OTHER TRANSACTION PARTICIPANTS] (collectively, the "Transaction Participants" and each a "Transaction Participant"). As a condition to furnishing such information to the undersigned State Officials and the undersigned Transaction Participants, the Tribe has required that the undersigned agree, as set forth below, to treat such information as confidential, whether furnished before or after the date of this confidentiality agreement. As used herein, "Confidential Material" constitutes all information furnished to the State Officials and the Transaction Participants by or on behalf of the Tribe and marked as confidential, including oral explanations thereof, pursuant to the transaction.

The State Officials and the Transaction Participants agree not to use any of the Confidential Material for any purpose other than due diligence in connection with or execution of the Transaction. The State Officials and the Transaction Participants agree that each item of Confidential Material will be kept confidential by such State Officials and Transaction Participants; provided, however, that such State Officials and Transaction Participants may prepare one or more reports based upon the Confidential Material and may provide a copy of the report(s) to other persons so long as: 1) the reports are treated as Confidential Material; and (2) each

person receiving the report signs a confidentiality agreement (in a form substantially similar to this confidentiality agreement) with the Tribe prior to receiving any report. The Tribe agrees to sign a confidentiality agreement with each such person as long as the State Officials or the Transaction Participants who prepared the report provide the Tribe a reasonable basis for a person's need to receive the report.

If Confidential Material is provided to the State Officials or the Transaction Participants and either the State or any Transaction Participant elects not to participate in the Transaction, then the party electing not to participate in the Transaction will return to the Tribe all Confidential Material which has been provided to it and will destroy or, at its option, return to the Tribe all written documentation prepared by it for internal purposes based in whole or in part on any Confidential Material. Such destruction will be confirmed in writing at the Tribe's request. Notwithstanding the foregoing, the State Officials and the Transaction Participants may retain in a secure location copies of Confidential Material for purposes of defending any legal proceeding or as is required to be maintained in order to satisfy any law, rule, regulation, order, or decree to which such State Officials or Transaction Participants are subject. The redelivery, destruction and/or retention as set forth herein of Confidential Material shall not relieve such State Officials or Transaction Participants of their respective obligation of confidentiality hereunder. This agreement shall expire on the third anniversary of the execution date; provided, however, that the obligation of the State Officials and the Transaction Participants to keep confidential any historical financial information received from the Tribe shall survive such expiration.

The term "Confidential Material" does not include information which (1) becomes generally available to the public by means other than as a result of a disclosure by the State Officials or the Transaction Participants or their representatives in breach of this confidentiality agreement, (2) was available to the State or any Project Participant on a non-confidential basis or prior to its disclosure to the State Officials or the Transaction Participants by the Tribe or its representatives, or (3) becomes available to the State or any Transaction Participant on a non-confidential basis from a source other than the Tribe or its representatives.

In the event that any State Officials or Transaction Participants are served with a subpoena or any other court order to produce, disclose or deliver any Confidential Material, such State Officials or Transaction Participants agree, to the extent permitted by law or time available, to notify the Tribe in writing within 3 days after receipt of such subpoena or order, and the Tribe may intervene and/or take all

steps it deems necessary to quash or otherwise challenge the subpoena or order. In any case, such State Officials or Transaction Participants agree, to the extent permitted by law or time available, to use reasonable efforts to notify the Tribe not later than a date prior to the date on which such State Officials or Transaction Participants are required to comply with the subpoena or order.

The State Officials and the Transaction Participants recognize that the confidentiality of the Confidential Material is of the utmost importance to the Tribe and that the Tribe would not contemplate or enter into the Transaction without the assurances of confidentiality set forth herein. In the event any party seeks to enforce this confidentiality agreement, the prevailing party shall be entitled to recover all of its cost of enforcement (including reasonable attorneys' fees and costs of trial and appeal) in addition to any other remedies. Available remedies shall include injunction or actual damages proved; provided, however, that in no event shall available remedies include punitive, exemplary, consequential or other damages.

In any action to enforce the term of this confidentiality agreement against the State Officials or the Transaction Participants, the terms of this confidentiality agreement shall be governed by and construed in accordance with the laws of the State of California.

Dated: \_\_\_\_\_

**[State officials or Transaction  
Participants]**

By: \_\_\_\_\_

Its: \_\_\_\_\_

Dated: \_\_\_\_\_

**[Name of Tribe]**

By: \_\_\_\_\_

Its: \_\_\_\_\_

## **EXHIBIT C-2**

### **Form of Limited Waiver**

Capitalized terms used but not otherwise defined herein shall have the meaning assigned to them in the Compact.

#### **Definitions**

“Act” means Article 6.5 (commencing with section 63048.6) of Chapter 2 of Division 1 of Title 6.7 of the California Government Code, as amended from time to time.

“Ancillary Agreement” means any agreement entered into by the Corporation in connection with the issuance of the Bonds, as more particularly described in the Indenture.

“Ancillary Provider” means any financial institution (including but not limited to a Credit Provider or a Qualified Swap Provider (as such terms are defined in the Indenture), remarketing agent, auction agent, broker-dealer, tender agent, paying agent, co-trustee or other entity which is a party with the Issuer (as such term is defined in the Indenture) to an Ancillary Agreement.

“Bondholders” or “Holders” means the registered owners of Outstanding Bonds, construed in accordance with the provisions of the Indenture.

“Bonds” means the Tribal Compact Securitization Bonds, Series \_\_\_\_\_ issued in one or more series by the Corporation under the Indenture.

“Corporation” means the \_\_\_\_\_, a special purpose trust established as a not-for-profit corporation by the Act and duly incorporated under the laws of the State of California.

“Indenture” means the Master Indenture of Trust, dated as of [DATE], between the Corporation and the Trustee, as amended or supplemented from time to time.

“State” means the State of California.

“Trustee” means \_\_\_\_\_, its successors in interest and any successor trustee under the Indenture.



### **Section 1**

The Tribe hereby grants a limited waiver of its sovereign immunity, for the sole benefit of the State and the Corporation and their successors and assigns including the Trustee, Bondholders, Ancillary Providers and the holder of the residual certificate under the Indenture, such waiver being limited to actions or claims in federal or state court (at the State's or the Corporation's election, as applicable) by the State against the Tribe, to enforce the provisions of section 4.3.3 of the Compact, or by the Corporation against the Tribe which shall arise directly from, or are related to, [NAME OF AGREEMENT ENTERED INTO OR ARRANGEMENT AGREED TO BY TRIBE TO ASSIST STATE IN SECURITIZATION OF TRIBAL PAYMENTS]. The Tribe agrees that the law to be applied by United States District Court or State court, as the case may be, in any such action or claim shall be the law of the State of California, without reference to any choice of law provisions of the laws of the State. The Tribe expressly and irrevocably waives any requirement that may exist for exhaustion of any remedies of the Tribe prior to commencement of any such action or claim in any federal or state court.

### **Section 2**

In order to assure payment by the Tribes of amounts required to be paid pursuant to section 4.3.3 of the Compact, the Tribe agrees and acknowledges that the State and the Corporation shall have and be entitled to all available legal and equitable remedies in any action under section 4.3.3 of the Compact, including the right to specific performance, monetary damages and injunctive or declaratory relief, the rights afforded in section 4.3.3 and section 13.0, and the right to terminate the Compact pursuant to section 14.2, subdivision (b) of the Compact. Without in any way limiting the generality of the foregoing, in connection with any action by the State to enforce the obligations of the Tribe pursuant to section 4.3.3 of the Compact, the Tribe expressly authorizes any governmental or other authorities, who have the right and duty under applicable law, to take any and all action authorized or ordered by any court, including without limitation, attaching assets of the Tribe's Gaming Operation (including its Gaming Facilities) and otherwise

giving effect to any judgment entered. The Tribe represents and warrants that the waiver of sovereign immunity contained herein is valid and binding and the Tribe has complied with all necessary approvals of the Tribe and/or internal procedures in order to grant such waiver of its sovereign immunity. The Tribe agrees that the waiver of sovereign immunity contained herein is irrevocable.

## **EXHIBIT D**

### **Tribal Labor Relations Ordinance**

#### **Section 1: Threshold of applicability**

- (a) Upon the employment of 250 or more persons in a Tribal Casino and Related Facility, if any, once they are open to the public, the provisions of this Tribal Labor Relations Ordinance (TLRO or Ordinance) shall become effective immediately. For purposes of this Ordinance, a "Tribal Casino" is one in which class III gaming is conducted pursuant to a tribal-state compact between the State of California and this Tribe. A "Related Facility" is one for which the only significant purpose is to facilitate patronage of the class III gaming operations.
- (b) Upon the request of a labor organization, the Tribal Gaming Agency shall certify the number of employees in the Tribal Casino or other Related Facility as defined in 1(a) above. Either party may dispute the certification of the Tribal Gaming Agency to the Tribal Labor Panel.

#### **Section 2: Definition of Eligible Employees**

The provisions of this Ordinance shall apply to any person (hereinafter "Eligible Employee") who is employed within the Tribal Casino or other Related Facility, except for any of the following:

- (1) any employee who is a supervisor, defined as any individual having authority, in the interest of the Tribe and/or employer, to hire, transfer, suspend, lay off, recall, promote, discharge, assign, reward, or discipline other employees, or responsibility to direct them or to adjust their grievances, or effectively to recommend such action, if in connection with the foregoing the exercise of such authority is not of a merely routine or clerical nature, but requires the use of independent judgment;
- (2) any employee of the Tribal Gaming Agency;

- (3) any employee of the security or surveillance department, other than those who are responsible for the technical repair and maintenance of equipment;
- (4) any cash operations employee who is a “cage” employee or money counter, or auditor; or
- (5) any dealer.

### **Section 3: Non-interference with regulatory or security activities**

Operation of this Ordinance shall not interfere in any way with the duty of the Tribal Gaming Agency to regulate the gaming operation in accordance with the Tribe’s National Indian Gaming Commission-approved gaming ordinance. Furthermore, the exercise of rights hereunder shall in no way interfere with the Tribal Casino’s surveillance/security systems, or any other internal controls system designed to protect the integrity of the Tribe’s gaming operations. The Tribal Gaming Agency is specifically excluded from the definition of Tribe and its agents.

### **Section 4: Eligible Employees free to engage in or refrain from concerted activity**

Eligible Employees shall have the right to self-organization, to form, to join, or assist employee organizations, to bargain collectively through representatives of their own choosing, and to engage in other concerted activities for the purpose of collective bargaining or other mutual aid or protection, including picketing and leafleting adjacent or leading to, but not inside, the Tribal Casino, and shall also have the right to refrain from any or all such activities.

### **Section 5: Unfair labor practices for the Tribe**

It shall be an unfair labor practice for the Tribe and/or employer or their agents:

- (1) to interfere with, restrain or coerce Eligible Employees in the exercise of the rights guaranteed herein;
- (2) to dominate or interfere with the formation or administration of any labor organization or contribute financial or other support

to it, but this does not restrict the Tribe and/or employer and a certified labor organization from agreeing to union security or dues checkoff;

- (3) to discharge or otherwise discriminate against an Eligible Employee because s/he has filed charges or given testimony under this Ordinance;
- (4) to refuse to bargain collectively with the representatives of Eligible Employees.

#### **Section 6: Unfair labor practices for the labor organization**

It shall be an unfair labor practice for a labor organization or its agents:

- (1) to interfere, restrain or coerce Eligible Employees in the exercise of the rights guaranteed herein;
- (2) to engage in, or to induce or encourage any individual employed by any person engaged in commerce or in an industry affecting commerce to engage in, a strike or secondary boycott or a refusal in the course of his or her employment to use, manufacture, process, transport or otherwise handle or work on any goods, articles, materials, or commodities or to perform any services; or to threaten, coerce, or restrain any person engaged in commerce or in an industry affecting commerce: provided, that nothing contained in this clause (2) shall be construed to make unlawful any primary strike or primary picketing;
- (3) to force or require the Tribe and/or employer to recognize or bargain with a particular labor organization as the representative of Eligible Employees if another labor organization has been certified as the representative of such Eligible Employees under the provisions of this TLRO;
- (4) to refuse to bargain collectively with the Tribe and/or employer, provided it is the representative of Eligible Employees subject to the provisions herein; or
- (5) to attempt to influence the outcome of a tribal governmental election, provided, however, that this section does not apply to tribal members.

## **Section 7: Tribe's and labor organization's right to free speech**

The Tribe's and labor organization's expression of any view, argument or opinion or the dissemination thereof, whether in written, printed, graphic or visual form, shall not constitute or be evidence of interference with, restraint or coercion if such expression contains no threat of reprisal or force or promise of benefit.

## **Section 8: Access to Eligible Employees**

- (a) Access shall be granted to the labor organization for the purposes of organizing Eligible Employees, provided that such organizing activity shall not interfere with patronage of the Tribal Casino or Related Facility or with the normal work routine of the Eligible Employees and shall be done on non-work time in non-work areas that are designated as employee break rooms or locker rooms that are not open to the public. The Tribe may require the labor organization and/or labor organization organizers to be subject to the same licensing rules applied to individuals or entities with similar levels of access to the Tribal Casino or Related Facility, provided that such licensing shall not be unreasonable, discriminatory, or designed to impede access.
- (b) The Tribe, in its discretion, may also designate additional voluntary access to the labor organization in such areas as employee parking lots and non-Casino facilities located on tribal lands.
- (c) In determining whether organizing activities potentially interfere with normal tribal work routines, the labor organization's activities shall not be permitted if the Tribal Labor Panel determines that they compromise the operation of the Tribal Casino in the following areas:
  - (1) security and surveillance systems throughout the Tribal Casino, and reservation;
  - (2) access limitations designed to ensure security;
  - (3) internal controls designed to ensure security;
  - (4) other systems designed to protect the integrity of the Tribe's gaming operations, tribal property and/or safety of casino personnel, patrons, employees or tribal members, residents, guests or invitees.

- (d) The Tribe shall provide to the labor organization, upon a thirty percent (30%) showing of interest to the Tribal Labor Panel, an election eligibility list containing the full first and last name of the Eligible Employees within the sought after bargaining unit and the Eligible Employees' last known address within ten (10) working days. Nothing herein shall preclude a tribe from voluntarily providing an election eligibility list at an earlier point of a union organizing campaign.
- (e) The Tribe agrees to facilitate the dissemination of information from the labor organization to Eligible Employees at the Tribal Casino by allowing posters, leaflets and other written materials to be posted in non-public employee break areas where the Tribe already posts announcements pertaining to Eligible Employees. Actual posting of such posters, notices, and other materials, shall be by employees desiring to post such materials.

#### **Section 9: Tribal preference explicitly permitted**

Nothing herein shall preclude the Tribe from giving a preference in employment, seniority, lay-offs or retention to members of the Tribe or shall in any way affect the Tribe's right to follow tribal law, ordinances, personnel policies or the Tribe's customs or traditions regarding said preference in employment, seniority, layoffs or retention.

#### **Section 10: Secret ballot elections**

- (a) Dated and signed authorized cards from thirty percent (30%) or more of the Eligible Employees within the bargaining unit verified by the elections officer will result in a secret ballot election to be held within 30 days from presentation to the elections officer.
- (b) The election shall be conducted by the election officer. The election officer shall be a member of the Tribal Labor Panel chosen pursuant to the dispute resolution provisions herein. All questions concerning representation of the Tribe and/or Employer's Eligible Employees by a labor organization shall be resolved by the election officer. The election officer shall be chosen upon notification by the labor organization to the Tribe of its intention to present authorization cards, and the same election officer shall preside thereafter for all proceedings under the request for recognition; provided however that if the election officer resigns, dies or is incapacitated for any other

reason from performing the functions of this office, a substitute election officer shall be selected in accordance with the dispute resolution provisions herein.

- (c) The election officer shall certify the labor organization as the exclusive collective bargaining representative of a unit of employees if the labor organization has received the majority of votes by employees voting in a secret ballot election that the election officer determines to have been conducted fairly. If the election officer determines that the election was conducted unfairly due to misconduct by the Tribe and/or employer or labor organization, the election officer may order a re-run election. If the election officer determines that there was the commission of serious unfair labor practices by the Tribe that interfere with the election process and preclude the holding of a fair election, and the labor organization is able to demonstrate that it had the support of a majority of the employees in the unit at any point before or during the course of the Tribe's misconduct, the election officer shall certify the labor organization.
- (d) The Tribe or the labor organization may appeal any decision rendered after the date of the election by the election officer to a three (3) member panel of the Tribal Labor Panel mutually chosen by both parties.
- (e) A labor organization which loses an election and has exhausted all dispute remedies related to the election may not invoke any provisions of this Ordinance at the Tribal Casino or Related Facility until one year after the election was lost.

### **Section 11: Collective bargaining impasse**

Upon recognition, the Tribe and the labor organization will negotiate in good faith for a collective bargaining agreement covering bargaining unit employees represented by the labor organization. If collective bargaining negotiations result in impasse, and the matter has not been resolved by the tribal forum procedures set forth in section 13 (b) governing resolution of impasse within sixty (60) working days or such other time as mutually agreed to by the parties, the labor organization shall have the right to strike.



## **Section 12: Decertification of bargaining agent**

- (a) The filing of a petition signed by thirty percent (30%) or more of the Eligible Employees in a bargaining unit seeking the decertification of a certified labor organization, will result in a secret ballot election to be held 30 days from the presentation of the petition.
- (b) The election shall be conducted by an election officer. The election officer shall be a member of the Tribal Labor Panel chosen pursuant to the dispute resolution provisions herein. All questions concerning the decertification of the labor organization shall be resolved by an election officer. The election officer shall be chosen upon notification to the Tribe and the labor organization of the intent of the employees to present a decertification petition, and the same election officer shall preside thereafter for all proceedings under the request for decertification; provided, however, that if the election officer resigns, dies or is incapacitated for any other reason from performing the functions of this office, a substitute election officer shall be selected in accordance with the dispute resolution provisions herein.
- (c) The election officer shall order the labor organization decertified as the exclusive collective bargaining representative if a majority of the employees voting in a secret ballot election that the election officer determines to have been conducted fairly vote to decertify the labor organization. If the election officer determines that the election was conducted unfairly due to misconduct by the Tribe and/or employer or the labor organization, the election officer may order a re-run election or dismiss the decertification petition.
- (d) A decertification proceeding may not begin until one (1) year after the certification of a labor union if there is no collective bargaining agreement. Where there is a collective bargaining agreement, a decertification petition may only be filed no more than 90 days and no less than 60 days prior to the expiration of a collective bargaining agreement. A decertification petition may be filed anytime after the expiration of a collective bargaining agreement.
- (e) The Tribe or the labor organization may appeal any decision rendered after the date of the election by the election officer to a three (3) member panel of the Tribal Labor Panel mutually chosen by both parties.

### **Section 13: Binding dispute resolution mechanism**

- (a) All issues shall be resolved exclusively through the binding dispute resolution mechanisms herein, with the exception of a collective bargaining negotiation impasse, which shall only go through the first level of binding dispute resolution.
- (b) The first level of binding dispute resolution for all matters related to organizing, election procedures, alleged unfair labor practices, and discharge of Eligible Employees shall be an appeal to a designated tribal forum such as a Tribal Council, Business Committee, or Grievance Board.

The parties agree to pursue in good faith the expeditious resolution of these matters within strict time limits. The time limits may not be extended without the agreement of both parties. In the absence of a mutually satisfactory resolution, either party may proceed to the independent binding dispute resolution set forth below. The agreed upon time limits are set forth as follows:

- (1) All matters related to organizing, election procedures and alleged unfair labor practices prior to the labor organization becoming certified as the collective bargaining representative of bargaining unit employees, shall be resolved by the designated tribal forum within thirty (30) working days.
- (2) All matters after the labor organization has become certified as the collective bargaining representative and relate specifically to impasse during negotiations, shall be resolved by the designated tribal forum within sixty (60) working days;
- (c) The second level of binding dispute resolution shall be a resolution by the Tribal Labor Panel, consisting of ten (10) arbitrators appointed by mutual selection of the parties which panel shall serve all tribes that have adopted this ordinance. The Tribal Labor Panel shall have authority to hire staff and take other actions necessary to conduct elections, determine units, determine scope of negotiations, hold hearings, subpoena witnesses, take testimony, and conduct all other activities needed to fulfill its obligations under this Tribal Labor Relations Ordinance.
  - (1) Each member of the Tribal Labor Panel shall have relevant experience in federal labor law and/or federal Indian law with

preference given to those with experience in both. Names of individuals may be provided by such sources as, but not limited to, Indian Dispute Services, Federal Mediation and Conciliation Service, and the American Academy of Arbitrators.

- (2) Unless either party objects, one arbitrator from the Tribal Labor Panel will render a binding decision on the dispute under the Ordinance. If either party objects, the dispute will be decided by a three-member panel of the Tribal Labor Panel, which will render a binding decision. In the event there is one arbitrator, five (5) Tribal Labor Panel names shall be submitted to the parties and each party may strike no more than two (2) names. In the event there is a three (3) member panel, seven (7) Tribal Labor Panel names shall be submitted to the parties and each party may strike no more than two (2) names. A coin toss shall determine which party may strike the first name. The arbitrator will generally follow the American Arbitration Association's procedural rules relating to labor dispute resolution. The arbitrator or panel must render a written, binding decision that complies in all respects with the provisions of this Ordinance.
- (d) Under the third level of binding dispute resolution, either party may seek a motion to compel arbitration or a motion to confirm an arbitration award in Tribal Court, which may be appealed to federal court. If the Tribal Court does not render its decision within 90 days, or in the event there is no Tribal Court, the matter may proceed directly to federal court. In the event the federal court declines jurisdiction, the Tribe agrees to a limited waiver of its sovereign immunity for the sole purpose of compelling arbitration or confirming an arbitration award issued pursuant to the Ordinance in the appropriate state superior court. The parties are free to put at issue whether or not the arbitration award exceeds the authority of the Tribal Labor Panel.

## **EXHIBIT E**

### **Map and Description of Proposed Class III Gaming Site**

Real Property in the unincorporated area of the County of Madera, State of California, described as follows:

Parcel No. 1: APN: 033-030-010 thru 015 and 017.

Parcels 1, 2, 3, 4, 5, 6, and 8 of Parcel Map 3426 in the unincorporated area of the County of Madera, State of California, as per map recorded September 7, 1995, in Book 44, Pages 15 and 16 of Parcel Maps, in the office of the County Recorder of said county.



**TRIBAL-STATE COMPACT  
BETWEEN  
THE STATE OF CALIFORNIA  
AND THE  
NORTH FORK RANCHERIA OF MONO INDIANS  
OF CALIFORNIA**

**APPENDIX A  
MINIMUM INTERNAL CONTROL  
STANDARDS**

**April 2008**

# **APPENDIX A**

## **MINIMUM INTERNAL CONTROL STANDARDS**

**(BASED ON CODE OF FEDERAL REGULATIONS (CFR) PART 542)**

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## **APPENDIX A**

### **MINIMUM INTERNAL CONTROL STANDARDS**

Compliance with Requirements of this Appendix. The following minimum internal control standards shall apply to all Tribal Gaming Activities, Gaming Facilities and Gaming Operations; however, this Appendix is not applicable to any activities not expressly permitted in the Compact. In addition, should the terms in this Appendix be inconsistent with the Compact, the terms in the Compact shall prevail.

#### **§ 542.1 What does this part cover?**

This part establishes the minimum internal control standards for gaming operations on Indian land.

#### **§ 542.2 What are the definitions for this part?**

The definitions in this section shall apply to all sections of this part unless otherwise noted.

*Account access card* means an instrument used to access customer accounts for wagering at a gaming machine. Account access cards are used in connection with a computerized account database. Account access cards are not "smart cards."

*Accountability* means all items of cash, chips, coins, tokens, plaques, receivables, and customer deposits constituting the total amount for which the bankroll custodian is responsible at a given time.

*Accumulated credit payout* means credit earned in a gaming device that is paid to a customer manually in lieu of a gaming device payout.

*Actual hold percentage* means the percentage calculated by dividing the win by the drop or coin-in (number of credits wagered). Can be calculated for individual banking or percentage card games or gaming devices, or type of banking or percentage card games or gaming devices, on a per day or cumulative basis.

*Ante* means a player's initial wager or predetermined contribution to the pot before the dealing of the first hand.

*Banking card games* means games played with cards that are banked by the house whereby the house pays all winning bets and collects all losing bets.

*Betting station* means the area designated in a pari-mutuel area that accepts wagers and pays winning bets.

*Betting ticket* means a printed, serially numbered form used to record the event upon which a wager is made, the amount and date of the wager, and sometimes the line or spread (odds).



*Bill acceptor* means the device that accepts and reads cash by denomination in order to accurately register customer credits.

*Bill acceptor canister* means the box attached to the bill acceptor used to contain cash received by bill acceptors.

*Bill acceptor canister release key* means the key used to release the bill acceptor canister from the bill acceptor device.

*Bill acceptor canister storage rack key* means the key used to access the storage rack where bill acceptor canisters are secured.

*Bill acceptor drop* means cash contained in bill acceptor canisters.

*Bill-in meter* means a meter included on a gaming device accepting cash that tracks the number of bills put in the gaming device.

*Boxperson* means the first-level supervisor who is responsible for directly participating in and supervising the operation and conduct of any allowable banking card game based upon craps not using dice.

*Breakage* means the difference between actual bet amounts paid out by a racetrack to bettors and amounts won due to bet payments being rounded up or down. For example, a winning bet that should pay \$4.25 may be actually paid at \$4.20 due to rounding.

*Cage* means a secure work area within the gaming operation for cashiers and a storage area for the gaming operation bankroll.

*Cage accountability form* means an itemized list of the components that make up the cage accountability.

*Cage credit* means advances in the form of cash or gaming chips made to customers at the cage. Documented by the players signing an IOU or a marker similar to a counter check.

*Cage marker form* means a document, signed by the customer, evidencing an extension of credit at the cage to the customer by the gaming operation.

*Calibration module* means the section of a weigh scale used to set the scale to a specific amount or number of coins to be counted.

*Call bets* means a wager made without cash or chips, reserved for a known customer and includes marked bets (which are supplemental bets made during a hand of play). For the purpose of settling a call bet, a hand of play in a banking card game based upon craps not using dice is defined as a natural winner (e.g., seven or eleven on the come-out deal), a natural loser (e.g., a two, three or twelve on the come-out deal), a seven-out, or the player making his point, whichever comes first.

*Cash-out ticket* means an instrument of value generated by a gaming device representing a cash amount owed to a customer at a specific gaming device. This instrument may be wagered at other gaming devices by depositing the cash-out ticket in the gaming device bill acceptor.

*Chips* means cash substitutes, in various denominations, issued by a gaming operation and used for wagering.

*Coin-in meter* means the meter that displays the total amount wagered in a gaming device that includes coins-in and credits played.

*Coin meter count machine* means a device used in a coin room to count coin.

*Coin room* means an area where coins and tokens are stored.

*Coin room inventory* means coins and tokens stored in the coin room that are generally used for gaming device department operation.

*Commission* means the National Indian Gaming Commission (NIGC).

*Complimentary* means a service or item provided at no cost, or at a reduced cost, to a customer.

*Count* means the total funds counted for a particular game, gaming device, shift, or other period.

*Count room* means a room where the coin and cash drop from gaming devices, banking and percentage card games, or other games are transported to and counted.

*Count team* means personnel that perform either the count of the gaming device drop and/or the banking or percentage card game drop.

*Counter check* means a form provided by the gaming operation for the customer to use in lieu of a personal check.

*Credit* means the right granted by a gaming operation to a customer to defer payment of debt or to incur debt and defer its payment.

*Credit limit* means the maximum dollar amount of credit assigned to a customer by the gaming operation.

*Credit slip* means a form used to record either:

- (1) The return of chips from a banking or percentage card game table to the cage; or
- (2) The transfer of IOUs, markers, or negotiable checks from a banking or percentage card game table to a cage or bankroll.

*Customer deposits* means the amounts placed with a cage cashier by customers for the customers' use at a future time.

*Dealer* means an employee who operates a game, individually or as a part of a crew, administering house rules and making payoffs.

*Dedicated camera* means a video camera required to continuously record a specific activity.

*Drop (for gaming devices)* means the total amount of cash, cash-out tickets, coupons, coins, and tokens removed from drop buckets and/or bill acceptor canisters.

*Drop (for banking and percentage card games)* means the total amount of cash, chips, and tokens removed from drop boxes, plus the amount of credit issued at the banking and percentage card game tables.

*Drop box* means a locked container affixed to the banking or percentage card game table into which the drop is placed. The game type, table number, and shift are indicated on the box.

*Drop box contents keys* means the key used to open drop boxes.

*Drop box release keys* means the key used to release drop boxes from banking and percentage card game tables.

*Drop box storage rack keys* means the key used to access the storage rack where drop boxes are secured.

*Drop bucket* means a container located in the drop cabinet (or in a secured portion of the gaming device in coinless/cashless configurations) for the purpose of collecting coins, tokens, cash-out tickets, and coupons from the gaming device.

*Drop cabinet* means the wooden or metal base of the gaming device that contains the gaming device drop bucket.

*Drop period* means the period of time that occurs between sequential drops.

*Earned and unearned take* means race bets taken on present and future race events. Earned take means bets received on current or present events. Unearned take means bets taken on future race events.

*EPROM* means erasable programmable read-only memory or other equivalent game software media.

*Fill* means a transaction whereby a supply of chips, coins, or tokens is transferred from a bankroll to a banking or percentage card game or gaming device.

*Fill slip* means a document evidencing a fill.

*Future wagers* means bets on races to be run in the future (e.g., Kentucky Derby).

*Game server* means an electronic selection device, utilizing a random number generator.

*Gaming device* means a gaming device as defined in the Compact.

*Gaming device analysis report* means a report prepared that compares theoretical to actual hold by a gaming device on a monthly or other periodic basis.

*Gaming device booths and change banks* means a booth or small cage in the gaming device area used to provide change to players, store change aprons and extra coin, and account for jackpot and other payouts.

*Gaming device count* means the total amount of coins, tokens, and cash removed from a gaming device. The amount counted is entered on the Gaming Device Count Sheet and is considered the drop. Also, the procedure of counting the coins, tokens, and cash or the process of verifying gaming device coin and token inventory.

*Gaming device pay table* means the reel strip combinations illustrated on the face of the gaming device that can identify payouts of designated coin amounts.

*Gaming operation accounts receivable (for gaming operation credit)* means credit extended to gaming operation customers in the form of markers, returned checks, or other credit instruments that have not been repaid.

*Gross gaming revenue* means annual total amount of cash wagered on class II and class III games and admission fees (including table or card fees), less any amounts paid out as prizes or paid for prizes awarded.

*Hold* means the relationship of win to coin-in for gaming devices and win to drop for banking and percentage card games.

*Hub* means the person or entity that is licensed to provide the operator of a pari-mutuel wagering operation information related to horse racing that is used to determine winners of races or payoffs on wagers accepted by the pari-mutuel wagering operation.

*Internal audit* means persons who perform an audit function of a gaming operation that are independent of the department subject to audit. Independence is obtained through the organizational reporting relationship, as the internal audit department shall not report to management of the gaming operation. Internal audit activities should be conducted in a manner that permits objective evaluation of areas examined. Internal audit personnel may provide audit coverage to more than one (1) operation within a Tribe's gaming operation holdings.

*Issue slip* means a copy of a credit instrument that is retained for numerical sequence control purposes.

*Jackpot payout* means the portion of a jackpot paid by gaming device personnel. The amount is usually determined as the difference between the total posted jackpot amount and the coins paid out by the gaming device. May also be the total amount of the jackpot.

*Lammer button* means a type of chip that is placed on a banking or percentage card game table to indicate that the amount of chips designated thereon has been given to the customer for wagering on credit before completion of the credit instrument.

*Marker* means a document, signed by the customer, evidencing an extension of credit to him by the gaming operation.

*Marker credit play* means that players are allowed to purchase chips using credit in the form of a marker.

*Marker inventory form* means a form maintained at banking and percentage card games or in the gaming operation pit that are used to track marker inventories at the individual table or pit.

*Marker transfer form* means a form used to document transfers of markers from the pit to the cage.

*Master credit record* means a form to record the date, time, shift, game, table, amount of credit given, and the signatures or initials of the persons extending the credit.

*Master game program number* means the game program number listed on a gaming device EPROM.

*Master game sheet* means a form used to record, by shift and day, each banking and percentage card game's winnings and losses. This form reflects the opening and closing table inventories, the fills and credits, and the drop and win.

*Mechanical coin counter* means a device used to count coins that may be used in addition to or in lieu of a coin weigh scale.

*Meter* means an electronic (soft) or mechanical (hard) apparatus in a gaming device. May record the number of coins wagered, the number of coins dropped, the number of times the handle was pulled, or the number of coins paid out to winning players.

*MICS* means minimum internal control standards in this part 542.

*Motion activated dedicated camera* means a video camera that, upon its detection of activity or motion in a specific area, begins to record the activity or area.

*Multi-game gaming device* means a gaming device that includes more than one (1) type of game option.

*On-line gaming device monitoring system* means a system used by a gaming operation to monitor gaming device meter readings and/or other activities on an on-line basis.

*Order for credit* means a form that is used to request the transfer of chips or markers from a banking or percentage card game table to the cage. The order precedes the actual transfer transaction that is documented on a credit slip.

*Par percentage* means the percentage of each dollar wagered that the house wins (i.e., gaming operation advantage).

*Par sheet* means a specification sheet for a gaming device that provides gaming device hold percentage, model number, hit frequency, reel combination, number of reels, number of coins that can be accepted, and reel strip listing.

*Pari-mutuel wagering* means a system of wagering on horse races, jai-alai, greyhound, and harness racing, where the winners divide the total amount wagered, net of commissions and operating expenses, proportionate to the individual amount wagered.

*Payment slip* means that part of a marker form on which customer payments are recorded.

*Payout* means a transaction associated with a winning event.

*Percentage card games* means a card game in which the operator has no interest in the game's outcome but takes a percentage of all amounts wagered or won.

*PIN* means the personal identification number used to access a player's account.

*Pit podium* means a stand located in the middle of the banking or percentage card game tables used by gaming operation supervisory personnel as a workspace and a record storage area.

*Pit supervisor* means the employee who supervises all games in a pit.

*Player tracking system* means a system typically used in gaming device departments that can record the gaming device play of individual customers.

*Post time* means the time when a pari-mutuel track stops accepting bets in accordance with rules and regulations of the applicable jurisdiction.

*Primary and secondary jackpots* means promotional pools offered at certain banking or percentage card games that can be won in addition to the primary pot.

*Progressive gaming device* means a gaming device, with a payoff indicator, in which the payoff increases as it is played (i.e., deferred payout). The payoff amount is accumulated, displayed on a gaming device, and will remain until a player lines up the jackpot symbols that result in the progressive amount being paid.

*Progressive jackpot* means deferred payout from a progressive gaming device.

*Progressive banking or percentage card game* means banking or percentage card games that offer progressive jackpots.

*Promotional payout* means merchandise or awards given to players by the gaming operation based on a wagering activity.

*Random number generator* means a device that generates numbers in the absence of a pattern. Commonly used in gaming devices to generate game outcome.

*Reel symbols* means symbols listed on reel strips of gaming devices.

*Rim credit* means extensions of credit that are not evidenced by the immediate preparation of a marker and does not include call bets.

*Runner* means a gaming employee who transports chips/cash to or from a banking or percentage card game table and a cashier.

*SAM* means a screen-automated machine used to accept pari-mutuel wagers. SAMs also pay winning tickets in the form of a voucher, which is redeemable for cash.

*Shift* means an eight-hour period, unless otherwise approved by the Tribal gaming agency, not to exceed twenty-four (24) hours.

*Shill* means an employee financed by the house and acting as a player for the purpose of starting or maintaining a sufficient number of players in a game.

*Short pay* means a payoff from a gaming device that is less than the listed amount.

*Soft count* means the count of the contents in a drop box or a bill acceptor canister.

*State gaming agency* means "State Gaming Agency," as defined in the Compact.

*Statistical drop* means total amount of money, chips and tokens contained in the drop boxes, plus pit credit issued, minus pit credit payments in cash in the pit.

*Statistical win* means closing bankroll, plus credit slips for cash, chips or tokens returned to the cage, plus drop, minus opening bankroll, minus fills to the banking or percentage card game table, plus marker credits.

*Sufficient clarity* means use of monitoring and recording at a minimum of 20 frames per second. Multiplexer tape recordings are insufficient to satisfy the requirement of sufficient clarity.

*Surveillance room* means a secure location(s) in a gaming operation used primarily for casino surveillance.

*Surveillance system* means a system of video cameras, monitors, recorders, video printers, switches, selectors, and other ancillary equipment used for casino surveillance.

*Table inventory* means the total coins, chips, and markers at a banking or percentage card game table.

*Table inventory form* means the form used by gaming operation supervisory personnel to document the inventory of chips, coins, and tokens on a banking or percentage card game table at the beginning and ending of a shift.

*Table tray* means the container located on banking or percentage card game tables where chips, coins, or cash are stored that are used in the game.

*Take* means the same as earned and unearned take.

*Theoretical hold* means the intended hold percentage or win of an individual gaming device as computed by reference to its payout schedule and reel strip settings or EPROM.

*Theoretical hold worksheet* means a worksheet provided by the manufacturer for all gaming devices that indicate the theoretical percentages that the gaming device should hold based on adequate levels of coin-in. The worksheet also indicates the reel strip settings, number of credits that may be played, the payout schedule, the number of reels and other information descriptive of the particular type of gaming device.

*Tier A* means gaming operations with annual gross gaming revenues of more than \$1 million but not more than \$5 million.

*Tier B* means gaming operations with annual gross gaming revenues of more than \$5 million but not more than \$15 million.

*Tier C* means gaming operations with annual gross gaming revenues of more than \$15 million.

*Tokens* means a coin-like cash substitute, in various denominations, used for gambling transactions.

*Tribal gaming agency* means "Tribal Gaming Agency," as defined in the Compact.

*Vault* means a secure area within the gaming operation where tokens, checks, cash, coins, and chips are stored.

*Weigh/count* means the value of coins and tokens counted by a weigh machine.

*Weigh scale calibration module* means the device used to adjust a coin weigh scale.

*Weigh scale interface* means a communication device between the weigh scale used to calculate the amount of funds included in drop buckets and the computer system used to record the weigh data.

*Weigh tape* means the tape where weighed coin is recorded.

*Wide area progressive gaming device* means a progressive gaming device that is linked to gaming devices in other operations and play on the gaming devices affect the progressive amount. As wagers are placed, the progressive meters on all of the linked gaming devices increase.

*Win* means the net win resulting from all gaming activities.

*Win-to-write hold percentage* means win divided by write to determine hold percentage.

*Wrap* means the method of storing coins after the count process has been completed, including, but not limited to, wrapping, racking, or bagging. May also refer to the total amount or value of the counted and stored coins.

*Write* means the total amount wagered in pari-mutuel operations.

*Writer* means an employee who writes pari-mutuel tickets.

### **§ 542.3 How do I comply with this part?**

(a) *Compliance based upon tier.* (1) Tier A gaming operations must comply with §§542.1 through 542.18, and §§542.20 through 542.23.

(2) Tier B gaming operations must comply with §§542.1 through 542.18, and §§542.30 through 542.33.

(3) Tier C gaming operations must comply with §§542.1 through 542.18, and §§542.40 through 542.43.

(b) *Determination of tier.* (1) The determination of tier level shall be made based upon the individual annual gross gaming revenues at each gaming facility, as indicated within the gaming operation's audited financial statements. Gaming operations moving from one tier to another shall have nine (9) months from the date of the independent certified public accountant's audit report to achieve compliance with the requirements of the new tier.

(2) The Tribal gaming agency may extend the deadline by an additional six (6) months if written notice is provided to the State gaming agency no later than two (2) weeks before the expiration of the nine (9) month period.

(c) Reserved.

(d) Reserved.

(e) Reserved.



(f) *CPA testing.* (1) An independent certified public accountant (CPA) shall be engaged to perform "Agreed-Upon Procedures" to verify that the gaming operation is in compliance with the minimum internal control standards (MICS) set forth in this part. The CPA shall report each event and procedure discovered by or brought to the CPA's attention that the CPA believes does not satisfy the minimum standards. The "Agreed-Upon Procedures" may be performed in conjunction with the annual audit. The CPA shall report its findings to the Tribe, Tribal gaming agency, and management. The Tribe shall submit two (2) copies of the report to the State gaming agency within 120 days of the gaming operation's fiscal year end. This regulation is intended to communicate the Commission's position on the minimum agreed-upon procedures to be performed by the CPA. Throughout these regulations, the CPA's engagement and reporting are based on Statements on Standards for Attestation Engagements (SSAEs) in effect as of December 31, 2003, specifically SSAE 10 ("Agreed-Upon Procedures Engagements"). If future revisions are made to the SSAEs or new SSAEs are adopted that are applicable to this type of engagement, the CPA is to comply with any new or revised professional standards in conducting engagements pursuant to these regulations and the issuance of the agreed-upon procedures report. The CPA shall perform the "Agreed-Upon Procedures" in accordance with the following:

(i) As a prerequisite to the evaluation of the gaming operation's internal control systems, it is recommended that the CPA obtain and review an organization chart depicting segregation of functions and responsibilities, a description of the duties and responsibilities of each position shown on the organization chart, and an accurate, detailed narrative description of the gaming operation's procedures in effect that demonstrate compliance.

(ii) Complete the CPA NIGC or State gaming agency MICS Compliance checklists or other comparable testing procedures. The checklists should measure compliance on a sampling basis by performing walk-throughs, observations and substantive testing. The CPA shall complete separate checklists for each gaming revenue center, cage and credit, internal audit, surveillance, information technology and complimentary services or items. All questions on each applicable checklist should be completed. Work-paper references are suggested for all "no" responses for the results obtained during testing (unless a note in the "W/P Ref" can explain the exception).

(iii) The CPA shall perform, at a minimum, the following procedures in conjunction with the completion of the checklists:

(A) At least one (1) unannounced observation of each of the following: Gaming device coin drop, gaming device currency acceptor drop, banking or percentage card games drop, gaming device coin count, gaming device currency acceptor count, and banking or percentage card games count. The AICPA's "Audits of Casinos" Audit and Accounting Guide states that "observations of operations in the casino cage and count room should not be announced in advance \* \* \*". For purposes of these procedures, "unannounced" means that no officers, directors, or employees are given advance information regarding the dates or times of such observations. The independent accountant should make arrangements with the gaming operation and Tribal gaming agency to ensure proper identification of the CPA's personnel and to provide for their prompt access to the count rooms.

(1) The gaming device coin count observation would include a weigh scale test of all denominations using pre-counted coin. The count would be in process when these tests are performed, and would be conducted prior to the commencement of any other walk-through procedures. For computerized weigh scales, the test can be conducted at the conclusion of the count, but before the final totals are generated.

(2) The checklists should provide for drop/count observations, inclusive of hard drop/count, soft drop/count and currency acceptor drop/count. The count room would not be entered until the count is in process and the CPA would not leave the room until the monies have been counted and verified to the count sheet by the CPA and accepted into accountability. If the drop teams are

unaware of the drop observations and the count observations would be unexpected, the hard count and soft count rooms may be entered simultaneously. Additionally, if the gaming device currency acceptor count begins immediately after the banking or percentage card games count in the same location, by the same count team, and using the same equipment, the currency acceptor count observation can be conducted on the same day as the banking or percentage card games count observation, provided the CPA remains until monies are transferred to the vault/cashier.

(B) Observations of the gaming operation's employees as they perform their duties.

(C) Interviews with the gaming operation's employees who perform the relevant procedures.

(D) Compliance testing of various documents relevant to the procedures. The scope of such testing should be indicated on the checklist where applicable.

(E) For new gaming operations that have been in operation for three (3) months or less at the end of their business year, performance of this regulation, section 542.3(f), is not required for the partial period.

(2) Alternatively, at the discretion of the Tribe, the Tribe may engage an independent certified public accountant (CPA) to perform the testing, observations and procedures reflected in paragraphs (f)(1)(i), (ii), and (iii) of this section utilizing the Tribal internal control standards adopted by the Tribal gaming agency. Accordingly, the CPA will verify compliance by the gaming operation with the Tribal internal control standards. Should the Tribe elect this alternative, as a prerequisite, the CPA will perform the following:

(i) The CPA shall compare the Tribal internal control standards to the MICS to ascertain whether the criteria set forth in the MICS are adequately addressed.

(ii) The CPA may utilize personnel of the Tribal gaming agency to cross-reference the Tribal internal control standards to the MICS, provided the CPA performs a review of the Tribal gaming agency personnel's work and assumes complete responsibility for the proper completion of the work product.

(iii) The CPA shall report each procedure discovered by or brought to the CPA's attention that the CPA believes does not satisfy paragraph (f)(2)(i) of this section.

(3) *Reliance on Internal Auditors.* (i) The CPA may rely on the work of an internal auditor, to the extent allowed by the professional standards, for the performance of the recommended procedures specified in paragraphs (f)(1)(iii)(B), (C), and (D) of this section, and for the completion of the checklists as they relate to the procedures covered therein provided that the internal audit department can demonstrate to the satisfaction of the CPA that the requirements contained within §542.22, 542.32, or 542.42, as applicable, have been satisfied.

(ii) Agreed-upon procedures are to be performed by the CPA to determine that the internal audit procedures performed for a past 12-month period (includes two 6-month periods) encompassing a portion or all of the most recent business year has been properly completed. The CPA will apply the following Agreed-Upon Procedures to the gaming operation's written assertion:

(A) Obtain internal audit department work-papers completed for a 12-month period (includes two 6-month periods) encompassing a portion or all of the most recent business year and determine whether the CPA NIGC MICS Compliance Checklists or other comparable testing procedures

were included in the internal audit work-papers and all steps described in the checklists were initialed or signed by an internal audit representative.

(B) For the internal audit work-papers obtained in paragraph (f)(3)(ii)(A) of this section, on a sample basis, reperform the procedures included in CPA NIGC MICS Compliance Checklists or other comparable testing procedures prepared by internal audit and determine if all instances of noncompliance noted in the sample were documented as such by internal audit. The CPA NIGC MICS Compliance Checklists or other comparable testing procedures for the applicable Drop and Count procedures are not included in the sample reperformance of procedures because the CPA is required to perform the drop and count observations as required under paragraph (f)(1)(iii)(A) of this section of the Agreed-Upon Procedures. The CPA's sample should comprise a minimum of three (3) percent of the procedures required in each CPA NIGC MICS Compliance Checklist or other comparable testing procedures for the gaming device and banking and percentage card game departments and five (5) percent for the other departments completed by internal audit in compliance with the internal audit MICS. The reperformance of procedures is performed as follows:

(1) For inquiries, the CPA should either speak with the same individual or an individual of the same job position as the internal auditor did for the procedure indicated in their checklist.

(2) For observations, the CPA should observe the same process as the internal auditor did for the procedure as indicated in their checklist.

(3) For document testing, the CPA should look at the same original document as tested by the internal auditor for the procedure as indicated in their checklist. The CPA need only retest the minimum sample size required in the checklist.

(C) The CPA is to investigate and resolve any differences between their reperformance results and the internal audit results.

(D) Documentation is maintained for five (5) years by the CPA indicating the procedures reperfomed along with the results.

(E) When performing the procedures for paragraph (f)(3)(ii)(B) of this section in subsequent years, the CPA must select a different sample so that the CPA will reperform substantially all of the procedures after several years.

(F) Any additional procedures performed at the request of the Commission, the Tribal gaming agency, State gaming agency, or management should be included in the Agreed-Upon Procedures report transmitted to the State gaming agency.

(4) *Report Format.* (i) The NIGC has concluded that the performance of these procedures is an attestation engagement in which the CPA applies such Agreed-Upon Procedures to the gaming operation's assertion that it is in compliance with the MICS and, if applicable under paragraph (f)(2) of this section, the Tribal internal control standards provide a level of control that equals or exceeds that of the MICS. Accordingly, the Statements on Standards for Attestation Engagements (SSAE's), specifically SSAE 10, issued by the Auditing Standards Board is currently applicable. SSAE 10 provides current, pertinent guidance regarding agreed-upon procedure engagements, and the sample report formats included within those standards should be used, as appropriate, in the preparation of the CPA's agreed-upon procedures report. If future revisions are made to this standard or new SSAEs are adopted that are applicable to this type of engagement, the CPA is to comply with any revised professional standards in issuing their agreed upon procedures report. The Commission or State gaming agency will provide an

Example Report and Letter Formats upon written request that may be used and contain all of the information discussed below:

(A) The report must describe all instances of procedural noncompliance, regardless of materiality, with the MICS, and all instances where the Tribal gaming agency's regulations do not comply with the MICS. When describing the agreed-upon procedures performed, the CPA should also indicate whether procedures performed by other individuals were utilized to substitute for the procedures required to be performed by the CPA. For each instance of noncompliance noted in the CPA's agreed-upon procedures report, the following information must be included:

(1) The citation of the applicable MICS for which the instance of noncompliance was noted.

(2) A narrative description of the noncompliance, including the number of exceptions and sample size tested.

(5) *Report Submission Requirements.* (i) The CPA shall prepare a report of the findings for the Tribe and management. The Tribe shall submit two (2) copies of the report to the State gaming agency no later than 120 days after the gaming operation's fiscal year end. This report should be provided in addition to any other reports required to be submitted to the State gaming agency.

(ii) The CPA should maintain the work-papers supporting the report for a minimum of five (5) years. Digital storage is acceptable. The Commission or State gaming agency may request access to these work-papers, through the Tribe.

(6) *CPA NIGC MICS Compliance Checklists.* In connection with the CPA testing pursuant to this section and as referenced therein, the Commission or State gaming agency will provide CPA MICS Compliance Checklists upon written request.

**§ 542.4 Reserved.**

**§ 542.5 Reserved.**

**§ 542.6 Reserved**

(a) *Small gaming operations.* This part shall not apply to small gaming operations provided that:

(1) The Tribal gaming regulatory authority permits the operation to be exempt from this part;

(2) The annual gross gaming revenue of the operation does not exceed \$1 million; and

(3) The Tribal gaming regulatory authority develops and the operation complies with alternate procedures that:

(i) Protect the integrity of games offered; and

(ii) Safeguard the assets used in connection with the operation.

(b) *Charitable gaming operations.* This part shall not apply to charitable gaming operations provided that:

(1) All proceeds are for the benefit of a charitable organization;

(2) The Tribal gaming regulatory authority permits the charitable organization to be exempt from this part;

(3) The charitable gaming operation is operated wholly by the charitable organization's employees or volunteers;

(4) The annual gross gaming revenue of the charitable gaming operation does not exceed \$100,000;

(i) Where the annual gross gaming revenues of the charitable gaming operation exceed \$100,000, but are less than \$1 million, paragraph (a) of this section shall also apply; and

(ii) [Reserved]

(5) The Tribal gaming regulatory authority develops and the charitable gaming operation complies with alternate procedures that:

(i) Protect the integrity of the games offered; and

(ii) Safeguard the assets used in connection with the gaming operation.

(c) Independent operators. Nothing in this section shall exempt gaming operations conducted by independent operators for the benefit of a charitable organization.

**§ 542.7 Reserved.**

**§ 542.8 Reserved.**

**§ 542.9 Reserved.**

**§ 542.10 Reserved.**

**§ 542.11 What are the minimum internal control standards for pari-mutuel wagering?**

(a) *Exemptions.* (1) The requirements of this section shall not apply to gaming operations who house pari-mutuel wagering operations conducted entirely by a state licensed simulcast service provider pursuant to an approved tribal-state compact if:

(i) The simulcast service provider utilizes its own employees for all aspects of the pari-mutuel wagering operation;

(ii) The gaming operation posts, in a location visible to the public, that the simulcast service provider and its employees are wholly responsible for the conduct of pari-mutuel wagering offered at that location;

(iii) The gaming operation receives a predetermined fee from the simulcast service provider; and

(iv) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with standards that ensure that the gaming operation receives, from the racetrack, its contractually guaranteed percentage of the handle.

(2) Gaming operations that contract directly with a state regulated racetrack as a simulcast service provider, but whose on-site pari-mutuel operations are conducted wholly or in part by tribal gaming operation employees, shall not be required to comply with paragraphs (h)(5) thru (h)(9) of this section.

(i) If any standard contained within this section conflicts with state law, a tribal-state compact, or a contract, then the gaming operation shall document the basis for noncompliance and shall maintain such documentation for inspection by the Tribal gaming agency, State gaming agency, and the Commission.

(ii) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with standards that ensure that the gaming operation receives, from the racetrack, its contractually guaranteed percentage of the handle.

(b) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(c) *Betting ticket and equipment standards.* (1) All pari-mutuel wagers shall be transacted through the pari-mutuel satellite system. In case of computer failure between the pari-mutuel book and the hub, no tickets shall be manually written.

(2) Whenever a betting station is opened for wagering or turned over to a new writer/cashier, the writer/cashier shall sign on and the computer shall document gaming operation name (or identification number), station number, the writer/cashier identifier, and the date and time.

(3) A betting ticket shall consist of at least two (2) parts:

(i) An original, which shall be transacted and issued through a printer and given to the customer; and

(ii) A copy that shall be recorded concurrently with the generation of the original ticket either on paper or other storage media (e.g., tape or diskette).

(4) Upon accepting a wager, the betting ticket that is created shall contain the following:

(i) A unique transaction identifier;

(ii) Gaming operation name (or identification number) and station number;

(iii) Race track, race number, horse identification or event identification, as applicable;

(iv) Type of bet(s), each bet amount, total number of bets, and total take; and

(v) Date and time.

(5) All tickets shall be considered final at post time.

(6) If a gaming operation voids a betting ticket written prior to post time, it shall be immediately entered into the system.

(7) Future wagers shall be accepted and processed in the same manner as regular wagers.

(d) *Payout standards.* (1) Prior to making payment on a ticket, the writer/cashier shall input the ticket for verification and payment authorization.

(2) The computer shall be incapable of authorizing payment on a ticket that has been previously paid, a voided ticket, a losing ticket, or an unissued ticket.

(e) *Checkout standards.* (1) Whenever the betting station is closed or the writer/cashier is replaced, the writer/cashier shall sign off and the computer shall document the gaming operation name (or identification number), station number, the writer/cashier identifier, the date and time, and cash balance.

(2) For each writer/cashier station a summary report shall be completed at the conclusion of each shift including:

(i) Computation of cash turned in for the shift; and

(ii) Signature of two (2) employees who have verified the cash turned in for the shift. Unverified transfers of cash and/or cash equivalents are prohibited.

(f) *Employee wagering.* Pari-mutuel employees shall be prohibited from wagering on race events while on duty, including during break periods.

(g) *Computer reports standards.* (1) Adequate documentation of all pertinent pari-mutuel information shall be generated by the computer system.

(2) This documentation shall be restricted to authorized personnel.

(3) The documentation shall be created for each day's operation and shall include, but is not limited to:

(i) Unique transaction identifier;

(ii) Date/time of transaction;

(iii) Type of wager;

(iv) Animal identification or event identification;

(v) Amount of wagers (by ticket, writer/SAM, track/event, and total);

(vi) Amount of payouts (by ticket, writer/SAM, track/event, and total);

(vii) Tickets refunded (by ticket, writer, track/event, and total);

(viii) Unpaid winners/vouchers ("outs") (by ticket/voucher, track/event, and total);

(ix) Voucher sales/payments (by ticket, writer/SAM, and track/event);

(x) Voids (by ticket, writer, and total);

(xi) Future wagers (by ticket, date of event, total by day, and total at the time of revenue recognition);

- (xii) Results (winners and payout data);
- (xiii) Breakage data (by race and track/event);
- (xiv) Commission data (by race and track/event); and
- (xv) Purged data (by ticket and total).

(4) The system shall generate the following reports:

(i) A reconciliation report that summarizes totals by track/event, including write, the day's winning ticket total, total commission and breakage due the gaming operation, and net funds transferred to or from the gaming operation's bank account;

(ii) An exception report that contains a listing of all system functions and overrides not involved in the actual writing or cashing of tickets, including sign-on/off, voids, and manually input paid tickets; and

(iii) A purged ticket report that contains a listing of the unique transaction identifier(s), description, ticket cost and value, and date purged.

(h) *Accounting and auditing functions.* A gaming operation shall perform the following accounting and auditing functions:

(1) The parimutuel audit shall be conducted by personnel independent of the parimutuel operation.

(2) Documentation shall be maintained evidencing the performance of all parimutuel accounting and auditing procedures.

(3) An accounting employee shall review handle, commission, and breakage for each day's play and recalculate the net amount due to or from the systems operator on a weekly basis.

(4) The accounting employee shall verify actual cash/cash equivalents turned in to the system's summary report for each cashier's drawer (Beginning balance, (+) fills (draws), (+) net write (sold less voids), (-) payouts (net of IRS withholding), (-) cashbacks (pays), (=) cash turn-in).

(5) An accounting employee shall produce a gross revenue recap report to calculate gross revenue for each day's play and for a month-to-date basis, including the following totals:

- (i) Commission;
- (ii) Positive breakage;
- (iii) Negative breakage;
- (iv) Track/event fees;
- (v) Track/event fee rebates; and
- (vi) Purged tickets.



(6) All winning tickets and vouchers shall be physically removed from the SAM's for each day's play.

(7) In the event a SAM does not balance for a day's play, the auditor shall perform the following procedures:

(i) Foot the winning tickets and vouchers deposited and trace to the totals of SAM activity produced by the system;

(ii) Foot the listing of cashed vouchers and trace to the totals produced by the system;

(iii) Review all exceptions for propriety of transactions and unusual occurrences;

(iv) Review all voids for propriety;

(v) Verify the results as produced by the system to the results provided by an independent source;

(vi) Regrade 1% of paid (cash) tickets to ensure accuracy and propriety; and

(vii) When applicable, reconcile the totals of future tickets written to the totals produced by the system for both earned and unearned take, and review the reports to ascertain that future wagers are properly included on the day of the event.

(8) At least annually, the auditor shall foot the wagers for one (1) day and trace to the total produced by the system.

(9) At least one (1) day per quarter, the auditor shall recalculate and verify the change in the unpaid winners to the total purged tickets.

**§ 542.12 What are the minimum internal control standards for banking and percentage card games?**

(a) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(b) *Standards for drop and count.* The procedures for the collection of the banking and percentage card game drop and the count thereof shall comply with §542.21, §542.31, or §542.41 (as applicable).

(c) *Fill and credit standards.* (1) Fill slips and credit slips shall be in at least triplicate form, and in a continuous, prenumbered series. Such slips shall be concurrently numbered in a form utilizing the alphabet and only in one (1) series at a time. The alphabet need not be used if the numerical series is not repeated during the business year.

(2) Unissued and issued fill/credit slips shall be safeguarded and adequate procedures shall be employed in their distribution, use, and control. Personnel from the cashier or pit departments shall have no access to the secured (control) copies of the fill/credit slips.

(3) When a fill/credit slip is voided, the cashier shall clearly mark "void" across the face of the original and first copy, the cashier and one (1) other person independent of the transactions shall

sign both the original and first copy, and shall submit them to the accounting department for retention and accountability.

(4) Fill transactions shall be authorized by pit supervisory personnel before the issuance of fill slips and transfer of chips, tokens, or cash equivalents. The fill request shall be communicated to the cage where the fill slip is prepared.

(5) At least three (3) parts of each fill slip shall be utilized as follows:

(i) One (1) part shall be transported to the pit with the fill and, after the appropriate signatures are obtained, deposited in the appropriate banking or percentage card game drop box;

(ii) One (1) part shall be retained in the cage for reconciliation of the cashier bank; and

(iii) For computer systems, one (1) part shall be retained in a secure manner to insure that only authorized persons may gain access to it. For manual systems, one (1) part shall be retained in a secure manner in a continuous unbroken form.

(6) For Tier C gaming operations, the part of the fill slip that is placed in the appropriate banking or percentage card game drop box shall be of a different color for fills than for credits, unless the type of transaction is clearly distinguishable in another manner (checking a box on the form shall not be a clearly distinguishable indicator).

(7) The table number, shift, and amount of fill by denomination and in total shall be noted on all copies of the fill slip. The correct date and time shall be indicated on at least two (2) copies.

(8) All fills shall be carried from the cashier's cage by a person who is independent of the cage or pit.

(9) The fill slip shall be signed by at least the following persons (as an indication that each has counted the amount of the fill and the amount agrees with the fill slip):

(i) Cashier who prepared the fill slip and issued the chips, tokens, or cash equivalent;

(ii) Runner who carried the chips, tokens, or cash equivalents from the cage to the pit;

(iii) Dealer or boxperson who received the chips, tokens, or cash equivalents at the gaming table; and

(iv) Pit supervisory personnel who supervised the fill transaction.

(10) Fills shall be broken down and verified by the dealer or boxperson in public view before the dealer or boxperson places the fill in the table tray.

(11) A copy of the fill slip shall then be deposited into the drop box on the table by the dealer, where it shall appear in the soft count room with the cash receipts for the shift.

(12) Table credit transactions shall be authorized by a pit supervisor before the issuance of credit slips and transfer of chips, tokens, or other cash equivalent. The credit request shall be communicated to the cage where the credit slip is prepared.

(13) At least three (3) parts of each credit slip shall be utilized as follows:

(i) Two (2) parts of the credit slip shall be transported by the runner to the pit. After signatures of the runner, dealer, and pit supervisor are obtained, one (1) copy shall be deposited in the appropriate banking or percentage card game drop box and the original shall accompany transport of the chips, tokens, markers, or cash equivalents from the pit to the cage for verification and signature of the cashier.

(ii) For computer systems, one (1) part shall be retained in a secure manner to insure that only authorized persons may gain access to it. For manual systems, one (1) part shall be retained in a secure manner in a continuous unbroken form.

(14) The table number, shift, and the amount of credit by denomination and in total shall be noted on all copies of the credit slip. The correct date and time shall be indicated on at least two (2) copies.

(15) Chips, tokens, and/or cash equivalents shall be removed from the table tray by the dealer or boxperson and shall be broken down and verified by the dealer or boxperson in public view prior to placing them in racks for transfer to the cage.

(16) All chips, tokens, and cash equivalents removed from the banking or percentage card game tables and markers removed from the pit shall be carried to the cashier's cage by a person who is independent of the cage or pit.

(17) The credit slip shall be signed by at least the following persons (as an indication that each has counted or, in the case of markers, reviewed the items transferred):

(i) Cashier who received the items transferred from the pit and prepared the credit slip;

(ii) Runner who carried the items transferred from the pit to the cage;

(iii) Dealer who had custody of the items prior to transfer to the cage; and

(iv) Pit supervisory personnel who supervised the credit transaction.

(18) The credit slip shall be inserted in the drop box by the dealer.

(19) Chips, tokens, or other cash equivalents shall be deposited on or removed from gaming tables only when accompanied by the appropriate fill/credit or marker transfer forms.

(20) Cross fills (the transfer of chips between banking or percentage card games) and even cash exchanges are prohibited in the pit.

(d) *Table inventory forms.* (1) At the close of each shift, for those table banks that were opened during that shift:

(i) The table's chip, token, coin, and marker inventory shall be counted and recorded on a table inventory form; or

(ii) If the table banks are maintained on an imprest basis, a final fill or credit shall be made to bring the bank back to par.

(2) If final fills are not made, beginning and ending inventories shall be recorded on the master game sheet for shift win calculation purposes.

(3) The accuracy of inventory forms prepared at shift end shall be verified by the outgoing pit supervisor and the dealer. Alternatively, if the dealer is not available, such verification may be provided by another pit supervisor or another supervisor from another gaming department. Verifications shall be evidenced by signature on the inventory form.

(4) If inventory forms are placed in the drop box, such action shall be performed by a person other than a pit supervisor.

(e) *Banking and percentage card games computer generated documentation standards.* (1) The computer system shall be capable of generating adequate documentation of all information recorded on the source documents and transaction detail (e.g., fill/credit slips, markers, etc.).

(2) This documentation shall be restricted to authorized personnel.

(3) The documentation shall include, at a minimum:

(i) System exception information (e.g., appropriate system parameter information, corrections, voids, etc.); and

(ii) Personnel access listing, which includes, at a minimum:

(A) Employee name or employee identification number (if applicable); and

(B) Listing of functions employees can perform or equivalent means of identifying the same.

(f) *Standards for playing cards.* (1) Playing cards shall be maintained in a secure location to prevent unauthorized access and to reduce the possibility of tampering.

(2) Used cards shall be maintained in a secure location until marked, scored, or destroyed, in a manner as approved by the Tribal gaming agency, to prevent unauthorized access and reduce the possibility of tampering.

(3) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with a reasonable time period, which shall not exceed seven (7) days, within which to mark, cancel, or destroy cards from play.

(i) This standard shall not apply where playing cards are retained for an investigation.

(4) A card control log shall be maintained that documents when cards are received on site, distributed to and returned from tables and removed from play by the gaming operation.

(g) *Plastic cards.* Notwithstanding paragraph (f) of this section, if a gaming operation uses plastic cards (not plastic-coated cards), the cards may be used for up to three (3) months if the plastic cards are routinely inspected, and washed or cleaned in a manner and time frame approved by the Tribal gaming agency.

(h) *Standards for supervision.* Pit supervisory personnel (with authority greater than those being supervised) shall provide supervision of all banking and percentage card games.

(i) *Analysis of banking and percentage card games performance standards.* (1) Records shall be maintained by day and shift indicating any single-deck blackjack games that were dealt for an entire shift.

(2) Records reflecting hold percentage by table and type of game shall be maintained by shift, by day, cumulative month-to-date, and cumulative year-to-date.

(3) This information shall be presented to and reviewed by management independent of the pit department on at least a monthly basis.

(4) The management in paragraph (i)(3) of this section shall investigate any unusual fluctuations in hold percentage with pit supervisory personnel.

(5) The results of such investigations shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(j) *Accounting/auditing standards.* (1) The accounting and auditing procedures shall be performed by personnel who are independent of the transactions being audited/accounted for.

(2) If a banking or percentage card game has the capability to determine drop (e.g., bill-in/coin-drop meters, bill acceptor, computerized record, etc.) the dollar amount of the drop shall be reconciled to the actual drop by shift.

(3) Accounting/auditing employees shall review exception reports for all computerized banking and percentage card games systems at least monthly for propriety of transactions and unusual occurrences.

(4) All noted improper transactions or unusual occurrences shall be investigated with the results documented.

(5) Evidence of banking and percentage card games auditing procedures and any follow-up performed shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(6) A daily recap shall be prepared for the day and month-to-date, which shall include the following information:

(i) Drop;

(ii) Win; and

(iii) Gross revenue.

(k) *Marker credit play.* (1) If a gaming operation allows marker credit play (exclusive of rim credit and call bets), the following standards shall apply:

(i) A marker system shall allow for credit to be both issued and repaid in the pit.

(ii) Prior to the issuance of gaming credit to a player, the employee extending the credit shall contact the cashier or other independent source to determine if the player's credit limit has been properly established and there is sufficient remaining credit available for the advance.

(iii) Proper authorization of credit extension in excess of the previously established limit shall be documented.

(iv) The amount of credit extended shall be communicated to the cage or another independent source and the amount documented within a reasonable time subsequent to each issuance.

(v) The marker form shall be prepared in at least triplicate form (triplicate form being defined as three (3) parts performing the functions delineated in the standard in paragraph (k)(1)(vi) of this section), with a preprinted or concurrently printed marker number, and utilized in numerical sequence. (This requirement shall not preclude the distribution of batches of markers to various pits.)

(vi) At least three (3) parts of each separately numbered marker form shall be utilized as follows:

(A) Original shall be maintained in the pit until settled or transferred to the cage;

(B) Payment slip shall be maintained in the pit until the marker is settled or transferred to the cage. If paid in the pit, the slip shall be inserted in the appropriate banking or percentage card game drop box. If not paid in the pit, the slip shall be transferred to the cage with the original;

(C) Issue slip shall be inserted into the appropriate banking or percentage card game drop box when credit is extended or when the player has signed the original.

(vii) When marker documentation (e.g., issue slip and payment slip) is inserted in the drop box, such action shall be performed by the dealer or boxperson at the table.

(viii) A record shall be maintained that details the following (e.g., master credit record retained at the pit podium):

(A) The signature or initials of the person(s) approving the extension of credit (unless such information is contained elsewhere for each issuance);

(B) The legible name of the person receiving the credit;

(C) The date and shift of granting the credit;

(D) The table on which the credit was extended;

(E) The amount of credit issued;

(F) The marker number;

(G) The amount of credit remaining after each issuance or the total credit available for all issuances;

(H) The amount of payment received and nature of settlement (e.g., credit slip number, cash, chips, etc.); and

(I) The signature or initials of the person receiving payment/settlement.

- (ix) The forms required in paragraphs (k)(1)(v), (vi), and (viii) of this section shall be safeguarded, and adequate procedures shall be employed to control the distribution, use, and access to these forms.
- (x) All credit extensions shall be initially evidenced by lammer buttons, which shall be displayed on the table in public view and placed there by supervisory personnel.
- (xi) Marker preparation shall be initiated and other records updated within approximately one (1) hand of play following the initial issuance of credit to the player.
- (xii) Lammer buttons shall be removed only by the dealer or boxperson employed at the table upon completion of a marker transaction.
- (xiii) The original marker shall contain at least the following information:
- (A) Marker number;
  - (B) Player's name and signature;
  - (C) Date; and
  - (D) Amount of credit issued.
- (xiv) The issue slip or stub shall include the same marker number as the original, the table number, date and time of issuance, and amount of credit issued. The issue slip or stub shall also include the signature of the person extending the credit, and the signature or initials of the dealer or boxperson at the applicable table, unless this information is included on another document verifying the issued marker.
- (xv) The payment slip shall include the same marker number as the original. When the marker is paid in full in the pit, it shall also include the table number where paid, date and time of payment, nature of settlement (cash, chips, etc.), and amount of payment. The payment slip shall also include the signature of pit supervisory personnel acknowledging payment, and the signature or initials of the dealer or boxperson receiving payment, unless this information is included on another document verifying the payment of the marker.
- (xvi) When partial payments are made in the pit, a new marker shall be completed reflecting the remaining balance and the marker number of the marker originally issued.
- (xvii) When partial payments are made in the pit, the payment slip of the marker that was originally issued shall be properly cross-referenced to the new marker number, completed with all information required by paragraph (k)(1)(xv) of this section, and inserted into the drop box.
- (xviii) The cashier's cage or another independent source shall be notified when payments (full or partial) are made in the pit so that cage records can be updated for such transactions. Notification shall be made no later than when the customer's play is completed or at shift end, whichever is earlier.
- (xix) All portions of markers, both issued and unissued, shall be safeguarded and procedures shall be employed to control the distribution, use and access to the forms.

(xx) An investigation shall be performed to determine the cause and responsibility for loss whenever marker forms, or any part thereof, are missing. These investigations shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(xxi) When markers are transferred to the cage, marker transfer forms or marker credit slips (or similar documentation) shall be utilized and such documents shall include, at a minimum, the date, time, shift, marker number(s), table number(s), amount of each marker, the total amount transferred, signature of pit supervisory personnel releasing instruments from the pit, and the signature of cashier verifying receipt of instruments at the cage.

(xxii) All markers shall be transferred to the cage within twenty-four (24) hours of issuance.

(xxiii) Markers shall be transported to the cashier's cage by a person who is independent of the marker issuance and payment functions (pit clerks may perform this function).

(l) *Name credit instruments accepted in the pit.* (1) For the purposes of this paragraph, name credit instruments means personal checks, payroll checks, counter checks, hold checks, traveler's checks, or other similar instruments that are accepted in the pit as a form of credit issuance to a player with an approved credit limit.

(2) The following standards shall apply if name credit instruments are accepted in the pit:

(i) A name credit system shall allow for the issuance of credit without using markers;

(ii) Prior to accepting a name credit instrument, the employee extending the credit shall contact the cashier or another independent source to determine if the player's credit limit has been properly established and the remaining credit available is sufficient for the advance;

(iii) All name credit instruments shall be transferred to the cashier's cage (utilizing a two-part order for credit) immediately following the acceptance of the instrument and issuance of chips (if name credit instruments are transported accompanied by a credit slip, an order for credit is not required);

(iv) The order for credit (if applicable) and the credit slip shall include the customer's name, amount of the credit instrument, the date, time, shift, table number, signature of pit supervisory personnel releasing instrument from pit, and the signature of the cashier verifying receipt of instrument at the cage;

(v) The procedures for transacting table credits at standards in paragraphs (c)(12) through (19) of this section shall be strictly adhered to; and

(vi) The acceptance of payments in the pit for name credit instruments shall be prohibited.

(m) *Call bets.* (1) The following standards shall apply if call bets are accepted in the pit:

(i) A call bet shall be evidenced by the placement of a lammer button, chips, or other identifiable designation in an amount equal to that of the wager in a specific location on the table;

(ii) The placement of the lammer button, chips, or other identifiable designation shall be performed by supervisory/boxperson personnel. The placement may be performed by a dealer only if the supervisor physically observes and gives specific authorization;



(iii) The call bet shall be settled at the end of each hand of play by the preparation of a marker, repayment of the credit extended, or the payoff of the winning wager. Call bets extending beyond one (1) hand of play shall be prohibited; and

(iv) The removal of the lammer button, chips, or other identifiable designation shall be performed by the dealer/boxperson upon completion of the call bet transaction.

(n) *Rim credit.* (1) The following standards shall apply if rim credit is extended in the pit:

(i) Rim credit shall be evidenced by the issuance of chips to be placed in a neutral zone on the table and then extended to the customer for the customer to wager, or to the dealer to wager for the customer, and by the placement of a lammer button or other identifiable designation in an amount equal to that of the chips extended; and

(ii) Rim credit shall be recorded on player cards, or similarly used documents, which shall be:

(A) Prenumbered or concurrently numbered and accounted for by a department independent of the pit;

(B) For all extensions and subsequent repayments, evidenced by the initials or signatures of a supervisor and the dealer attesting to the validity of each credit extension and repayment;

(C) An indication of the settlement method (e.g., serial number of marker issued, chips, cash);

(D) Settled no later than when the customer leaves the table at which the card is prepared;

(E) Transferred to the accounting department on a daily basis; and

(F) Reconciled with other forms utilized to control the issuance of pit credit (e.g., master credit records, table cards).

(o) *Foreign currency.* (l) The following standards shall apply if foreign currency is accepted in the pit:

(i) Foreign currency transactions shall be authorized by a pit supervisor/boxperson who completes a foreign currency exchange form before the exchange for chips or tokens;

(ii) Foreign currency exchange forms include the country of origin, total face value, amount of chips/token extended (i.e., conversion amount), signature of supervisor/boxperson, and the dealer completing the transaction;

(iii) Foreign currency exchange forms and the foreign currency shall be inserted in the drop box by the dealer; and

(iv) Alternate procedures specific to the use of foreign valued gaming chips shall be developed by the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency.

#### **§ 542.13 What are the minimum internal control standards for gaming devices?**

(a) *Standards for gaming devices.* (1) For this section only, credit or customer credit means a unit of value equivalent to cash or cash equivalents deposited, wagered, won, lost, or redeemed by a customer.

(2) Coins shall include tokens.

(3) For all computerized gaming device systems, a personnel access listing shall be maintained, which includes at a minimum:

(i) Employee name or employee identification number (or equivalent); and

(ii) Listing of functions employee can perform or equivalent means of identifying same.

(b) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(c) *Standards for drop and count.* The procedures for the collection of the gaming device drop and the count thereof shall comply with §542.21, §542.31, or §542.41 (as applicable).

(d) *Jackpot payouts, gaming device fills, short pays and accumulated credit payouts standards.*  
(1) For jackpot payouts and gaming device fills, documentation shall include the following information:

(i) Date and time;

(ii) Gaming device number;

(iii) Dollar amount of cash payout or gaming device fill (both alpha and numeric) or description of personal property awarded, including fair market value. Alpha is optional if another unalterable method is used for evidencing the amount of the payout;

(iv) Game outcome (including reel symbols, card values, suits, etc.) for jackpot payouts. Game outcome is not required if a computerized jackpot/fill system is used;

(v) Preprinted or concurrently printed sequential number; and

(vi) Signatures of at least two (2) employees verifying and witnessing the payout or gaming device fill (except as otherwise provided in paragraphs (d)(1)(vi)(A), (B), and (C) of this section).

(A) Jackpot payouts over a predetermined amount shall require the signature and verification of a supervisory or management employee independent of the gaming device department (in addition to the two (2) signatures required in paragraph (d)(1)(vi) of this section). Alternatively, if an on-line accounting system is utilized, only two (2) signatures are required: one (1) employee and one (1) supervisory or management employee independent of the gaming device department. This predetermined amount shall be authorized by management (as approved by the Tribal gaming agency), documented, and maintained.

(B) With regard to jackpot payouts and hopper fills, the signature of one (1) employee is sufficient if an on-line accounting system is utilized and the jackpot or fill is less than \$1,200.

(C) On graveyard shifts (eight-hour maximum) payouts/fills less than \$100 can be made without the payout/fill being witnessed by a second person.

(2) For short pays of \$10.00 or more, and payouts required for accumulated credits, the payout form shall include the following information:

- (i) Date and time;
- (ii) Gaming device number;
- (iii) Dollar amount of payout (both alpha and numeric); and
- (iv) The signature of at least one (1) employee verifying and witnessing the payout.

(A) Where the payout amount is \$50 or more, signatures of at least two (2) employees verifying and witnessing the payout. Alternatively, the signature of one (1) employee is sufficient if an on-line accounting system is utilized and the payout amount is less than \$3,000.

(3) Computerized jackpot/fill systems shall be restricted so as to prevent unauthorized access and fraudulent payouts by one person as required by §542.16(a).

(4) Payout forms shall be controlled and routed in a manner that precludes any one person from producing a fraudulent payout by forging signatures or by altering the amount paid out subsequent to the payout and misappropriating the funds.

(e) *Promotional payouts or awards.* (1) If a gaming operation offers promotional payouts or awards that are not reflected on the gaming device pay table, then the payout form/documentation shall include:

- (i) Date and time;
- (ii) Gaming device number and denomination;
- (iii) Dollar amount of payout or description of personal property (e.g., jacket, toaster, car, etc.), including fair market value;
- (iv) Type of promotion (e.g., double jackpots, four-of-a-kind bonus, etc.); and
- (v) Signature of at least one (1) employee authorizing and completing the transaction.

(f) *Gaming device department funds standards.* (1) The gaming device booths and change banks that are active during the shift shall be counted down and reconciled each shift by two (2) employees utilizing appropriate accountability documentation. Unverified transfers of cash and/or cash equivalents are prohibited.

(2) The wrapping of loose gaming device booth and cage cashier coin shall be performed at a time or location that does not interfere with the hard count/wrap process or the accountability of that process.

(3) A record shall be maintained evidencing the transfers of wrapped and unwrapped coins and retained for seven (7) days.

(g) *EPROM control standards.* (1) At least annually, procedures shall be performed to insure the integrity of a sample of gaming device game program EPROMs, or other equivalent game software media, by personnel independent of the gaming device department or the gaming devices being tested.

(2) The Tribal gaming agency, or the gaming operation subject to the approval of the Tribal gaming agency, shall develop and implement procedures for the following:

(i) Removal of EPROMs, or other equivalent game software media, from devices, the verification of the existence of errors as applicable, and the correction via duplication from the master game program EPROM, or other equivalent game software media;

(ii) Copying one gaming device program to another approved program;

(iii) Verification of duplicated EPROMs before being offered for play;

(iv) Receipt and destruction of EPROMs, or other equivalent game software media; and

(v) Securing the EPROM, or other equivalent game software media, duplicator, and master game EPROMs, or other equivalent game software media, from unrestricted access.

(3) The master game program number, par percentage, and the pay table shall be verified to the par sheet when initially received from the manufacturer.

(4) Gaming devices with potential jackpots in excess of \$100,000 shall have the game software circuit boards locked or physically sealed. The lock or seal shall necessitate the presence of a person independent of the gaming device department to access the device game program EPROM, or other equivalent game software media. If a seal is used to secure the board to the frame of the gaming device, it shall be pre-numbered.

(5) Records that document the procedures in paragraph (g)(2)(i) of this section shall include the following information:

(i) Date;

(ii) Gaming device number (source and destination);

(iii) Manufacturer;

(iv) Program number;

(v) Personnel involved;

(vi) Reason for duplication;

(vii) Disposition of any permanently removed EPROM, or other equivalent game software media;

(viii) Seal numbers, if applicable; and

(ix) Approved testing lab approval numbers, if available.

(6) EPROMS, or other equivalent game software media, returned to gaming devices shall be labeled with the program number. Supporting documentation shall include the date, program number, information identical to that shown on the manufacturer's label, and initials of the person replacing the EPROM, or other equivalent game software media.

*(h) Standards for evaluating theoretical and actual hold percentages.*

(1) Accurate and current theoretical hold worksheets shall be maintained for each gaming device.

(2) For multi-game/multi-denominational gaming devices, an employee or department independent of the gaming device department shall:

(i) Weekly, record the total coin-in meter;

(ii) Quarterly, record the coin-in meters for each pay table contained in the gaming device; and

(iii) On an annual basis, adjust the theoretical hold percentage in the gaming device statistical report to a weighted average based upon the ratio of coin-in for each game pay table.

(3) For those gaming operations that are unable to perform the weighted average calculation as required by paragraph (h)(2) of this section, the following procedures shall apply:

(i) On at least an annual basis, calculate the actual hold percentage for each gaming device;

(ii) On at least an annual basis, adjust the theoretical hold percentage in the gaming device statistical report for each gaming device to the previously calculated actual hold percentage; and

(iii) The adjusted theoretical hold percentage shall be within the spread between the minimum and maximum theoretical payback percentages.

(4) The adjusted theoretical hold percentage for multi-game/multi-denominational gaming devices may be combined for gaming devices with exactly the same game mix throughout the year.

(5) The theoretical hold percentages used in the gaming device analysis reports should be within the performance standards set by the manufacturer.

(6) Records shall be maintained for each gaming device indicating the dates and type of changes made and the recalculation of theoretical hold as a result of the changes.

(7) Records shall be maintained for each gaming device that indicate the date the gaming device was placed into service, the date the gaming device was removed from operation, the date the gaming device was placed back into operation, and any changes in gaming device numbers and designations.

(8) All of the gaming devices shall contain functioning meters that shall record coin-in or credit-in, or on-line gaming device monitoring system that captures similar data.

(9) All gaming devices with bill acceptors shall contain functioning billing meters that record the dollar amounts or number of bills accepted by denomination.

(10) Gaming device in-meter readings shall be recorded at least weekly (monthly for Tier A and Tier B gaming operations) immediately prior to or subsequent to a gaming device drop. On-line gaming device monitoring systems can satisfy this requirement. However, the time between readings may extend beyond one (1) week in order for a reading to coincide with the end of an accounting period only if such extension is for no longer than six (6) days.

- (11) The employee who records the in-meter reading shall either be independent of the hard count team or shall be assigned on a rotating basis, unless the in-meter readings are randomly verified quarterly for all gaming devices and bill acceptors by a person other than the regular in-meter reader.
- (12) Upon receipt of the meter reading summary, the accounting department shall review all meter readings for reasonableness using pre-established parameters.
- (13) Prior to final preparation of statistical reports, meter readings that do not appear reasonable shall be reviewed with gaming device department employees or other appropriate designees, and exceptions documented, so that meters can be repaired or clerical errors in the recording of meter readings can be corrected.
- (14) A report shall be produced at least monthly showing month-to-date, year-to-date (previous twelve (12) months data preferred), and if practicable, life-to-date actual hold percentage computations for individual gaming devices and a comparison to each gaming device's theoretical hold percentage previously discussed.
- (15) Each change to a gaming device's theoretical hold percentage, including progressive percentage contributions, shall result in that gaming device being treated as a new gaming device in the statistical reports (*i.e.*, not commingling various hold percentages), except for adjustments made in accordance with paragraph (h)(2) of this section.
- (16) If promotional payouts or awards are included on the gaming device statistical reports, it shall be in a manner that prevents distorting the actual hold percentages of the affected gaming devices.
- (17) The statistical reports shall be reviewed by both gaming device department management and management employees independent of the gaming device department on at least a monthly basis.
- (18) For those gaming devices that have experienced at least 100,000 wagering transactions, large variances (three percent (3%) or more) between theoretical hold and actual hold shall be investigated and resolved by a department independent of the gaming device department with the findings documented and provided to the Tribal gaming agency upon request in a timely manner.
- (19) Maintenance of the on-line gaming device monitoring system data files shall be performed by a department independent of the gaming device department. Alternatively, maintenance may be performed by gaming device supervisory employees if sufficient documentation is generated and it is randomly verified on a monthly basis by employees independent of the gaming device department.
- (20) Updates to the on-line gaming device monitoring system to reflect additions, deletions, or movements of gaming devices shall be made at least weekly prior to in-meter readings and the weigh process.
- (i) *Gaming device hopper contents standards.* (1) When gaming devices are temporarily removed from the floor, gaming device drop and hopper contents shall be protected to preclude the misappropriation of stored funds.
- (2) When gaming devices are permanently removed from the floor, the gaming device drop and hopper contents shall be counted and recorded by at least two (2) employees with appropriate

documentation being routed to the accounting department for proper recording and accounting for initial hopper loads.

(j) *Player tracking system.* (1) The following standards apply if a player tracking system is utilized:

(i) The player tracking system shall be secured so as to prevent unauthorized access (e.g., changing passwords at least quarterly and physical access to computer hardware, etc.).

(ii) The addition of points to members' accounts other than through actual gaming device play shall be sufficiently documented (including substantiation of reasons for increases) and shall be authorized by a department independent of the player tracking and gaming devices. Alternatively, addition of points to members' accounts may be authorized by gaming device supervisory employees if sufficient documentation is generated and it is randomly verified by employees independent of the gaming device department on a quarterly basis.

(iii) Booth employees who redeem points for members shall be allowed to receive lost players club cards, provided that they are immediately deposited into a secured container for retrieval by independent personnel.

(iv) Changes to the player tracking system parameters, such as point structures and employee access, shall be performed by supervisory employees independent of the gaming device department. Alternatively, changes to player tracking system parameters may be performed by gaming device supervisory employees if sufficient documentation is generated and it is randomly verified by supervisory employees independent of the gaming device department on a monthly basis.

(v) All other changes to the player tracking system shall be appropriately documented.

(k) *In-house progressive gaming device standards.* (1) A meter that shows the amount of the progressive jackpot shall be conspicuously displayed at or near the gaming devices to which the jackpot applies.

(2) At least once each day, each gaming operation shall record the amount shown on each progressive jackpot meter at the gaming operation except for those jackpots that can be paid directly from the gaming device's hopper;

(3) Explanations for meter reading decreases shall be maintained with the progressive meter reading sheets, and where the payment of a jackpot is the explanation for a decrease, the gaming operation shall record the jackpot payout number on the sheet or have the number reasonably available; and

(4) Each gaming operation shall record the base amount of each progressive jackpot the gaming operation offers.

(5) The Tribal gaming agency shall approve procedures specific to the transfer of progressive amounts in excess of the base amount to other gaming devices. Such procedures may also include other methods of distribution that accrue to the benefit of the gaming public via an award or prize.

(l) *Wide area progressive gaming device standards.* (1) A meter that shows the amount of the progressive jackpot shall be conspicuously displayed at or near the gaming devices to which the jackpot applies.

(2) As applicable to participating gaming operations, the wide area progressive gaming device system shall be adequately restricted to prevent unauthorized access (e.g., changing passwords at least quarterly, restrict access to EPROMs or other equivalent game software media, and restrict physical access to computer hardware, etc.).

(3) The Tribal gaming agency shall approve procedures for the wide area progressive system that:

(i) Reconcile meters and jackpot payouts;

(ii) Collect/drop gaming device funds;

(iii) Verify jackpot, payment, and billing to gaming operations on pro-rata basis;

(iv) System maintenance;

(v) System accuracy; and

(vi) System security.

(4) Reports, where applicable, adequately documenting the procedures required in paragraph (I)(3) of this section shall be generated and retained.

(m) *Accounting/auditing standards.* (1) Gaming device accounting/auditing procedures shall be performed by employees who are independent of the transactions being reviewed.

(2) For on-line gaming device monitoring systems, procedures shall be performed at least monthly to verify that the system is transmitting and receiving data from the gaming devices properly and to verify the continuing accuracy of the coin-in meter readings as recorded in the gaming device statistical report.

(3) For weigh scale and currency interface systems, for at least one (1) drop period per month accounting/auditing employees shall make such comparisons as necessary to the system generated count as recorded in the gaming device statistical report. Discrepancies shall be resolved prior to generation/distribution of gaming device reports.

(4) For each drop period, accounting/auditing personnel shall compare the coin-to-drop meter reading to the actual drop amount. Discrepancies should be resolved prior to generation/distribution of on-line gaming device monitoring system statistical reports.

(5) Follow-up shall be performed for any one (1) gaming device having an unresolved variance between actual coin drop and coin-to-drop meter reading in excess of three percent (3%) and over \$25.00. The follow-up performed and results of the investigation shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(6) For each drop period, accounting/auditing employees shall compare the bill-in meter reading to the total bill acceptor drop amount for the period. Discrepancies shall be resolved before the generation/distribution of gaming device statistical reports.

(7) Follow-up shall be performed for any one (1) gaming device having an unresolved variance between actual currency drop and bill-in meter reading in excess of an amount that is both more than \$25 and at least three percent (3%) of the actual currency drop. The follow-up performed



and results of the investigation shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(8) At least annually, accounting/auditing personnel shall randomly verify that EPROM or other equivalent game software media changes are properly reflected in the gaming device analysis reports.

(9) Accounting/auditing employees shall review exception reports for all computerized gaming device systems on a daily basis for propriety of transactions and unusual occurrences.

(10) All gaming device auditing procedures and any follow-up performed shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(n) *Cash-out tickets.* For gaming devices that utilize cash-out tickets, the following standards apply. This standard is not applicable to Tiers A and B. Tier A and B gaming operations shall develop adequate standards governing the security over the issuance of the cash-out paper to the gaming devices and the redemption of cash-out slips.

(1) In addition to the applicable auditing and accounting standards in paragraph (m) of this section, on a quarterly basis, the gaming operation shall foot all jackpot cash-out tickets equal to or greater than \$1,200 and trace totals to those produced by the host validation computer system.

(2) The customer may request a cash-out ticket from the gaming device that reflects all remaining credits. The cash-out ticket shall be printed at the gaming device by an internal document printer. The cash-out ticket shall be valid for a time period specified by the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency. Cash-out tickets may be redeemed for payment or inserted in another gaming device and wagered, if applicable, during the specified time period.

(3) The customer shall redeem the cash-out ticket at a change booth or cashiers' cage. Alternatively, if a gaming operation utilizes a remote computer validation system, the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall develop alternate standards for the maximum amount that can be redeemed, which shall not exceed \$2,999.99 per cash-out transaction.

(4) Upon presentation of the cash-out ticket(s) for redemption, the following shall occur:

(i) Scan the bar code via an optical reader or its equivalent; or

(ii) Input the cash-out ticket validation number into the computer.

(5) The information contained in paragraph (n)(4) of this section shall be communicated to the host computer. The host computer shall verify the authenticity of the cash-out ticket and communicate directly to the redeemer of the cash-out ticket.

(6) If valid, the cashier (redeemer of the cash-out ticket) pays the customer the appropriate amount and the cash-out ticket is electronically noted "paid" in the system. The "paid" cash-out ticket shall remain in the cashiers' bank for reconciliation purposes. The host validation computer system shall electronically reconcile the cashier's banks for the paid cashed-out tickets.

(7) If invalid, the host computer shall notify the cashier (redeemer of the cash-out ticket). The cashier (redeemer of the cash-out ticket) shall refuse payment to the customer and notify a supervisor of the invalid condition. The supervisor shall resolve the dispute.

(8) If the host validation computer system temporarily goes down, cashiers may redeem cash-out tickets at a change booth or cashier's cage after recording the following:

- (i) Serial number of the cash-out ticket;
- (ii) Date and time;
- (iii) Dollar amount;
- (iv) Issuing gaming device number;
- (v) Marking ticket "paid"; and
- (vi) Ticket shall remain in cashier's bank for reconciliation purposes.

(9) Cash-out tickets shall be validated as expeditiously as possible when the host validation computer system is restored.

(10) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures to control cash-out ticket paper, which shall include procedures that:

- (i) Mitigate the risk of counterfeiting of cash-out ticket paper;
- (ii) Adequately control the inventory of the cash-out ticket paper; and
- (iii) Provide for the destruction of all unused cash-out ticket paper.
- (iv) Alternatively, if the gaming operation utilizes a computer validation system, this standard shall not apply.

(11) If the host validation computer system is down for more than four (4) hours, the gaming operation shall promptly notify the Tribal gaming agency or its designated representative.

(12) These gaming device systems shall comply with all other standards (as applicable) in this part including:

- (i) Standards for bill acceptor drop and count;
- (ii) Standards for coin drop and count; and
- (iii) Standards concerning EPROMS or other equivalent game software media.

(o) *Account access cards.* For gaming devices that utilize account access cards to activate play of the gaming device, the following standards shall apply:

(1) *Equipment.* (i) A central computer, with supporting hardware and software, to coordinate network activities, provide system interface, and store and manage a player/account database;

(ii) A network of contiguous player terminals with touch-screen or button-controlled video monitors connected to an electronic selection device and the central computer via a communications network;

(iii) One or more electronic selection devices, utilizing random number generators, each of which selects any combination or combinations of numbers, colors, and/or symbols for a network of player terminals.

(2) *Player terminals standards.* (i) The player terminals are connected to a game server;

(ii) The game server shall generate and transmit to the bank of player terminals a set of random numbers, colors, and/or symbols at regular intervals. The subsequent game results are determined at the player terminal and the resulting information is transmitted to the account server;

(iii) The game server shall be housed in a game server room or a secure locked cabinet.

(3) *Customer account maintenance standards.* (i) A central computer acting as an account server shall provide customer account maintenance and the deposit/withdrawal function of those account balances;

(ii) Customers may access their accounts on the computer system by means of an account access card at the player terminal. Each player terminal may be equipped with a card reader and personal identification number (PIN) pad or touch screen array for this purpose;

(iii) All communications between the player terminal, or bank of player terminals, and the account server shall be encrypted for security reasons.

(4) *Customer account generation standards.* (i) A computer file for each customer shall be prepared by a clerk, with no incompatible functions, prior to the customer being issued an account access card to be utilized for gaming device play. The customer may select his/her PIN to be used in conjunction with the account access card.

(ii) For each customer file, an employee shall:

(A) Record the customer's name and current address;

(B) The date the account was opened; and

(C) At the time the initial deposit is made, account opened, or credit extended, the identity of the customer shall be verified by examination of a valid driver's license or other reliable identity credential.

(iii) The clerk shall sign-on with a unique password to a terminal equipped with peripherals required to establish a customer account. Passwords are issued and can only be changed by information technology personnel at the discretion of the department director.

(iv) After entering a specified number of incorrect PIN entries at the cage or player terminal, the customer shall be directed to proceed to a clerk to obtain a new PIN. If a customer forgets, misplaces or requests a change to their PIN, the customer shall proceed to a clerk for assistance.

(5) *Deposit of credits standards.* (i) The cashier shall sign-on with a unique password to a cashier terminal equipped with peripherals required to complete the credit transactions. Passwords are issued and can only be changed by information technology personnel at the discretion of the department director.

(ii) The customer shall present cash, chips, coin or coupons along with their account access card to a cashier to deposit credits.

(iii) The cashier shall complete the transaction by utilizing a card scanner that the cashier shall slide the customer's account access card through.

(iv) The cashier shall accept the funds from the customer and enter the appropriate amount on the cashier terminal.

(v) A multi-part deposit slip shall be generated by the point of sale receipt printer. The cashier shall direct the customer to sign the deposit slip receipt. One (1) copy of the deposit slip shall be given to the customer. The other copy of the deposit slip shall be secured in the cashier's cash drawer.

(vi) The cashier shall verify the customer's balance before completing the transaction. The cashier shall secure the funds in their cash drawer and return the account access card to the customer.

(vii) Alternatively, if a kiosk is utilized to accept a deposit of credits, the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures that safeguard the integrity of the kiosk system.

(6) *Prize standards.* (i) Winners at the gaming devices may receive cash, prizes redeemable for cash or merchandise.

(ii) If merchandise prizes are to be awarded, the specific type of prize or prizes that may be won shall be disclosed to the player before the game begins.

(iii) The redemption period of account access cards, as approved by the Tribal gaming agency, shall be conspicuously posted in the gaming operation.

(7) *Credit withdrawal.* The customer shall present their account access card to a cashier to withdraw their credits. The cashier shall perform the following:

(i) Scan the account access card;

(ii) Request the customer to enter their PIN, if the PIN was selected by the customer;

(iii) The cashier shall ascertain the amount the customer wishes to withdraw and enter the amount into the computer;

(iv) A multi-part withdrawal slip shall be generated by the point of sale receipt printer. The cashier shall direct the customer to sign the withdrawal slip;

(v) The cashier shall verify that the account access card and the customer match by:

(A) Comparing the customer to image on the computer screen;

(B) Comparing the customer to image on customer's picture ID; or

(C) Comparing the customer signature on the withdrawal slip to signature on the computer screen.

(vi) The cashier shall verify the customer's balance before completing the transaction. The cashier shall pay the customer the appropriate amount, issue the customer the original withdrawal slip and return the account access card to the customer;

(vii) The copy of the withdrawal slip shall be placed in the cash drawer. All account transactions shall be accurately tracked by the account server computer system. The copy of the withdrawal slip shall be forwarded to the accounting department at the end of the gaming day; and

(viii) In the event the imaging function is temporarily disabled, customers shall be required to provide positive ID for cash withdrawal transactions at the cashier stations.

(p) *Smart cards.* All smart cards (i.e., cards that possess the means to electronically store and retrieve data) that maintain the only source of account data are prohibited.

**§ 542.14 What are the minimum internal control standards for the cage?**

(a) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(b) *Personal checks, cashier's checks, payroll checks, and counter checks.* (1) If personal checks, cashier's checks, payroll checks, or counter checks are cashed at the cage, the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with appropriate controls for purposes of security and integrity.

(2) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures for the acceptance of personal checks, collecting and recording checks returned to the gaming operation after deposit, re-deposit, and write-off authorization.

(3) When counter checks are issued, the following shall be included on the check:

- (i) The customer's name and signature;
- (ii) The dollar amount of the counter check (both alpha and numeric);
- (iii) Customer's bank name and bank account number;
- (iv) Date of issuance; and
- (v) Signature or initials of the person approving the counter check transaction.

(4) When traveler's checks or other guaranteed drafts such as cashier's checks are presented, the cashier shall comply with the examination and documentation procedures as required by the issuer.

(c) *Customer deposited funds.* If a gaming operation permits a customer to deposit funds with the gaming operation at the cage, the following standards shall apply.

(1) The receipt or withdrawal of a customer deposit shall be evidenced by at least a two-part document with one (1) copy going to the customer and one (1) copy remaining in the cage file.

(2) The multi-part receipt shall contain the following information:

(i) Same receipt number on all copies;

(ii) Customer's name and signature;

(iii) Date of receipt and withdrawal;

(iv) Dollar amount of deposit/withdrawal; and

(v) Nature of deposit (cash, check, chips); however,

(vi) Provided all of the information in paragraph (c)(2)(i) through (v) is available, the only required information for all copies of the receipt is the receipt number.

(3) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures that:

(i) Maintain a detailed record by customer name and date of all funds on deposit;

(ii) Maintain a current balance of all customer cash deposits that are in the cage/vault inventory or accountability; and

(iii) Reconcile this current balance with the deposits and withdrawals at least daily.

(4) The gaming operation, as approved by the Tribal gaming agency, shall describe the sequence of the required signatures attesting to the accuracy of the information contained on the customer deposit or withdrawal form ensuring that the form is signed by the cashier.

(5) All customer deposits and withdrawal transactions at the cage shall be recorded on a cage accountability form on a per-shift basis.

(6) Only cash, cash equivalents, chips, and tokens shall be accepted from customers for the purpose of a customer deposit.

(7) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures that verify the customer's identity, including photo identification.

(8) A file for customers shall be prepared prior to acceptance of a deposit.

(d) *Cage and vault accountability standards.* (1) All transactions that flow through the cage shall be summarized on a cage accountability form on a per shift basis and shall be supported by documentation.

(2) The cage and vault (including coin room) inventories shall be counted by the oncoming and outgoing cashiers. These employees shall make individual counts for comparison for accuracy and maintenance of individual accountability. Such counts shall be recorded at the end of each shift during which activity took place. All discrepancies shall be noted and investigated. Unverified transfers of cash and/or cash equivalents are prohibited.

(3) The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with a minimum bankroll formula to ensure the gaming operation maintains cash or cash equivalents (on hand and in the bank, if readily accessible) in an amount sufficient to satisfy obligations to the gaming operation's customers as they are incurred. A suggested bankroll formula will be provided by the Commission or State gaming agency upon written request.

(e) *Chip and token standards.* The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures for the receipt, inventory, storage, and destruction of gaming chips and tokens.

(f) *Coupon standards.* Any program for the exchange of coupons for chips, tokens, and/or another coupon program shall be approved by the Tribal gaming agency prior to implementation. If approved, the gaming operation shall establish and comply with procedures that account for and control such programs.

(g) *Accounting/auditing standards.* (1) The cage accountability shall be reconciled to the general ledger at least monthly.

(2) A trial balance of gaming operation accounts receivable, including the name of the customer and current balance, shall be prepared at least monthly for active, inactive, settled or written-off accounts.

(3) The trial balance of gaming operation accounts receivable shall be reconciled to the general ledger each month. The reconciliation and any follow-up performed shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(4) On a monthly basis an evaluation of the collection percentage of credit issued to identify unusual trends shall be performed.

(5) All cage and credit accounting procedures and any follow-up performed shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(h) *Extraneous items.* The Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures to address the transporting of extraneous items, such as coats, purses, and/or boxes, into and out of the cage, coin room, count room, and/or vault.

#### **§ 542.15 What are the minimum internal control standards for credit?**

(a) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(b) *Credit standards.* The following standards shall apply if the gaming operation authorizes and extends credit to customers:

(1) At least the following information shall be recorded for customers that have credit limits or are issued credit (excluding personal checks, payroll checks, cashier's checks, and traveler's checks):

(i) Customer's name, current address, and signature;

- (ii) Identification verifications;
  - (iii) Authorized credit limit;
  - (iv) Documentation of authorization by a person designated by management to approve credit limits; and
  - (v) Credit issuances and payments.
- (2) Prior to extending credit, the customer's gaming operation credit record and/or other documentation shall be examined to determine the following:
- (i) Properly authorized credit limit;
  - (ii) Whether remaining credit is sufficient to cover the credit issuance; and
  - (iii) Identity of the customer (except for known customers).
- (3) Credit extensions over a specified dollar amount shall be approved by personnel designated by management.
- (4) Proper approval of credit extensions over ten percent (10%) of the previously established limit shall be documented.
- (5) The job functions of credit approval (i.e., establishing the customer's credit worthiness) and credit extension (i.e., advancing customer's credit) shall be segregated for credit extensions to a single customer of \$10,000 or more per day (applies whether the credit is extended in the pit or the cage).
- (6) If cage credit is extended to a single customer in an amount exceeding \$2,500, appropriate gaming personnel shall be notified on a timely basis of the customers playing on cage credit, the applicable amount of credit issued, and the available balance.
- (7) Cage marker forms shall be at least two (2) parts (the original marker and a payment slip), prenumbered by the printer or concurrently numbered by the computerized system, and utilized in numerical sequence.
- (8) The completed original cage marker shall contain at least the following information:
- (i) Marker number;
  - (ii) Player's name and signature; and
  - (iii) Amount of credit issued (both alpha and numeric).
- (9) The completed payment slip shall include the same marker number as the original, date and time of payment, amount of payment, nature of settlement (cash, chips, etc.), and signature of cashier receiving the payment.
- (c) *Payment standards.* (1) All payments received on outstanding credit instruments shall be recorded in ink or other permanent form of recordation in the gaming operation's records.



(2) When partial payments are made on credit instruments, they shall be evidenced by a multi-part receipt (or another equivalent document) that contains:

(i) The same preprinted number on all copies;

(ii) Customer's name;

(iii) Date of payment;

(iv) Dollar amount of payment (or remaining balance if a new marker is issued), and nature of settlement (cash, chips, etc.);

(v) Signature of employee receiving payment; and

(vi) Number of credit instrument on which partial payment is being made.

(3) Unless account balances are routinely confirmed on a random basis by the accounting or internal audit departments, or statements are mailed by a person independent of the credit transactions and collections thereon, and the department receiving payments cannot access cash, then the following standards shall apply:

(i) The routing procedures for payments by mail require that they be received by a department independent of credit instrument custody and collection;

(ii) Such receipts by mail shall be documented on a listing indicating the customer's name, amount of payment, nature of payment (if other than a check), and date payment received; and

(iii) The total amount of the listing of mail receipts shall be reconciled with the total mail receipts recorded on the appropriate accountability form by the accounting department on a random basis (for at least three (3) days per month).

(d) *Access to credit documentation.* (1) Access to credit documentation shall be restricted as follows:

(i) The credit information shall be restricted to those positions that require access and are so authorized by management;

(ii) Outstanding credit instruments shall be restricted to persons authorized by management; and

(iii) Written-off credit instruments shall be further restricted to persons specified by management.

(e) *Maintenance of credit documentation.* (1) All extensions of cage credit, pit credit transferred to the cage, and subsequent payments shall be documented on a credit instrument control form.

(2) Records of all correspondence, transfers to and from outside agencies, and other documents related to issued credit instruments shall be maintained.

(f) *Write-off and settlement standards.* (1) Written-off or settled credit instruments shall be authorized in writing.

(2) Such authorizations shall be made by at least two (2) management officials who are from departments independent of the credit transaction.

(g) *Collection agency standards.* (1) If credit instruments are transferred to collection agencies or other collection representatives, a copy of the credit instrument and a receipt from the collection representative shall be obtained and maintained until the original credit instrument is returned or payment is received.

(2) A person independent of credit transactions and collections shall periodically review the documents in paragraph (g)(1) of this section.

(h) *Accounting/auditing standards.* (1) A person independent of the cage, credit, and collection functions shall perform all of the following at least three (3) times per year:

(i) Ascertain compliance with credit limits and other established credit issuance procedures;

(ii) Randomly reconcile outstanding balances of both active and inactive accounts on the accounts receivable listing to individual credit records and physical instruments;

(iii) Examine credit records to determine that appropriate collection efforts are being made and payments are being properly recorded; and

(iv) For a minimum of five (5) days per month, partial payment receipts shall be subsequently reconciled to the total payments recorded by the cage for the day and shall be numerically accounted for.

#### **§ 542.16 What are the minimum internal control standards for information technology?**

(a) *General controls for gaming hardware and software.* (1) Management shall take an active role in making sure that physical and logical security measures are implemented, maintained, and adhered to by personnel to prevent unauthorized access that could cause errors or compromise data or processing integrity.

(i) Management shall ensure that all new gaming vendor hardware and software agreements/contracts contain language requiring the vendor to adhere to tribal internal control standards applicable to the goods and services the vendor is providing.

(ii) Physical security measures shall exist over computer, computer terminals, and storage media to prevent unauthorized access and loss of integrity of data and processing.

(iii) Access to systems software and application programs shall be limited to authorized personnel.

(iv) Access to computer data shall be limited to authorized personnel.

(v) Access to computer communications facilities, or the computer system, and information transmissions shall be limited to authorized personnel.

(vi) Standards in paragraph (a)(1) of this section shall apply to each applicable department within the gaming operation.

(2) The main computers (i.e., hardware, software, and data files) for each gaming application (e.g., gaming devices, pari-mutuel wagering, banking and percentage card games, etc.) shall be in a secured area with access restricted to authorized persons, including vendors.

- (3) Access to computer operations shall be restricted to authorized personnel to reduce the risk of loss of integrity of data or processing.
- (4) Incompatible duties shall be adequately segregated and monitored to prevent error in general information technology procedures to go undetected or fraud to be concealed.
- (5) Non-information technology personnel shall be precluded from having unrestricted access to the secured computer areas.
- (6) The computer systems, including application software, shall be secured through the use of passwords or other approved means where applicable. Management personnel or persons independent of the department being controlled shall assign and control access to system functions.
- (7) Passwords shall be controlled as follows unless otherwise addressed in the standards in this section.
- (i) Each user shall have their own individual password;
  - (ii) Passwords shall be changed at least quarterly with changes documented; and
  - (iii) For computer systems that automatically force a password change on a quarterly basis, documentation shall be maintained listing the systems and the date the user was given access.
- (8) Adequate backup and recovery procedures shall be in place that include:
- (i) Frequent backup of data files;
  - (ii) Backup of all programs;
  - (iii) Secured off-site storage of all backup data files and programs, or other adequate protection; and
  - (iv) Recovery procedures, which are tested on a sample basis at least annually with documentation of results.
- (9) Adequate information technology system documentation shall be maintained, including descriptions of hardware and software, operator manuals, etc.
- (b) Independence of information technology personnel.* (1) The information technology personnel shall be independent of the gaming areas (e.g., cage, pit, count rooms, etc.). Information technology personnel procedures and controls should be documented and responsibilities communicated.
- (2) Information technology personnel shall be precluded from unauthorized access to:
- (i) Computers and terminals located in gaming areas;
  - (ii) Source documents; and
  - (iii) Live data files (not test data).

(3) Information technology personnel shall be restricted from:

(i) Having unauthorized access to cash or other liquid assets; and

(ii) Initiating general or subsidiary ledger entries.

(c) *Gaming program changes.* (1) Program changes for in-house developed systems should be documented as follows:

(i) Requests for new programs or program changes shall be reviewed by the information technology supervisor. Approvals to begin work on the program shall be documented;

(ii) A written plan of implementation for new and modified programs shall be maintained, and shall include, at a minimum, the date the program is to be placed into service, the nature of the change, a description of procedures required in order to bring the new or modified program into service (conversion or input of data, installation procedures, etc.), and an indication of who is to perform all such procedures;

(iii) Testing of new and modified programs shall be performed and documented prior to implementation; and

(iv) A record of the final program or program changes, including evidence of user acceptance, date in service, programmer, and reason for changes, shall be documented and maintained.

(d) *Security logs.* (1) If computer security logs are generated by the system, they shall be reviewed by information technology supervisory personnel for evidence of:

(i) Multiple attempts to log-on, or alternatively, the system shall deny user access after three (3) attempts to log-on;

(ii) Unauthorized changes to live data files; and

(iii) Any other unusual transactions.

(2) This paragraph shall not apply to personal computers.

(e) *Remote dial-up.* (1) If remote dial-up to any associated equipment is allowed for software support, the gaming operation shall maintain an access log that includes:

(i) Name of employee authorizing modem access;

(ii) Name of authorized programmer or manufacturer representative;

(iii) Reason for modem access;

(iv) Description of work performed; and

(v) Date, time, and duration of access.

(f) *Document storage.* (1) Documents may be scanned or directly stored to an unalterable storage medium under the following conditions.

- (i) The storage medium shall contain the exact duplicate of the original document.
- (ii) All documents stored on the storage medium shall be maintained with a detailed index containing the gaming operation department and date. This index shall be available upon request by the Commission or State gaming agency.
- (iii) Upon request and adequate notice by the Commission or State gaming agency, hardware (terminal, printer, etc.) shall be made available to perform auditing procedures.
- (iv) Controls shall exist to ensure the accurate reproduction of records up to and including the printing of stored documents used for auditing purposes.
- (v) The storage medium shall be retained for a minimum of five (5) years.

**§ 542.17 What are the minimum internal control standards for complimentary services or items?**

(a) Each Tribal gaming agency or gaming operation shall establish and the gaming operation shall comply with procedures for the authorization, issuance, and tracking of complimentary services and items, including cash and non-cash gifts. Such procedures must be approved by the Tribal gaming agency and shall include, but shall not be limited to, the procedures by which the gaming operation delegates to its employees the authority to approve the issuance of complimentary services and items, and the procedures by which conditions or limits, if any, which may apply to such authority are established and modified (including limits based on relationships between the authorizer and recipient), and shall further include effective provisions for audit purposes.

(b) At least monthly, accounting, information technology, or audit personnel that cannot grant or receive complimentary privileges shall prepare reports that include the following information for all complimentary items and services equal to or exceeding \$100 or an amount established by the Tribal gaming agency, which shall not be greater than \$100:

- (1) Name of customer who received the complimentary service or item;
- (2) Name(s) of authorized issuer of the complimentary service or item;
- (3) The actual cash value of the complimentary service or item;
- (4) The type of complimentary service or item (i.e., food, beverage, etc.); and
- (5) Date the complimentary service or item was issued.

(c) The internal audit or accounting departments shall review the reports required in paragraph (b) of this section at least monthly. These reports shall be made available to the Tribe, Tribal gaming agency, audit committee, other entity designated by the Tribe, and the Commission and State gaming agency upon request.

**§ 542.18 Reserved.**

**§ 542.19 What are the minimum internal control standards for accounting?**

- (a) Each gaming operation shall prepare accurate, complete, legible, and permanent records of all transactions pertaining to revenue and gaming activities.
- (b) Each gaming operation shall prepare general accounting records according to Generally Accepted Accounting Principles on a double-entry system of accounting, maintaining detailed, supporting, subsidiary records, including, but not limited to:
- (1) Detailed records identifying revenues, expenses, assets, liabilities, and equity for each gaming operation;
  - (2) Detailed records of all markers, IOU's, returned checks, hold checks, or other similar credit instruments;
  - (3) Individual and statistical game records to reflect statistical drop, statistical win, and the percentage of statistical win to statistical drop by each banking and percentage card game, and to reflect statistical drop, statistical win, and the percentage of statistical win to statistical drop for each type of banking and percentage card game, by shift, by day, cumulative month-to-date and year-to-date, and individual and statistical game records reflecting similar information for all other games;
  - (4) Gaming device analysis reports which, by each gaming device, compare actual hold percentages to theoretical hold percentages;
  - (5) The records required by this part and by the Tribal internal control standards;
  - (6) Journal entries prepared by the gaming operation and by its independent accountants; and
  - (7) Any other records specifically required to be maintained.
- (c) Each gaming operation shall establish administrative and accounting procedures for the purpose of determining effective control over a gaming operation's fiscal affairs. The procedures shall be designed to reasonably ensure that:
- (1) Assets are safeguarded;
  - (2) Financial records are accurate and reliable;
  - (3) Transactions are performed only in accordance with management's general and specific authorization;
  - (4) Transactions are recorded adequately to permit proper reporting of gaming revenue and of fees and taxes, and to maintain accountability of assets;
  - (5) Recorded accountability for assets is compared with actual assets at reasonable intervals, and appropriate action is taken with respect to any discrepancies; and
  - (6) Functions, duties, and responsibilities are appropriately segregated in accordance with sound business practices.
- (d) *Gross gaming revenue computations.* (1) For banking and percentage card games, gross revenue equals the closing table bankroll, plus credit slips for cash, chips, tokens or

personal/payroll checks returned to the cage, plus drop, less opening table bankroll and fills to the table, and money transfers issued from the game through the use of a cashless wagering system.

(2) For gaming devices, gross revenue equals drop, less fills, jackpot payouts and personal property awarded to patrons as gambling winnings. Additionally, the initial hopper load is not a fill and does not affect gross revenue. The difference between the initial hopper load and the total amount that is in the hopper at the end of the gaming operation's fiscal year should be adjusted accordingly as an addition to or subtraction from the drop for the year.

(3) Reserved.

(4) (i) Reserved.

(ii) In computing gross revenue for gaming devices, the actual cost to the gaming operation of any personal property distributed as losses to patrons may be deducted from winnings (other than costs of travel, lodging, services, food, and beverages), if the gaming operation maintains detailed documents supporting the deduction.

(e) Each gaming operation shall establish internal control systems sufficient to ensure that currency (other than tips or gratuities) received from a patron in the gaming area is promptly placed in a locked box in the table, or, in the case of a cashier, in the appropriate place in the cashier's cage, or on those games which do not have a locked drop box, or on banking or percentage card game tables, in an appropriate place on the table, in the cash register or in another approved repository.

(f) If the gaming operation provides periodic payments to satisfy a payout resulting from a wager, the initial installment payment, when paid, and the actual cost of a payment plan, which is funded by the gaming operation, may be deducted from winnings. The gaming operation is required to obtain the approval of all payment plans from the Tribal gaming agency. For any funding method which merely guarantees the gaming operation's performance, and under which the gaming operation makes payments out of cash flow (e.g. irrevocable letters of credits, surety bonds, or other similar methods), the gaming operation may only deduct such payments when paid to the patron.

(g) For payouts by wide-area progressive gaming device systems, a gaming operation may deduct from winnings only its pro rata share of a wide-area gaming device system payout.

(h) Cash-out tickets issued at a gaming device shall be deducted from gross revenue as jackpot payouts in the month the tickets are issued by the gaming device. Tickets deducted from gross revenue that are not redeemed within a period, not to exceed 180 days of issuance, shall be included in gross revenue. An unredeemed ticket previously included in gross revenue may be deducted from gross revenue in the month redeemed.

(i) A gaming operation may not deduct from gross revenues the unpaid balance of a credit instrument extended for purposes other than gaming.

(j) A gaming operation may deduct from gross revenue the unpaid balance of a credit instrument if the gaming operation documents, or otherwise keeps detailed records of, compliance with the following requirements. Such records confirming compliance shall be made available to the Tribal gaming agency, State gaming agency, or the Commission upon request, and demonstrate, without limitation, the following:

(1) The gaming operation can document that the credit extended was for gaming purposes;

- (2) The gaming operation has established procedures and relevant criteria to evaluate a patron's credit reputation or financial resources and to then determine that there is a reasonable basis for extending credit in the amount or sum placed at the patron's disposal;
- (3) In the case of personal checks, the gaming operation has established procedures to examine documentation, which would normally be acceptable as a type of identification when cashing checks, and has recorded the patron's bank check guarantee card number or credit card number, or has satisfied paragraph (j)(2) of this section, as management may deem appropriate for the check-cashing authorization granted;
- (4) In the case of third-party checks for which cash, chips, or tokens have been issued to the patron, or which were accepted in payment of another credit instrument, the gaming operation has established procedures to examine documentation, normally accepted as a means of identification when cashing checks, and has, for the check's maker or drawer, satisfied paragraph (j)(2) of this section, as management may deem appropriate for the check-cashing authorization granted;
- (5) In the case of guaranteed drafts, procedures should be established to ensure compliance with the issuance and acceptance procedures prescribed by the issuer;
- (6) The gaming operation has established procedures to ensure that the credit extended is appropriately documented, not least of which would be the patron's identification and signature attesting to the authenticity of the individual credit transactions. The authorizing signature shall be obtained at the time credit is extended.
- (7) The gaming operation has established procedures to effectively document its attempt to collect the full amount of the debt. Such documentation would include, but not be limited to, letters sent to the patron, logs of personal or telephone conversations, proof of presentation of the credit instrument to the patron's bank for collection, settlement agreements, or other documents which demonstrate that the gaming operation has made a good faith attempt to collect the full amount of the debt. Such records documenting collection efforts shall be made available to the Tribal gaming agency, State gaming agency, or the Commission upon request.
- (k) Maintenance and preservation of books, records and documents. (1) All original books, records and documents pertaining to the conduct of wagering activities shall be retained by the gaming operation in accordance with the following schedule. A record that summarizes gaming transactions is sufficient, provided that all documents containing an original signature(s) attesting to the accuracy of a gaming related transaction are independently preserved. Original books, records or documents shall not include copies of originals, except for copies that contain original comments or notations on parts of multi-part forms. The following original books, records and documents shall be retained by a gaming operation for a minimum of five (5) years:
- (i) Casino cage documents;
  - (ii) Documentation supporting the calculation of banking and percentage card game win;
  - (iii) Documentation supporting the calculation of gaming device win;
  - (iv) Documentation supporting the calculation of revenue received from gaming devices, pari-mutuel wagering, and banking and percentage card games.
  - (v) Banking and percentage card games statistical analysis reports;



- (vi) Gaming device statistical analysis reports;
  - (vii) Reserved.
  - (viii) Internal audit documentation and reports;
  - (ix) Documentation supporting the write-off of gaming credit instruments and named credit instruments; and
  - (x) All other books, records and documents pertaining to the conduct of wagering activities that contain original signature(s) attesting to the accuracy of the gaming related transaction.
- (2) Unless otherwise specified in this part, all other books, records, and documents shall be retained until such time as the accounting records have been audited by the gaming operation's independent certified public accountants.
- (3) The above definition shall apply without regards to the medium by which the book, record or document is generated or maintained (paper, computer-generated, magnetic media, etc.).

**§ 542.20 What is a Tier A gaming operation?**

A Tier A gaming operation is one with annual gross gaming revenues of more than \$1 million but not more than \$5 million.

**§ 542.21 What are the minimum internal control standards for drop and count for Tier A gaming operations?**

(a) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(b) *Banking and percentage card game drop standards.* (1) The setting out of empty banking or percentage card game drop boxes and the drop shall be a continuous process.

(2) At the end of each shift:

(i) All locked banking or percentage card game drop boxes shall be removed from the banking or percentage card game tables by a person independent of the pit shift being dropped;

(ii) A separate drop box shall be placed on each banking and percentage card game table opened at any time during each shift or a gaming operation may utilize a single drop box with separate openings and compartments for each shift; and

(iii) Upon removal from the banking and percentage card game tables, banking and percentage card game drop boxes shall be transported directly to the count room or other equivalently secure area with comparable controls and locked in a secure manner until the count takes place.

(3) If drop boxes are not placed on all banking and percentage card game tables, then the pit department shall document which tables were open during the shift.

(4) The transporting of banking and percentage card game drop boxes shall be performed by a minimum of two (2) persons, at least one (1) of whom is independent of the pit shift being dropped.

(5) All banking and percentage card game drop boxes shall be posted with a number corresponding to a permanent number on the gaming table and marked to indicate game, table number, and shift.

(c) *Soft count room personnel.* (1) The banking and percentage card game soft count and the gaming device bill acceptor count shall be performed by a minimum of two (2) employees.

(2) Count room personnel shall not be allowed to exit or enter the count room during the count except for emergencies or scheduled breaks. At no time during the count, shall there be fewer than two (2) employees in the count room until the drop proceeds have been accepted into cage/vault accountability.

(3) Count team members shall be rotated on a routine basis such that the count team is not consistently the same two (2) persons more than four (4) days per week. This standard shall not apply to gaming operations that utilize a count team of more than two (2) persons.

(4) The count team shall be independent of transactions being reviewed and counted. The count team shall be independent of the cage/vault departments, however, a dealer or a cage cashier may be used if this person is not allowed to perform the recording function. An accounting representative may be used if there is an independent audit of all soft count documentation.

(d) *Banking and percentage card game soft count standards.* (1) The banking and percentage card game soft count shall be performed in a soft count room or other equivalently secure area with comparable controls.

(2) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.

(3) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.

(4) The banking and percentage card game drop boxes shall be individually emptied and counted in such a manner to prevent the commingling of funds between boxes until the count of the box has been recorded.

(i) The count of each box shall be recorded in ink or other permanent form of recordation.

(ii) A second count shall be performed by an employee on the count team who did not perform the initial count.

(iii) Corrections to information originally recorded by the count team on soft count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change, unless the count team only has two (2) members in which case the initials of only one (1) verifying member is required.

- (5) If cash counters are utilized and the count room table is used only to empty boxes and sort/stack contents, a count team member shall be able to observe the loading and unloading of all cash at the cash counter, including rejected cash.
- (6) Banking and percentage card game drop boxes, when empty, shall be shown to another member of the count team, or to another person who is observing the count, or to surveillance.
- (7) Orders for fill/credit (if applicable) shall be matched to the fill/credit slips. Fills and credits shall be traced to or recorded on the count sheet.
- (8) Pit marker issue and payment slips (if applicable) removed from the banking or percentage card game drop boxes shall either be:
- (i) Traced to or recorded on the count sheet by the count team; or
  - (ii) Totaled by shift and traced to the totals documented by the computerized system. Accounting personnel shall verify the issue/payment slip for each table is accurate.
- (9) Foreign currency exchange forms (if applicable) removed from the banking or percentage card game drop boxes shall be reviewed for the proper daily exchange rate and the conversion amount shall be recomputed by the count team. Alternatively, this may be performed by accounting/auditing employees.
- (10) The opening/closing banking and percentage card game table and marker inventory forms (if applicable) shall either be:
- (i) Examined and traced to or recorded on the count sheet; or
  - (ii) If a computerized system is used, accounting personnel can trace the opening/closing banking and percentage card game table and marker inventory forms to the count sheet. Discrepancies shall be investigated with the findings documented and maintained for inspection.
- (11) The count sheet shall be reconciled to the total drop by a count team member who shall not function as the sole recorder.
- (12) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.
- (13) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.
- (14) The count sheet, with all supporting documents, shall be delivered to the accounting department by a count team member or a person independent of the cashiers department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.
- (15) Access to stored, full banking or percentage card game drop boxes shall be restricted to authorized members of the drop and count teams.

- (e) *Gaming device bill acceptor drop standards.* (1) A minimum of two (2) employees shall be involved in the removal of the gaming device drop, at least one (1) of whom is independent of the gaming device department.
- (2) All bill acceptor canisters shall be removed only at the time previously designated by the gaming operation and reported to the Tribal gaming agency, except for emergency drops.
- (3) The bill acceptor canisters shall be removed by a person independent of the gaming device department then transported directly to the count room or other equivalently secure area with comparable controls and locked in a secure manner until the count takes place.
- (i) Security shall be provided over the bill acceptor canisters removed from the gaming devices and awaiting transport to the count room.
- (ii) The transporting of bill acceptor canisters shall be performed by a minimum of two (2) persons, at least one (1) of whom is independent of the gaming device department.
- (4) All bill acceptor canisters shall be posted with a number corresponding to a permanent number on the gaming device.
- (f) *Gaming device bill acceptor count standards.* (1) The gaming device bill acceptor count shall be performed in a soft count room or other equivalently secure area with comparable controls.
- (2) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.
- (3) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.
- (4) The bill acceptor canisters shall be individually emptied and counted in such a manner to prevent the commingling of funds between canisters until the count of the canister has been recorded.
- (i) The count of each canister shall be recorded in ink or other permanent form of recordation.
- (ii) Corrections to information originally recorded by the count team on soft count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.
- (5) If cash counters are utilized and the count room table is used only to empty canisters and sort/stack contents, a count team member shall be able to observe the loading and unloading of all cash at the cash counter, including rejected cash.
- (6) Canisters, when empty, shall be shown to another member of the count team, or to another person who is observing the count, or to surveillance.
- (7) The count sheet shall be reconciled to the total drop by a count team member who shall not function as the sole recorder.
- (8) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.

- (9) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.
- (10) The count sheet, with all supporting documents, shall be delivered to the accounting department by a count team member or a person independent of the cashiers department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.
- (11) Access to stored bill acceptor canisters, full or empty, shall be restricted to:
- (i) Authorized members of the drop and count teams; and
  - (ii) Authorized personnel in an emergency for resolution of a problem.
- (g) *Gaming device coin drop standards.* (1) A minimum of two (2) employees shall be involved in the removal of the gaming device drop, at least one (1) of whom is independent of the gaming device department.
- (2) All drop buckets shall be removed only at the time previously designated by the gaming operation and reported to the Tribal gaming agency, except for emergency drops.
- (3) Security shall be provided over the buckets removed from the gaming device drop cabinets and awaiting transport to the count room.
- (4) As each gaming device is opened, the contents shall be tagged with its respective gaming device number if the bucket is not permanently marked with the gaming device number. The contents shall be transported directly to the area designated for the counting of such drop proceeds. If more than one (1) trip is required to remove the contents of the gaming devices, the filled carts of coins shall be securely locked in the room designed for counting or in another equivalently secure area with comparable controls. There shall be a locked covering on any carts in which the drop route includes passage out of doors.
- (i) Alternatively, a smart bucket system that electronically identifies and tracks the gaming device number, and facilitates the proper recognition of gaming revenue, shall satisfy the requirements of this paragraph.
- (5) Each drop bucket in use shall be:
- (i) Housed in a locked compartment separate from any other compartment of the gaming device and keyed differently than other gaming device compartments; and
  - (ii) Identifiable to the gaming device from which it is removed. If the gaming device is identified with a removable tag that is placed in the bucket, the tag shall be placed on top of the bucket when it is collected.
- (6) Each gaming device shall have drop buckets into which coins or tokens that are retained by the gaming device are collected. Drop bucket contents shall not be used to make change or pay hand-paid payouts.
- (7) The collection procedures may include procedures for dropping gaming devices that have trays instead of drop buckets.

(h) *Hard count room personnel.* (1) The weigh/count shall be performed by a minimum of two (2) employees.

(2) At no time during the weigh/count shall there be fewer than two (2) employees in the count room until the drop proceeds have been accepted into cage/vault accountability.

(i) If the gaming device count is conducted with a continuous mechanical count meter that is not reset during the count and is verified in writing by at least two(2) employees at the start and end of each denomination count, then one (1) employee may perform the wrap.

(3) Count team members shall be rotated on a routine basis such that the count team is not consistently the same two (2) persons more than four (4) days per week. This standard shall not apply to gaming operations that utilize a count team of more than two (2) persons.

(4) The count team shall be independent of transactions being reviewed and counted. The count team shall be independent of the cage/vault departments, unless they are non-supervisory gaming device employees and perform the laborer function only (A non-supervisory gaming device employee is defined as a person below the level of gaming device shift supervisor). A cage cashier may be used if this person is not allowed to perform the recording function. An accounting representative may be used if there is an independent audit of all count documentation.

(i) *Gaming device coin count and wrap standards.* (1) Coins shall include tokens.

(2) The gaming device coin count and wrap shall be performed in a count room or other equivalently secure area with comparable controls.

(i) Alternatively, an on-the-floor drop system utilizing a mobile scale shall satisfy the requirements of this paragraph, subject to the following conditions:

(A) The gaming operation shall utilize and maintain an effective on-line gaming device monitoring system, as described in §542.13(m)(3);

(B) Components of the on-the-floor drop system shall include, but not be limited to, a weigh scale, a laptop computer through which weigh/count applications are operated, a security camera available for the mobile scale system, and a VCR or other video recording device to be housed within the video compartment of the mobile scale. The system may include a mule cart used for mobile weigh scale system locomotion.

(C) The gaming operation must obtain the security camera available with the system, and this camera must be added in such a way as to eliminate tampering.

(D) Prior to the drop, the drop/count team shall ensure the scale batteries are charged;

(E) Prior to the drop, a videotape or other video recording media shall be inserted into the VCR or other video recording device used to record the drop in conjunction with the security camera system and the VCR or other video recording device shall be activated;

(F) The weigh scale test shall be performed prior to removing the unit from the hard count room for the start of the weigh/drop/count;

(G) Surveillance shall be notified when the weigh/drop/count begins and shall be capable of monitoring the entire process;

- (H) An observer independent of the weigh/drop/count teams (independent observer) shall remain by the weigh scale at all times and shall observe the entire weigh/drop/count process;
- (I) Physical custody of the key(s) needed to access the laptop and video compartment shall require the involvement of two (2) persons, one (1) of whom is independent of the drop and count team;
- (J) The mule key (if applicable), the laptop and video compartment keys, and the remote control for the VCR or other video recording device shall be maintained by a department independent of the gaming device department. The appropriate personnel shall sign out these keys;
- (K) A person independent of the weigh/drop/count teams shall be required to accompany these keys while they are checked out, and observe each time the laptop compartment is opened;
- (L) The laptop access panel shall not be opened outside the hard count room, except in instances when the laptop must be rebooted as a result of a crash, lock up, or other situation requiring immediate corrective action;
- (M) User access to the system shall be limited to those employees required to have full or limited access to complete the weigh/drop/count; and
- (N) When the weigh/drop/count is completed, the independent observer shall access the laptop compartment, end the recording session, eject the videotape or other video recording media, and deliver the videotape or other video recording media to surveillance.
- (3) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.
- (4) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.
- (5) The following functions shall be performed in the counting of the gaming device drop:
- (i) Recorder function, which involves the recording of the gaming device count; and
  - (ii) Count team supervisor function, which involves the control of the gaming device weigh and wrap process. The supervisor shall not perform the initial recording of the weigh/count unless a weigh scale with a printer is used.
- (6) The gaming device drop shall be counted, wrapped, and reconciled in such a manner to prevent the commingling of gaming device drop coin with coin (for each denomination) from the next gaming device drop until the count of the gaming device drop has been recorded. If the coins are not wrapped immediately after being weighed or counted, they shall be secured and not commingled with other coins.
- (i) The amount of the gaming device drop from each gaming device shall be recorded in ink or other permanent form of recordation on a gaming device count document by the recorder or mechanically printed by the weigh scale.
  - (ii) Corrections to information originally recorded by the count team on gaming device count documentation shall be made by drawing a single line through the error, writing the correct figure

above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.

(A) If a weigh scale interface is used, corrections to gaming device count data shall be made using either of the following:

(1) Drawing a single line through the error on the gaming device document, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team employees. If this procedure is used, an employee independent of the gaming device department and count team shall enter the correct figure into the computer system prior to the generation of related gaming device reports; or

(2) During the count process, correct the error in the computer system and enter the passwords of at least two (2) count team employees. If this procedure is used, an exception report shall be generated by the computer system identifying the gaming device number, the error, the correction, and the count team employees attesting to the correction.

(7) If applicable, the weight shall be converted to dollar amounts prior to the reconciliation of the weigh to the wrap.

(8) If a coin meter is used, a count team member shall convert the coin count for each denomination into dollars and shall enter the results on a summary sheet.

(9) The recorder and at least one (1) other count team member shall sign the weigh tape and the gaming device count document attesting to the accuracy of the weigh/count.

(10) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.

(11) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.

(12) All gaming device count and wrap documentation, including any applicable computer storage media, shall be delivered to the accounting department by a count team member or a person independent of the cashier's department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.

(13) If the coins are transported off the property, a second (alternative) count procedure shall be performed before the coins leave the property. Any variances shall be documented.

(14) Variances. Large (by denomination, either \$1,000 or 2% of the drop, whichever is less) or unusual (e.g., zero for weigh/count or patterned for all counts) variances between the weigh/count and wrap shall be investigated by management personnel independent of the gaming device department, count team, and the cage/vault functions on a timely basis. The results of such investigation shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(j) *Security of the coin room inventory during the gaming device coin count and wrap.* (1) If the count room serves as a coin room and coin room inventory is not secured so as to preclude access by the count team, then the following standards shall apply:



- (i) At the commencement of the gaming device count the following requirements shall be met:
  - (A) The coin room inventory shall be counted by at least two (2) employees, one (1) of whom is a member of the count team and the other is independent of the weigh/count and wrap procedures;
  - (B) The count in paragraph (j)(1)(i)(A) of this section shall be recorded on an appropriate inventory form;
- (ii) Upon completion of the wrap of the gaming device drop:
  - (A) At least two (2) members of the count team (wrap team), independently from each other, shall count the ending coin room inventory;
  - (B) The counts in paragraph (j)(1)(ii)(A) of this section shall be recorded on a summary report(s) that evidences the calculation of the final wrap by subtracting the beginning inventory from the sum of the ending inventory and transfers in and out of the coin room;
  - (C) The same count team members shall compare the calculated wrap to the weigh/count, recording the comparison and noting any variances on the summary report;
  - (D) A member of the cage/vault department shall count the ending coin room inventory by denomination and shall reconcile it to the beginning inventory, wrap, transfers, and weigh/count; and
  - (E) At the conclusion of the reconciliation, at least two (2) count/wrap team members and the verifying employee shall sign the summary report(s) attesting to its accuracy.
- (iii) The functions described in paragraph (j)(1)(ii)(A) and (C) of this section may be performed by only one (1) count team member. That count team member must then sign the summary report, along with the verifying employee, as required under paragraph (j)(1)(ii)(E).
- (2) If the count room is segregated from the coin room, or if the coin room is used as a count room and the coin room inventory is secured to preclude access by the count team, all of the following requirements shall be completed, at the conclusion of the count:
  - (i) At least two (2) members of the count/wrap team shall count the final wrapped gaming device drop independently from each other;
  - (ii) The counts shall be recorded on a summary report;
  - (iii) The same count team members (or the accounting department) shall compare the final wrap to the weigh/count, recording the comparison, and noting any variances on the summary report;
  - (iv) A member of the cage/vault department shall count the wrapped gaming device drop by denomination and reconcile it to the weigh/count;
  - (v) At the conclusion of the reconciliation, at least two (2) count team members and the cage/vault employee shall sign the summary report attesting to its accuracy; and
  - (vi) The wrapped coins (exclusive of proper transfers) shall be transported to the cage, vault or coin vault after the reconciliation of the weigh/count to the wrap.

(k) *Transfers during the gaming device coin count and wrap.* (1) Transfers may be permitted during the count and wrap only if permitted under the internal control standards approved by the Tribal gaming agency.

(2) Each transfer shall be recorded on a separate multi-part form with a preprinted or concurrently-printed form number (used solely for gaming device count transfers) that shall be subsequently reconciled by the accounting department to ensure the accuracy of the reconciled gaming device drop.

(3) Each transfer must be counted and signed for by at least two (2) members of the count team and by a person independent of the count team who is responsible for authorizing the transfer.

(l) *Gaming device drop key control standards.* (1) Gaming device coin drop cabinet keys, including duplicates, shall be maintained by a department independent of the gaming device department.

(2) The physical custody of the keys needed to access gaming device coin drop cabinets, including duplicates, shall require the involvement of two (2) persons, one (1) of whom is independent of the gaming device department.

(3) Two (2) employees (separate from key custodian) shall be required to accompany such keys while checked out and observe each time gaming device drop cabinets are accessed.

(m) *Banking and percentage card game drop box key control standards.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) Procedures shall be developed and implemented to insure that unauthorized access to empty banking or percentage card game drop boxes shall not occur from the time the boxes leave the storage racks until they are placed on the tables.

(3) The involvement of at least two (2) persons independent of the cage department shall be required to access stored empty banking or percentage card game drop boxes.

(4) The release keys shall be separately keyed from the contents keys.

(5) At least two (2) count team members are required to be present at the time count room and other count keys are issued for the count.

(6) All duplicate keys shall be maintained in a manner that provides the same degree of control as is required for the original keys. Records shall be maintained for each key duplicated that indicate the number of keys made and destroyed.

(7) Logs shall be maintained by the custodian of sensitive keys to document authorization of personnel accessing keys.

(n) *Banking and percentage card game drop box release keys.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) The banking and percentage card game drop box release keys shall be maintained by a department independent of the pit department.

(3) Only the person(s) authorized to remove banking and percentage card game drop boxes from the banking and percentage card game tables shall be allowed access to the banking and percentage card game drop box release keys; however, the count team members may have access to the release keys during the soft count in order to reset the banking and percentage card game drop boxes.

(4) Persons authorized to remove the banking and percentage card game drop boxes shall be precluded from having simultaneous access to the banking and percentage card game drop box contents keys and release keys.

(5) For situations requiring access to a banking and percentage card game drop box at a time other than the scheduled drop, the date, time, and signature of employee signing out/in the release key must be documented.

(o) *Bill acceptor canister release keys.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) The bill acceptor canister release keys shall be maintained by a department independent of the gaming device department.

(3) Only the person(s) authorized to remove bill acceptor canisters from the gaming devices shall be allowed access to the release keys.

(4) Persons authorized to remove the bill acceptor canisters shall be precluded from having simultaneous access to the bill acceptor canister contents keys and release keys.

(5) For situations requiring access to a bill acceptor canister at a time other than the scheduled drop, the date, time, and signature of employee signing out/in the release key must be documented.

(p) *Banking and percentage card game drop box storage rack keys.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) Persons authorized to obtain banking and percentage card game drop box storage rack keys shall be precluded from having simultaneous access to banking and percentage card game drop box contents keys, with the exception of the count team.

(q) *Bill acceptor canister storage rack keys.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) Persons authorized to obtain bill acceptor canister storage rack keys shall be precluded from having simultaneous access to bill acceptor canister contents keys, with the exception of the count team.

(r) *Banking and percentage card game drop box contents keys.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) The physical custody of the keys needed for accessing stored, full banking and percentage card game drop box contents shall require the involvement of persons from at least two (2) separate departments, with the exception of the count team.

(3) Access to the banking and percentage card game drop box contents key at other than scheduled count times shall require the involvement of at least two (2) persons from separate departments, including management. The reason for access shall be documented with the signatures of all participants and observers.

(4) Only count team members shall be allowed access to banking and percentage card game drop box contents keys during the count process.

(s) *Bill acceptor canister contents keys.* (1) Tier A gaming operations shall be exempt from compliance with this paragraph if the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, establishes and the gaming operation complies with procedures that maintain adequate key control and restricts access to the keys.

(2) The physical custody of the keys needed for accessing stored, full bill acceptor canister contents shall require involvement of persons from two (2) separate departments, with the exception of the count team.

(3) Access to the bill acceptor canister contents key at other than scheduled count times shall require the involvement of at least two (2) persons from separate departments, one (1) of whom must be a supervisor. The reason for access shall be documented with the signatures of all participants and observers.

(4) Only the count team members shall be allowed access to bill acceptor canister contents keys during the count process.

(t) *Gaming device computerized key security systems.* (1) Computerized key security systems which restrict access to the gaming device drop and count keys through the use of passwords, keys or other means, other than a key custodian, must provide the same degree of control as indicated in the aforementioned key control standards; refer to paragraphs (l), (o), (q) and (s) of this section. Note: This standard does not apply to the system administrator. The system administrator is defined in paragraph (t)(2)(i) of this section.

(2) For computerized key security systems, the following additional gaming device key control procedures apply:

(i) Management personnel independent of the gaming device department shall assign and control user access to keys in the computerized key security system (*i.e.*, system administrator) to ensure that gaming device drop and count keys are restricted to authorized employees.

(ii) In the event of an emergency or the key box is inoperable, access to the emergency manual key(s) (a.k.a. override key) used to access the box containing the gaming device drop and count keys requires the physical involvement of at least three (3) persons from separate departments, including management. The date, time, and reason for access, must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(iii) The custody of the keys issued pursuant to paragraph (t)(2)(ii) of this section requires the presence of two (2) persons from separate departments from the time of their issuance until the time of their return.

(iv) Routine physical maintenance that requires accessing the emergency manual key(s) (a.k.a. override key) and does not involve the accessing of the gaming device drop and count keys requires the presence of two (2) persons from separate departments. The date, time and reason for access must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(3) For computerized key security systems controlling access to gaming device drop and count keys, accounting/audit personnel, independent of the system administrator, will perform the following procedures:

(i) Daily, review the report generated by the computerized key security system indicating the transactions performed by the individual(s) that adds, deletes, and changes user's access within the system (*i.e.*, system administrator). Determine whether the transactions completed by the system administrator provide an adequate control over the access to the gaming device drop and count keys. Also, determine whether any gaming device drop and count key(s) removed or returned to the key cabinet by the system administrator was properly authorized.

(ii) For at least one (1) day each month, review the report generated by the computerized key security system indicating all transactions performed to determine whether any unusual gaming device drop and count key removals or key returns occurred.

(iii) At least quarterly, review a sample of users that are assigned access to the gaming device drop and count keys to determine that their access to the assigned keys is adequate relative to their job position.

(iv) All noted improper transactions or unusual occurrences are investigated with the results documented.

(4) Quarterly, an inventory of all count room, drop box release, storage rack and contents keys is performed and reconciled to records of keys made, issued, and destroyed. Documented investigations shall be performed for all unaccounted keys.

(u) *Banking and percentage card games computerized key security systems.* (1) Computerized key security systems which restrict access to the banking and percentage card game drop and count keys through the use of passwords, keys or other means, other than a key custodian, must provide the same degree of control as indicated in the aforementioned key control standards; refer to paragraphs (m), (n), (p) and (r) of this section. Note: This standard does not apply to the system administrator. The system administrator is defined in paragraph (u)(2)(ii) of this section.

(2) For computerized key security systems, the following additional banking and percentage card game key control procedures shall apply:

(i) Management personnel independent of the banking and percentage card game department shall assign and control user access to keys in the computerized key security system (*i.e.*, system administrator) to ensure that banking and percentage card game drop and count keys are restricted to authorized employees.

(ii) In the event of an emergency or the key box is inoperable, access to the emergency manual key(s) (a.k.a. override key) used to access the box containing the banking and percentage card

game drop and count keys requires the physical involvement of at least three (3) persons from separate departments, including management. The date, time, and reason for access, must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(iii) The custody of the keys issued pursuant to paragraph (u)(2)(ii) of this section requires the presence of two (2) persons from separate departments from the time of their issuance until the time of their return.

(iv) Routine physical maintenance that requires accessing the emergency manual key(s) (a.k.a. override key) and does not involve the accessing of the banking and percentage card games drop and count keys, only requires the presence of two (2) persons from separate departments. The date, time and reason for access must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(3) For computerized key security systems controlling access to banking and percentage card games drop and count keys, accounting/audit personnel, independent of the system administrator, will perform the following procedures:

(i) Daily, review the report generated by the computerized key security system indicating the transactions performed by the individual(s) that adds, deletes, and changes user's access within the system (*i.e.*, system administrator). Determine whether the transactions completed by the system administrator provide an adequate control over the access to the banking and percentage card games drop and count keys. Also, determine whether any banking and percentage card games drop and count key(s) removed or returned to the key cabinet by the system administrator was properly authorized.

(ii) For at least one (1) day each month, review the report generated by the computerized key security system indicating all transactions performed to determine whether any unusual banking and percentage card games drop and count key removals or key returns occurred.

(iii) At least quarterly, review a sample of users that are assigned access to the banking and percentage card games drop and count keys to determine that their access to the assigned keys is adequate relative to their job position.

(iv) All noted improper transactions or unusual occurrences are investigated with the results documented.

(4) Quarterly, an inventory of all count room, banking and percentage card game drop box release, storage rack and contents keys is performed and reconciled to records of keys made, issued, and destroyed. Documented investigations shall be performed for all unaccounted keys.

(v) *Emergency drop procedures.* Emergency drop procedures shall be developed by the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency.

(w) *Equipment standards for gaming device count.* (1) A weigh scale calibration module shall be secured so as to prevent unauthorized access (e.g., prenumbered seal, lock and key, etc.).

(2) A person independent of the cage, vault, gaming device, and count team functions shall be required to be present whenever the calibration module is accessed. Such access shall be documented and maintained.

(3) If a weigh scale interface is used, it shall be adequately restricted so as to prevent unauthorized access (passwords, keys, etc.).

(4) If the weigh scale has a zero adjustment mechanism, it shall be physically limited to minor adjustments (e.g., weight of a bucket) or physically situated such that any unnecessary adjustments to it during the weigh process would be observed by other count team members.

(5) The weigh scale and weigh scale interface (if applicable) shall be tested by a person or persons independent of the cage, vault, and gaming device departments and count team at least quarterly. At least annually, this test shall be performed by internal audit in accordance with the internal audit standards. The result of these tests shall be documented and signed by the person or persons performing the test.

(6) Prior to the gaming device count, at least two (2) employees shall verify the accuracy of the weigh scale with varying weights or with varying amounts of previously counted coin for each denomination to ensure the scale is properly calibrated (varying weights/coin from drop to drop is acceptable).

(7) If a mechanical coin counter is used (instead of a weigh scale), the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply, with procedures that are equivalent to those described in paragraphs (u)(4), (u)(5), and (u)(6) of this section.

(8) If a coin meter count machine is used, the count team member shall record the machine number denomination and number of coins in ink on a source document, unless the meter machine automatically records such information.

(i) A count team member shall test the coin meter count machine prior to the actual count to ascertain if the metering device is functioning properly with a predetermined number of coins for each denomination.

**§ 542.22 What are the minimum internal control standards for internal audit for Tier A gaming operations?**

(a) *Internal audit personnel.* (1) For Tier A gaming operations, a separate internal audit department must be maintained. Alternatively, designating personnel (who are independent with respect to the departments/procedures being examined) to perform internal audit work satisfies the requirements of this paragraph.

(2) The internal audit personnel shall report directly to the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe in accordance with the definition of internal audit in §542.2.

(b) *Audits.* (1) Internal audit personnel shall perform audits of all major gaming areas of the gaming operation. The following shall be reviewed at least annually:

(i) Reserved.

(ii) Reserved.

(iii) Reserved.

(iv) Reserved.

(v) Pari-mutuel wagering, including write and payout procedures, and pari-mutuel auditing procedures;

(vi) Banking and percentage card games, including but not limited to, fill and credit procedures, pit credit play procedures, rim credit procedures, soft drop/count procedures and the subsequent transfer of funds, unannounced testing of count room currency counters and/or currency interface, location and control over sensitive keys, the tracing of source documents to summarized documentation and accounting records, and reconciliation to restricted copies;

(vii) Gaming devices, including but not limited to, jackpot payout and gaming device fill procedures, gaming device drop/count and bill acceptor drop/count and subsequent transfer of funds, unannounced testing of weigh scale and weigh scale interface, unannounced testing of count room currency counters and/or currency interface, gaming device drop cabinet access, tracing of source documents to summarized documentation and accounting records, reconciliation to restricted copies, location and control over sensitive keys, compliance with EPROM duplication procedures, and compliance with MICS procedures for gaming devices that accept currency or coin(s) and issue cash-out tickets or gaming devices that do not accept currency or coin(s) and do not return currency or coin(s);

(viii) Cage and credit procedures including all cage, credit, and collection procedures, and the reconciliation of trial balances to physical instruments on a sample basis. Cage accountability shall be reconciled to the general ledger;

(ix) Information technology functions, including review for compliance with information technology standards;

(x) Complimentary service or item, including but not limited to, procedures whereby complimentary service items are issued, authorized, and redeemed; and

(xi) Any other internal audits as required by the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe.

(2) In addition to the observation and examinations performed under paragraph (b)(1) of this section, follow-up observations and examinations shall be performed to verify that corrective action has been taken regarding all instances of noncompliance cited by internal audit, the independent accountant, and/or the Commission or State gaming agency. The verification shall be performed within six (6) months following the date of notification.

(3) Internal audit observations shall be performed on an unannounced basis (i.e., without the employees being forewarned that their activities will be observed). Additionally, if the independent accountant also performs the internal audit function, the accountant shall perform separate observations of the banking and percentage card games/gaming device drops and counts to satisfy the internal audit observation requirements and independent accountant tests of controls as required by the American Institute of Certified Public Accountants guide.

(c) *Documentation.* (1) Documentation (e.g., checklists, programs, reports, etc.) shall be prepared to evidence all internal audit work performed as it relates to the requirements in this section, including all instances of noncompliance.

(2) The internal audit department shall operate with audit programs, which, at a minimum, address the MICS. Additionally, the department shall properly document the work performed, the conclusions reached, and the resolution of all exceptions. Institute of Internal Auditors standards are recommended but not required.



(d) *Reports.* (1) Reports documenting audits performed shall be maintained and made available to the Commission and State gaming agency upon request.

(2) Such audit reports shall include the following information:

(i) Audit objectives;

(ii) Audit procedures and scope;

(iii) Findings and conclusions;

(iv) Recommendations, if applicable; and

(v) Management's response.

(e) *Material exceptions.* All material exceptions resulting from internal audit work shall be investigated and resolved with the results of such being documented and retained for five years.

(f) *Role of management.* (1) Internal audit findings shall be reported to management.

(2) Management shall be required to respond to internal audit findings stating corrective measures to be taken to avoid recurrence of the audit exception.

(3) Such management responses shall be included in the internal audit report that will be delivered to management, the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe.

(g) *Internal Audit Guidelines.* In connection with the internal audit testing pursuant to paragraph (b)(1) of this section, the Commission or State gaming agency shall develop recommended Internal Audit Guidelines, which shall be available upon request.

**§ 542.23 What are the minimum internal control standards for surveillance for Tier A gaming operations?**

(a) Tier A gaming operations must, at a minimum, maintain and operate an unstaffed surveillance system in a secured location whereby the areas under surveillance are continually recorded.

(b) The entrance to the secured location shall be located so that it is not readily accessible by either gaming operation employees who work primarily on the casino floor, or the general public.

(c) Access to the secured location shall be limited to surveillance personnel, designated employees, and other persons authorized in accordance with the surveillance department policy. Such policy shall be approved by the Tribal gaming agency.

(d) The surveillance system shall include date and time generators that possess the capability to display the date and time of recorded events on video and/or digital recordings. The displayed date and time shall not significantly obstruct the recorded view.

(e) The surveillance department shall ensure staff is trained in the use of the equipment, knowledge of the games, and house rules.

(f) Each camera required by the standards in this section shall be installed in a manner that will prevent it from being readily obstructed, tampered with, or disabled by customers or employees.

(g) Each camera required by the standards in this section shall possess the capability of having its picture recorded. The surveillance system shall include sufficient numbers of recorders to simultaneously record multiple gaming and count room activities, and record the views of all dedicated cameras and motion activated dedicated cameras.

(h) Reasonable effort shall be made to repair each malfunction of surveillance system equipment required by the standards in this section within seventy-two (72) hours after the malfunction is discovered. The Tribal gaming agency shall be notified of any camera(s) that has malfunctioned for more than twenty-four (24) hours.

(1) In the event of a dedicated camera malfunction, the gaming operation and/or the surveillance department shall, upon identification of the malfunction, provide alternative camera coverage or other security measures, such as additional supervisory or security personnel, to protect the subject activity.

(i) Reserved.

(j) Reserved.

(k) Reserved.

*(l) Banking and percentage card games—(1) Operations with four (4) or more banking or percentage card games.* Except as otherwise provided in paragraphs (l)(3), (l)(4), and (l)(5) of this section, the surveillance system of gaming operations operating four (4) or more banking or percentage card games shall provide at a minimum one (1) pan-tilt-zoom camera per two (2) tables and surveillance must be capable of taping:

(i) With sufficient clarity to identify customers and dealers; and

(ii) With sufficient coverage and clarity to simultaneously view the table bank and determine the configuration of wagers, card values, and game outcome.

(iii) One (1) dedicated camera per table and one (1) pan-tilt-zoom camera per four (4) tables may be an acceptable alternative procedure to satisfy the requirements of this paragraph.

*(2) Operations with three (3) or fewer banking or percentage card games.* The surveillance system of gaming operations operating three (3) or fewer banking or percentage card games shall:

(i) Comply with the requirements of paragraph (l)(1) of this section; or

(ii) Have one (1) overhead camera at each table.

*(3) Craps.* All banking card games based upon craps not using dice shall have two (2) dedicated cross view cameras covering both ends of the table.

(4) Reserved.

(5) Reserved.

(m) *Progressive banking and percentage card games.* (1) Progressive banking and percentage card games with a progressive jackpot of \$25,000 or more shall be recorded by dedicated cameras that provide coverage of:

- (i) The table surface, sufficient that the card values and card suits can be clearly identified;
- (ii) An overall view of the entire table with sufficient clarity to identify customers and dealer; and
- (iii) A view of the progressive meter jackpot amount. If several tables are linked to the same progressive jackpot meter, only one (1) meter need be recorded.

(n) *Gaming devices.* (1) Except as otherwise provided in paragraphs (n)(2) and (n)(3) of this section, gaming devices offering a payout of more than \$250,000 shall be recorded by a dedicated camera(s) to provide coverage of:

- (i) All customers and employees at the gaming device; and
- (ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(2) *In-house progressive gaming device.* In-house progressive gaming devices offering a base payout amount (jackpot reset amount) of more than \$100,000 shall be recorded by a dedicated camera(s) to provide coverage of:

- (i) All customers and employees at the gaming device; and
- (ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(3) *Wide-area progressive gaming device.* Wide-area progressive gaming devices offering a base payout amount of \$1 million or more and monitored by an independent vendor utilizing an on-line progressive computer system shall be recorded by a dedicated camera(s) to provide coverage of:

- (i) All customers and employees at the gaming device; and
- (ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(4) Notwithstanding paragraph (n)(1) of this section, if the gaming device is a multi-game gaming device, the Tribal gaming agency, or the gaming operation subject to the approval of the Tribal gaming agency, may develop and implement alternative procedures to verify payouts.

(o) *Currency and coin.* The surveillance system shall record a general overview of all areas where currency or coin may be stored or counted.

(p) *Video recording and/or digital record retention.* (1) All video recordings and/or digital records of coverage provided by the dedicated cameras or motion-activated dedicated cameras required by the standards in this section shall be retained for a minimum of seven (7) days.

(2) Recordings involving suspected or confirmed gaming crimes, unlawful activity, or detentions by security personnel, must be retained for a minimum of thirty (30) days.

(3) Duly authenticated copies of video recordings and/or digital records shall be provided to the Commission and State gaming agency upon request.

(q) *Video library log.* A video library log, or comparable alternative procedure approved by the Tribal gaming agency, shall be maintained to demonstrate compliance with the storage, identification, and retention standards required in this section.

(r) *Malfunction and repair log.* (1) Surveillance personnel shall maintain a log or alternative procedure approved by the Tribal gaming agency that documents each malfunction and repair of the surveillance system as defined in this section.

(2) The log shall state the time, date, and nature of each malfunction, the efforts expended to repair the malfunction, and the date of each effort, the reasons for any delays in repairing the malfunction, the date the malfunction is repaired, and where applicable, any alternative security measures that were taken.

#### **§ 542.30 What is a Tier B gaming operation?**

A Tier B gaming operation is one with gross gaming revenues of more than \$5 million but not more than \$15 million.

#### **§ 542.31 What are the minimum internal control standards for drop and count for Tier B gaming operations?**

(a) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(b) *Banking and percentage card game drop standards.* (1) The setting out of empty banking and percentage card game drop boxes and the drop shall be a continuous process.

(2) At the end of each shift:

(i) All locked banking and percentage card game drop boxes shall be removed from the tables by a person independent of the pit shift being dropped;

(ii) A separate drop box shall be placed on each table opened at any time during each shift or a gaming operation may utilize a single drop box with separate openings and compartments for each shift; and

(iii) Upon removal from the tables, banking and percentage card game drop boxes shall be transported directly to the count room or other equivalently secure area with comparable controls and locked in a secure manner until the count takes place.

(3) If drop boxes are not placed on all tables, then the pit department shall document which tables were open during the shift.

(4) The transporting of banking and percentage card game drop boxes shall be performed by a minimum of two (2) persons, at least one (1) of whom is independent of the pit shift being dropped.

(5) All banking and percentage card game drop boxes shall be posted with a number corresponding to a permanent number on the gaming table and marked to indicate game, table number, and shift.

(6) Surveillance shall be notified when the drop is to begin so that surveillance may monitor the activities.

(c) *Soft count room personnel.* (1) The banking and percentage card game soft count and the gaming device bill acceptor count shall be performed by a minimum of two (2) employees.

(i) The count shall be viewed live, or on video recording and/or digital record, within seven (7) days by an employee independent of the count.

(2) Count room personnel shall not be allowed to exit or enter the count room during the count except for emergencies or scheduled breaks. At no time during the count, shall there be fewer than two (2) employees in the count room until the drop proceeds have been accepted into cage/vault accountability. Surveillance shall be notified whenever count room personnel exit or enter the count room during the count.

(3) Count team members shall be rotated on a routine basis such that the count team is not consistently the same two (2) persons more than four (4) days per week. This standard shall not apply to gaming operations that utilize a count team of more than two (2) persons.

(4) The count team shall be independent of transactions being reviewed and counted. The count team shall be independent of the cage/vault departments, however, a dealer or a cage cashier may be used if this person is not allowed to perform the recording function. An accounting representative may be used if there is an independent audit of all soft count documentation.

(d) *Banking and percentage card game soft count standards.* (1) The banking and percentage card game soft count shall be performed in a soft count room or other equivalently secure area with comparable controls.

(2) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.

(3) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.

(4) The banking and percentage card game drop boxes shall be individually emptied and counted in such a manner to prevent the commingling of funds between boxes until the count of the box has been recorded.

(i) The count of each box shall be recorded in ink or other permanent form of recordation.

(ii) A second count shall be performed by an employee on the count team who did not perform the initial count.

(iii) Corrections to information originally recorded by the count team on soft count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change, unless the count team only has two (2) members in which case the initials of only one (1) verifying count team member is required.

- (5) If currency counters are utilized and the count room table is used only to empty boxes and sort/stack contents, a count team member shall be able to observe the loading and unloading of all currency at the currency counter, including rejected currency.
- (6) Banking and percentage card game drop boxes, when empty, shall be shown to another member of the count team, or to another person who is observing the count, or to surveillance, provided the count is monitored in its entirety by a person independent of the count.
- (7) Orders for fill/credit (if applicable) shall be matched to the fill/credit slips. Fills and credits shall be traced to or recorded on the count sheet.
- (8) Pit marker issue and payment slips (if applicable) removed from the banking and percentage card game drop boxes shall either be:
- (i) Traced to or recorded on the count sheet by the count team; or
  - (ii) Totaled by shift and traced to the totals documented by the computerized system. Accounting personnel shall verify the issue/payment slip for each banking and percentage card game table is accurate.
- (9) Foreign currency exchange forms (if applicable) removed from the banking and percentage card game drop boxes shall be reviewed for the proper daily exchange rate and the conversion amount shall be recomputed by the count team. Alternatively, this may be performed by accounting/auditing employees.
- (10) The opening/closing banking or percentage card game table and marker inventory forms (if applicable) shall either be:
- (i) Examined and traced to or recorded on the count sheet; or
  - (ii) If a computerized system is used, accounting personnel can trace the opening/closing banking or percentage card game table and marker inventory forms to the count sheet. Discrepancies shall be investigated with the findings documented and maintained for inspection.
- (11) The count sheet shall be reconciled to the total drop by a count team member who shall not function as the sole recorder.
- (12) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.
- (13) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.
- (14) The count sheet, with all supporting documents, shall be delivered to the accounting department by a count team member or a person independent of the cashiers department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.
- (15) Access to stored, full banking and percentage card game drop boxes shall be restricted to authorized members of the drop and count teams.

(e) *Gaming device bill acceptor drop standards.* (1) A minimum of two (2) employees shall be involved in the removal of the gaming device drop, at least one (1) of whom is independent of the gaming device department.

(2) All bill acceptor canisters shall be removed only at the time previously designated by the gaming operation and reported to the Tribal gaming agency, except for emergency drops.

(3) Surveillance shall be notified when the drop is to begin so that surveillance may monitor the activities.

(4) The bill acceptor canisters shall be removed by a person independent of the gaming device department then transported directly to the count room or other equivalently secure area with comparable controls and locked in a secure manner until the count takes place.

(i) Security shall be provided over the bill acceptor canisters removed from the gaming devices and awaiting transport to the count room.

(ii) The transporting of bill acceptor canisters shall be performed by a minimum of two (2) persons, at least one (1) of whom is independent of the gaming device department.

(5) All bill acceptor canisters shall be posted with a number corresponding to a permanent number on the gaming device.

(f) *Gaming device bill acceptor count standards.* (1) The gaming device bill acceptor count shall be performed in a soft count room or other equivalently secure area with comparable controls.

(2) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.

(3) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.

(4) The bill acceptor canisters shall be individually emptied and counted in such a manner to prevent the commingling of funds between canisters until the count of the canister has been recorded.

(i) The count of each canister shall be recorded in ink or other permanent form of recordation.

(ii) Corrections to information originally recorded by the count team on soft count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.

(5) If currency counters are utilized and the count room table is used only to empty canisters and sort/stack contents, a count team member shall be able to observe the loading and unloading of all currency at the currency counter, including rejected currency.

(6) Canisters, when empty, shall be shown to another member of the count team, to another person who is observing the count, or to surveillance, provided that the count is monitored in its entirety by a person independent of the count.

(7) The count sheet shall be reconciled to the total drop by a count team member who shall not function as the sole recorder.

(8) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.

(9) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.

(10) The count sheet, with all supporting documents, shall be delivered to the accounting department by a count team member or a person independent of the cashiers department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.

(11) Access to stored bill acceptor canisters, full or empty, shall be restricted to:

(i) Authorized members of the drop and count teams; and

(ii) Authorized personnel in an emergency for the resolution of a problem.

(g) *Gaming device coin drop standards.* (1) A minimum of two (2) employees shall be involved in the removal of the gaming device drop, at least one (1) of whom is independent of the gaming device department.

(2) All drop buckets shall be removed only at the time previously designated by the gaming operation and reported to the Tribal gaming agency, except for emergency drops.

(3) Surveillance shall be notified when the drop is to begin in order that surveillance may monitor the activities.

(4) Security shall be provided over the buckets removed from the gaming device drop cabinets and awaiting transport to the count room.

(5) As each gaming device is opened, the contents shall be tagged with its respective gaming device number if the bucket is not permanently marked with the gaming device number. The contents shall be transported directly to the area designated for the counting of such drop proceeds. If more than one (1) trip is required to remove the contents of the gaming devices, the filled carts of coins shall be securely locked in the room designed for counting or in another equivalently secure area with comparable controls. There shall be a locked covering on any carts in which the drop route includes passage out of doors.

(i) Alternatively, a smart bucket system that electronically identifies and tracks the gaming device number, and facilitates the proper recognition of gaming revenue, shall satisfy the requirements of this paragraph.

(6) Each drop bucket in use shall be:

(i) Housed in a locked compartment separate from any other compartment of the gaming device and keyed differently than other gaming device compartments; and



(ii) Identifiable to the gaming device from which it is removed. If the gaming device is identified with a removable tag that is placed in the bucket, the tag shall be placed on top of the bucket when it is collected.

(7) Each gaming device shall have drop buckets into which coins or tokens that are retained by the gaming device are collected. Drop bucket contents shall not be used to make change or pay hand-paid payouts.

(8) The collection procedures may include procedures for dropping gaming devices that have trays instead of drop buckets.

(h) *Hard count room personnel.* (1) The weigh/count shall be performed by a minimum of two (2) employees.

(i) The count shall be viewed either live, or on video recording and/or digital record within seven (7) days by an employee independent of the count.

(2) At no time during the weigh/count shall there be fewer than two (2) employees in the count room until the drop proceeds have been accepted into cage/vault accountability. Surveillance shall be notified whenever count room personnel exit or enter the count room during the count.

(i) If the gaming device count is conducted with a continuous mechanical count meter that is not reset during the count and is verified in writing by at least two (2) employees at the start and end of each denomination count, then one (1) employee may perform the wrap.

(3) Count team members shall be rotated on a routine basis such that the count team is not consistently the same two (2) persons more than four (4) days per week. This standard shall not apply to gaming operations that utilize a count team of more than two (2) persons.

(4) The count team shall be independent of transactions being reviewed and counted. The count team shall be independent of the cage/vault departments, unless they are non-supervisory gaming device employees and perform the laborer function only (a non-supervisory gaming device employee is defined as a person below the level of gaming device shift supervisor). A cage cashier may be used if this person is not allowed to perform the recording function. An accounting representative may be used if there is an independent audit of all count documentation.

(i) *Gaming device coin count and wrap standards.* (1) Coins shall include tokens.

(2) The gaming device coin count and wrap shall be performed in a count room or other equivalently secure area with comparable controls.

(i) Alternatively, an on-the-floor drop system utilizing a mobile scale shall satisfy the requirements of this paragraph, subject to the following conditions:

(A) The gaming operation shall utilize and maintain an effective on-line gaming device monitoring system, as described in §542.13(m)(3);

(B) Components of the on-the-floor drop system shall include, but not be limited to, a weigh scale, a laptop computer through which weigh/count applications are operated, a security camera available for the mobile scale system, and a VCR or other video recording device to be housed within the video compartment of the mobile scale. The system may include a mule cart used for mobile weigh scale system locomotion.

- (C) The gaming operation must obtain the security camera available with the system, and this camera must be added in such a way as to eliminate tampering.
- (D) Prior to the drop, the drop/count team shall ensure the scale batteries are charged;
- (E) Prior to the drop, a videotape or other video recording media shall be inserted into the VCR or other video recording device used to record the drop in conjunction with the security camera system and the VCR or other video recording device shall be activated;
- (F) The weigh scale test shall be performed prior to removing the unit from the hard count room for the start of the weigh/drop/count;
- (G) Surveillance shall be notified when the weigh/drop/count begins and shall be capable of monitoring the entire process;
- (H) An observer independent of the weigh/drop/count teams (independent observer) shall remain by the weigh scale at all times and shall observe the entire weigh/drop/count process;
- (I) Physical custody of the key(s) needed to access the laptop and video compartment shall require the involvement of two (2) persons, one (1) of whom is independent of the drop and count team;
- (J) The mule key (if applicable), the laptop and video compartment keys, and the remote control for the VCR or other video recording device shall be maintained by a department independent of the gaming device department. The appropriate personnel shall sign out these keys;
- (K) A person independent of the weigh/drop/count teams shall be required to accompany these keys while they are checked out, and observe each time the laptop compartment is opened;
- (L) The laptop access panel shall not be opened outside the hard count room, except in instances when the laptop must be rebooted as a result of a crash, lock up, or other situation requiring immediate corrective action;
- (M) User access to the system shall be limited to those employees required to have full or limited access to complete the weigh/drop/count; and
- (N) When the weigh/drop/count is completed, the independent observer shall access the laptop compartment, end the recording session, eject the videotape or other video recording media, and deliver the videotape or other video recording media to surveillance.
- (3) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.
- (4) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.
- (5) The following functions shall be performed in the counting of the gaming device drop:
- (i) Recorder function, which involves the recording of the gaming device count; and

(ii) Count team supervisor function, which involves the control of the gaming device weigh and wrap process. The supervisor shall not perform the initial recording of the weigh/count unless a weigh scale with a printer is used.

(6) The gaming device drop shall be counted, wrapped, and reconciled in such a manner to prevent the commingling of gaming device drop coin with coin (for each denomination) from the next gaming device drop until the count of the gaming device drop has been recorded. If the coins are not wrapped immediately after being weighed or counted, they shall be secured and not commingled with other coin.

(i) The amount of the gaming device drop from each gaming device shall be recorded in ink or other permanent form of recordation on a gaming device count document by the recorder or mechanically printed by the weigh scale.

(ii) Corrections to information originally recorded by the count team on gaming device count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.

(A) If a weigh scale interface is used, corrections to gaming device count data shall be made using either of the following:

(1) Drawing a single line through the error on the gaming device document, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team employees. If this procedure is used, an employee independent of the gaming device department and count team shall enter the correct figure into the computer system prior to the generation of related gaming device reports; or

(2) During the count process, correct the error in the computer system and enter the passwords of at least two (2) count team employees. If this procedure is used, an exception report shall be generated by the computer system identifying the gaming device number, the error, the correction, and the count team employees attesting to the correction.

(7) If applicable, the weight shall be converted to dollar amounts before the reconciliation of the weigh to the wrap.

(8) If a coin meter is used, a count team member shall convert the coin count for each denomination into dollars and shall enter the results on a summary sheet.

(9) The recorder and at least one (1) other count team member shall sign the weigh tape and the gaming device count document attesting to the accuracy of the weigh/count.

(10) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.

(11) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.

(12) All gaming device count and wrap documentation, including any applicable computer storage media, shall be delivered to the accounting department by a count team member or a person independent of the cashier's department. Alternatively, it may be adequately secured (e.g., locked

container to which only accounting personnel can gain access) until retrieved by the accounting department.

(13) If the coins are transported off the property, a second (alternative) count procedure shall be performed before the coins leave the property. Any variances shall be documented.

(14) Variances. Large (by denomination, either \$1,000 or 2% of the drop, whichever is less) or unusual (e.g., zero for weigh/count or patterned for all counts) variances between the weigh/count and wrap shall be investigated by management personnel independent of the gaming device department, count team, and the cage/vault functions on a timely basis. The results of such investigation shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(j) *Security of the coin room inventory during the gaming device coin count and wrap.* (1) If the count room serves as a coin room and coin room inventory is not secured so as to preclude access by the count team, then the following standards shall apply:

(i) At the commencement of the gaming device count the following requirements shall be met:

(A) The coin room inventory shall be counted by at least two (2) employees, one (1) of whom is a member of the count team and the other is independent of the weigh/count and wrap procedures;

(B) The count in paragraph (j)(1)(i)(A) of this section shall be recorded on an appropriate inventory form;

(ii) Upon completion of the wrap of the gaming device drop:

(A) At least two (2) members of the count team (wrap team), independently from each other, shall count the ending coin room inventory;

(B) The counts in paragraph (j)(1)(ii)(A) of this section shall be recorded on a summary report(s) that evidences the calculation of the final wrap by subtracting the beginning inventory from the sum of the ending inventory and transfers in and out of the coin room;

(C) The same count team members shall compare the calculated wrap to the weigh/count, recording the comparison and noting any variances on the summary report;

(D) A member of the cage/vault department shall count the ending coin room inventory by denomination and shall reconcile it to the beginning inventory, wrap, transfers and weigh/count; and

(E) At the conclusion of the reconciliation, at least two (2) count/wrap team members and the verifying employee shall sign the summary report(s) attesting to its accuracy.

(iii) The functions described in paragraph (j)(1)(ii)(A) and (C) of this section may be performed by only one (1) count team member. That count team member must then sign the summary report, along with the verifying employee, as required under paragraph (j)(1)(ii)(E).

(2) If the count room is segregated from the coin room, or if the coin room is used as a count room and the coin room inventory is secured to preclude access by the count team, all of the following requirements shall be completed, at the conclusion of the count:

- (i) At least two (2) members of the count/wrap team shall count the final wrapped gaming device drop independently from each other;
  - (ii) The counts shall be recorded on a summary report;
  - (iii) The same count team members (or the accounting department) shall compare the final wrap to the weigh/count, recording the comparison, and noting any variances on the summary report;
  - (iv) A member of the cage/vault department shall count the wrapped gaming device drop by denomination and reconcile it to the weigh/count;
  - (v) At the conclusion of the reconciliation, at least two (2) count team members and the cage/vault employee shall sign the summary report attesting to its accuracy; and
  - (vi) The wrapped coins (exclusive of proper transfers) shall be transported to the cage, vault or coin vault after the reconciliation of the weigh/count to the wrap.
- (k) Transfers during the gaming device coin count and wrap.* (1) Transfers may be permitted during the count and wrap only if permitted under the internal control standards approved by the Tribal gaming agency.
- (2) Each transfer shall be recorded on a separate multi-part form with a preprinted or concurrently-printed form number (used solely for gaming device count transfers) that shall be subsequently reconciled by the accounting department to ensure the accuracy of the reconciled gaming device drop.
  - (3) Each transfer must be counted and signed for by at least two (2) members of the count team and by a person independent of the count team who is responsible for authorizing the transfer.
- (l) Gaming device drop key control standards.* (1) Gaming device coin drop cabinet keys, including duplicates, shall be maintained by a department independent of the gaming device department.
- (2) The physical custody of the keys needed to access gaming device coin drop cabinets, including duplicates, shall require the involvement of two (2) persons, one (1) of whom is independent of the gaming device department.
  - (3) Two employees (separate from key custodian) shall be required to accompany such keys while checked out and observe each time gaming device drop cabinets are accessed, unless surveillance is notified each time keys are checked out and surveillance observes the person throughout the period the keys are checked out.
- (m) Banking and percentage card game drop box key control standards.* (1) Procedures shall be developed and implemented to insure that unauthorized access to empty banking and percentage card game drop boxes shall not occur from the time the boxes leave the storage racks until they are placed on the tables.
- (2) The involvement of at least two (2) persons independent of the cage department shall be required to access stored empty banking and percentage card game drop boxes.
  - (3) The release keys shall be separately keyed from the contents keys.

(4) At least two (2) count team members are required to be present at the time count room and other count keys are issued for the count.

(5) All duplicate keys shall be maintained in a manner that provides the same degree of control as is required for the original keys. Records shall be maintained for each key duplicated that indicate the number of keys made and destroyed.

(6) Logs shall be maintained by the custodian of sensitive keys to document authorization of personnel accessing keys.

(n) *Banking and percentage card game drop box release keys.* (1) The banking and percentage card game drop box release keys shall be maintained by a department independent of the pit department.

(2) Only the person(s) authorized to remove banking and percentage card game drop boxes from the banking and percentage card game tables shall be allowed access to the banking and percentage card game drop box release keys; however, the count team members may have access to the release keys during the soft count in order to reset the banking and percentage card game drop boxes.

(3) Persons authorized to remove the banking and percentage card game drop boxes shall be precluded from having simultaneous access to the banking and percentage card game drop box contents keys and release keys.

(4) For situations requiring access to a banking and percentage card game drop box at a time other than the scheduled drop, the date, time, and signature of employee signing out/in the release key must be documented.

(o) *Bill acceptor canister release keys.* (1) The bill acceptor canister release keys shall be maintained by a department independent of the gaming device department.

(2) Only the person(s) authorized to remove bill acceptor canisters from the gaming devices shall be allowed access to the release keys.

(3) Persons authorized to remove the bill acceptor canisters shall be precluded from having simultaneous access to the bill acceptor canister contents keys and release keys.

(4) For situations requiring access to a bill acceptor canister at a time other than the scheduled drop, the date, time, and signature of employee signing out/in the release key must be documented.

(p) *Banking and percentage card game drop box storage rack keys.* Persons authorized to obtain banking and percentage card game drop box storage rack keys shall be precluded from having simultaneous access to banking and percentage card game drop box contents keys with the exception of the count team.

(q) *Bill acceptor canister storage rack keys.* Persons authorized to obtain bill acceptor canister storage rack keys shall be precluded from having simultaneous access to bill acceptor canister contents keys with the exception of the count team.

(r) *Banking and percentage card game drop box contents keys.* (1) The physical custody of the keys needed for accessing stored, full banking and percentage card game drop box contents

shall require the involvement of persons from at least two (2) separate departments, with the exception of the count team.

(2) Access to the banking and percentage card game drop box contents key at other than scheduled count times shall require the involvement of at least two (2) persons from separate departments, including management. The reason for access shall be documented with the signatures of all participants and observers.

(3) Only count team members shall be allowed access to banking and percentage card game drop box contents keys during the count process.

(s) *Bill acceptor canister contents keys.* (1) The physical custody of the keys needed for accessing stored, full bill acceptor canister contents shall require involvement of persons from two (2) separate departments, with the exception of the count team.

(2) Access to the bill acceptor canister contents key at other than scheduled count times shall require the involvement of at least two (2) persons from separate departments, one (1) of whom must be a supervisor. The reason for access shall be documented with the signatures of all participants and observers.

(3) Only the count team members shall be allowed access to bill acceptor canister contents keys during the count process.

(t) *Gaming device computerized key security systems.* (1) Computerized key security systems which restrict access to the gaming device drop and count keys through the use of passwords, keys or other means, other than a key custodian, must provide the same degree of control as indicated in the aforementioned key control standards; refer to paragraphs (l), (o), (q) and (s) of this section. Note: This standard does not apply to the system administrator. The system administrator is defined in paragraph (t)(2)(i) of this section.

(2) For computerized key security systems, the following additional gaming device key control procedures shall apply:

(i) Management personnel independent of the gaming device department shall assign and control user access to keys in the computerized key security system (*i.e.*, system administrator) to ensure that gaming device drop and count keys are restricted to authorized employees.

(ii) In the event of an emergency or the key box is inoperable, access to the emergency manual key(s) (a.k.a. override key) used to access the box containing the gaming device drop and count keys, requires the physical involvement of at least three (3) persons from separate departments, including management. The date, time, and reason for access, must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(iii) The custody of the keys issued pursuant to paragraph (t)(2)(ii) of this section, requires the presence of two (2) persons from separate departments from the time of their issuance until the time of their return.

(iv) Routine physical maintenance that requires accessing the emergency manual key(s) (a.k.a. override key) and does not involve the accessing of the gaming device drop and count keys, requires the presence of two (2) persons from separate departments. The date, time and reason for access must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(3) For computerized key security systems controlling access to gaming device drop and count keys, accounting/audit personnel, independent of the system administrator, will perform the following procedures:

(i) Daily, review the report generated by the computerized key security system indicating the transactions performed by the individual(s) that adds, deletes, and changes user's access within the system (i.e., system administrator). Determine whether the transactions completed by the system administrator provide an adequate control over the access to the gaming device drop and count keys. Also, determine whether any gaming device drop and count key(s) removed or returned to the key cabinet by the system administrator was properly authorized.

(ii) For at least one (1) day each month, review the report generated by the computerized key security system indicating all transactions performed to determine whether any unusual gaming device drop and count key removals or key returns occurred.

(iii) At least quarterly, review a sample of users that are assigned access to the gaming device drop and count keys to determine that their access to the assigned keys is adequate relative to their job position.

(iv) All noted improper transactions or unusual occurrences are investigated with the results documented.

(4) Quarterly, an inventory of all count room, drop box release, storage rack and contents keys is performed, and reconciled to records of keys made, issued, and destroyed. Documented investigations shall be performed for all unaccounted keys.

(u) *Banking and percentage card games computerized key security systems.* (1) Computerized key security systems which restrict access to the banking and percentage card game drop and count keys through the use of passwords, keys or other means, other than a key custodian, must provide the same degree of control as indicated in the aforementioned key control standards, refer to paragraphs (m), (n), (p) and (r) of this section. Note: This standard does not apply to the system administrator. The system administrator is defined in paragraph (u)(2)(ii) of this section.

(2) For computerized key security systems, the following additional banking and percentage card game key control procedures apply:

(i) Management personnel independent of the banking and percentage card game department shall assign and control user access to keys in the computerized key security system (i.e., system administrator) to ensure that banking and percentage card game drop and count keys are restricted to authorized employees.

(ii) In the event of an emergency or the key box is inoperable, access to the emergency manual key(s) (a.k.a. override key) used to access the box containing the banking and percentage card game drop and count keys, requires the physical involvement of at least three (3) persons from separate departments, including management. The date, time, and reason for access, must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(iii) The custody of the keys issued pursuant to paragraph (u)(2)(ii) of this section, requires the presence of two (2) persons from separate departments from the time of their issuance until the time of their return.



- (iv) Routine physical maintenance that requires accessing the emergency manual key(s) (a.k.a. override key) and does not involve the accessing of the banking and percentage card games drop and count keys, requires the presence of two (2) persons from separate departments. The date, time and reason for access must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).
- (3) For computerized key security systems controlling access to banking and percentage card games drop and count keys, accounting/audit personnel, independent of the system administrator, will perform the following procedures:
- (i) Daily, review the report generated by the computerized key security system indicating the transactions performed by the individual(s) that adds, deletes, and changes user's access within the system (i.e., system administrator). Determine whether the transactions completed by the system administrator provide an adequate control over the access to the banking and percentage card games drop and count keys. Also, determine whether any banking and percentage card games drop and count key(s) removed or returned to the key cabinet by the system administrator was properly authorized.
  - (ii) For at least one (1) day each month, review the report generated by the computerized key security system indicating all transactions performed to determine whether any unusual banking and percentage card games drop and count key removals or key returns occurred.
  - (iii) At least quarterly, review a sample of users that are assigned access to the banking and percentage card games drop and count keys to determine that their access to the assigned keys is adequate relative to their job position.
  - (iv) All noted improper transactions or unusual occurrences are investigated with the results documented.
- (4) Quarterly, an inventory of all count room, banking and percentage card game drop box release, storage rack and contents keys is performed, and reconciled to records of keys made, issued, and destroyed. Documented investigations shall be performed for all unaccounted keys.
- (v) *Emergency drop procedures.* Emergency drop procedures shall be developed by the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency.
- (w) *Equipment standards for gaming device count.* (1) A weigh scale calibration module shall be secured so as to prevent unauthorized access (e.g., prenumbered seal, lock and key, etc.).
- (2) A person independent of the cage, vault, gaming device, and count team functions shall be required to be present whenever the calibration module is accessed. Such access shall be documented and maintained.
  - (3) If a weigh scale interface is used, it shall be adequately restricted so as to prevent unauthorized access (passwords, keys, etc.).
  - (4) If the weigh scale has a zero adjustment mechanism, it shall be physically limited to minor adjustments (e.g., weight of a bucket) or physically situated such that any unnecessary adjustments to it during the weigh process would be observed by other count team members.
  - (5) The weigh scale and weigh scale interface (if applicable) shall be tested by a person or persons independent of the cage, vault, and gaming device departments and count team at least quarterly. At least annually, this test shall be performed by internal audit in accordance with the

internal audit standards. The result of these tests shall be documented and signed by the person or persons performing the test.

(6) Prior to the gaming device count, at least two (2) employees shall verify the accuracy of the weigh scale with varying weights or with varying amounts of previously counted coin for each denomination to ensure the scale is properly calibrated (varying weights/coin from drop to drop is acceptable).

(7) If a mechanical coin counter is used (instead of a weigh scale), the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures that are equivalent to those described in paragraphs (u)(4), (u)(5), and (u)(6) of this section.

(8) If a coin meter count machine is used, the count team member shall record the machine number denomination and number of coins in ink on a source document, unless the meter machine automatically records such information.

(i) A count team member shall test the coin meter count machine before the actual count to ascertain if the metering device is functioning properly with a predetermined number of coins for each denomination.

**§ 542.32 What are the minimum internal control standards for internal audit for Tier B gaming operations?**

(a) *Internal audit personnel.* (1) For Tier B gaming operations, a separate internal audit department must be maintained. Alternatively, designating personnel (who are independent with respect to the departments/procedures being examined) to perform internal audit work satisfies the requirements of this paragraph.

(2) The internal audit personnel shall report directly to the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe in accordance with the definition of internal audit in §542.2.

(b) *Audits.* (1) Internal audit personnel shall perform audits of all major gaming areas of the gaming operation. The following shall be reviewed at least annually:

(i) Reserved.

(ii) Reserved.

(iii) Reserved.

(iv) Reserved.

(v) Pari-mutuel wagering, including write and payout procedures, and pari-mutuel auditing procedures;

(vi) Banking and percentage card games, including but not limited to, fill and credit procedures, pit credit play procedures, rim credit procedures, soft drop/count procedures and the subsequent transfer of funds, unannounced testing of count room currency counters and/or currency interface, location and control over sensitive keys, the tracing of source documents to summarized documentation and accounting records, and reconciliation to restricted copies;

(vii) Gaming devices, including but not limited to, jackpot payout and gaming device fill procedures, gaming device drop/count and bill acceptor drop/count and subsequent transfer of funds, unannounced testing of weigh scale and weigh scale interface, unannounced testing of count room currency counters and/or currency interface, gaming device drop cabinet access, tracing of source documents to summarized documentation and accounting records, reconciliation to restricted copies, location and control over sensitive keys, compliance with EPROM duplication procedures, and compliance with MICS procedures for gaming devices that accept currency or coin(s) and issue cash-out tickets or gaming devices that do not accept currency or coin(s) and do not return currency or coin(s);

(viii) Cage and credit procedures including all cage, credit, and collection procedures, and the reconciliation of trial balances to physical instruments on a sample basis. Cage accountability shall be reconciled to the general ledger;

(ix) Information technology functions, including review for compliance with information technology standards;

(x) Complimentary service or item, including but not limited to, procedures whereby complimentary service items are issued, authorized, and redeemed; and

(xi) Any other internal audits as required by the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe.

(2) In addition to the observation and examinations performed under paragraph (b)(1) of this section, follow-up observations and examinations shall be performed to verify that corrective action has been taken regarding all instances of noncompliance cited by internal audit, the independent accountant, and/or the Commission or State gaming agency. The verification shall be performed within six (6) months following the date of notification.

(3) Internal audit observations shall be performed on an unannounced basis (i.e., without the employees being forewarned that their activities will be observed). Additionally, if the independent accountant also performs the internal audit function, the accountant shall perform separate observations of the banking and percentage card games/gaming device drops and counts to satisfy the internal audit observation requirements and independent accountant tests of controls as required by the American Institute of Certified Public Accountants guide.

(c) *Documentation.* (1) Documentation (e.g., checklists, programs, reports, etc.) shall be prepared to evidence all internal audit work performed as it relates to the requirements in this section, including all instances of noncompliance.

(2) The internal audit department shall operate with audit programs, which, at a minimum, address the MICS. Additionally, the department shall properly document the work performed, the conclusions reached, and the resolution of all exceptions. Institute of Internal Auditors standards are recommended but not required.

(d) *Reports.* (1) Reports documenting audits performed shall be maintained and made available to the Commission and State gaming agency upon request.

(2) Such audit reports shall include the following information:

(i) Audit objectives;

(ii) Audit procedures and scope;

(iii) Findings and conclusions;

(iv) Recommendations, if applicable; and

(v) Management's response.

(e) *Material exceptions.* All material exceptions resulting from internal audit work shall be investigated and resolved with the results of such being documented and retained for five (5) years.

(f) *Role of management.* (1) Internal audit findings shall be reported to management.

(2) Management shall be required to respond to internal audit findings stating corrective measures to be taken to avoid recurrence of the audit exception.

(3) Such management responses shall be included in the internal audit report that will be delivered to management, the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe.

(g) *Internal Audit Guidelines.* In connection with the internal audit testing pursuant to paragraph (b)(1) of this section, the Commission or State gaming agency shall develop recommended Internal Audit Guidelines, which shall be available upon request.

**§ 542.33 What are the minimum internal control standards for surveillance for Tier B gaming operations?**

(a) The surveillance system shall be maintained and operated from a staffed surveillance room and shall provide surveillance over gaming areas.

(b) The entrance to the surveillance room shall be located so that it is not readily accessible by either gaming operation employees who work primarily on the casino floor, or the general public.

(c) Access to the surveillance room shall be limited to surveillance personnel, designated employees, and other persons authorized in accordance with the surveillance department policy. Such policy shall be approved by the Tribal gaming agency. The surveillance department shall maintain a sign-in log of other authorized persons entering the surveillance room.

(d) Surveillance room equipment shall have total override capability over all other satellite surveillance equipment located outside the surveillance room.

(e) The surveillance system shall include date and time generators that possess the capability to display the date and time of recorded events on video and/or digital recordings. The displayed date and time shall not significantly obstruct the recorded view.

(f) The surveillance department shall ensure staff is trained in the use of the equipment, knowledge of the games, and house rules.

(g) Each camera required by the standards in this section shall be installed in a manner that will prevent it from being readily obstructed, tampered with, or disabled by customers or employees.

(h) Each camera required by the standards in this section shall possess the capability of having its picture displayed on a monitor and recorded. The surveillance system shall include sufficient

numbers of monitors and recorders to simultaneously display and record multiple gaming and count room activities, and record the views of all dedicated cameras and motion activated dedicated cameras.

(i) Reasonable effort shall be made to repair each malfunction of surveillance system equipment required by the standards in this section within seventy-two (72) hours after the malfunction is discovered. The Tribal gaming agency shall be notified of any camera(s) that has malfunctioned for more than twenty-four (24) hours.

(1) In the event of a dedicated camera malfunction, the gaming operation and/or surveillance department shall immediately provide alternative camera coverage or other security measures, such as additional supervisory or security personnel, to protect the subject activity.

(j) Reserved.

(k) Reserved.

(l) Reserved.

(m) Reserved.

(n) *Pari-mutuel*. The surveillance system shall monitor and record general activities in the pari-mutuel area, to include the ticket writer and cashier areas, with sufficient clarity to identify the employees performing the different functions.

(o) *Banking and percentage card games*—(1) *Operations with four (4) or more banking or percentage card games*. Except as otherwise provided in paragraphs (o)(3), (o)(4), and (o)(5) of this section, the surveillance system of gaming operations operating four (4) or more banking or percentage card games shall provide at a minimum one (1) pan-tilt-zoom camera per two (2) tables and surveillance must be capable of taping:

(i) With sufficient clarity to identify customers and dealers; and

(ii) With sufficient coverage and clarity to simultaneously view the table bank and determine the configuration of wagers, card values, and game outcome.

(iii) One (1) dedicated camera per table and one (1) pan-tilt-zoom camera per four (4) tables may be an acceptable alternative procedure to satisfy the requirements of this paragraph.

(2) *Operations with three (3) or fewer banking or percentage card games*. The surveillance system of gaming operations operating three (3) or fewer banking or percentage card games shall:

(i) Comply with the requirements of paragraph (o)(1) of this section; or

(ii) Have one (1) overhead camera at each table.

(3) *Craps*. All banking card games based upon craps not using dice shall have two (2) dedicated cross view cameras covering both ends of the table.

(4) Reserved.

(5) Reserved.

(p) *Progressive banking and percentage card games.* (1) Progressive banking and percentage card games with a progressive jackpot of \$25,000 or more shall be monitored and recorded by dedicated cameras that provide coverage of:

- (i) The table surface, sufficient that the card values and card suits can be clearly identified;
- (ii) An overall view of the entire table with sufficient clarity to identify customers and dealer; and
- (iii) A view of the progressive meter jackpot amount. If several tables are linked to the same progressive jackpot meter, only one meter need be recorded.

(q) *Gaming devices.* (1) Except as otherwise provided in paragraphs (q)(2) and (q)(3) of this section, gaming devices offering a payout of more than \$250,000 shall be monitored and recorded by a dedicated camera(s) to provide coverage of:

- (i) All customers and employees at the gaming device, and
- (ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(2) *In-house progressive gaming device.* In-house progressive gaming devices offering a base payout amount (jackpot reset amount) of more than \$100,000 shall be monitored and recorded by a dedicated camera(s) to provide coverage of:

- (i) All customers and employees at the gaming device; and
- (ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(3) *Wide-area progressive gaming device.* Wide-area progressive gaming devices offering a base payout amount of \$1 million or more and monitored by an independent vendor utilizing an on-line progressive computer system shall be recorded by a dedicated camera(s) to provide coverage of:

- (i) All customers and employees at the gaming device; and
- (ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(4) Notwithstanding paragraph (q)(1) of this section, if the gaming device is a multi-game gaming device, the Tribal gaming agency, or the gaming operation subject to the approval of the Tribal gaming agency, may develop and implement alternative procedures to verify payouts.

(r) *Cage and vault.* (1) The surveillance system shall monitor and record a general overview of activities occurring in each cage and vault area with sufficient clarity to identify employees within the cage and customers and employees at the counter areas.

(2) Each cashier station shall be equipped with one (1) dedicated overhead camera covering the transaction area.

(3) The surveillance system shall provide an overview of cash transactions. This overview should include the customer, the employee, and the surrounding area.

(s) *Fills and credits.* (1) The cage or vault area in which fills and credits are transacted shall be monitored and recorded by a dedicated camera or motion activated dedicated camera that provides coverage with sufficient clarity to identify the chip values and the amounts on the fill and credit slips.

(2) Controls provided by a computerized fill and credit system may be deemed an adequate alternative to viewing the fill and credit slips.

(t) *Currency and coin.* (1) The surveillance system shall monitor and record with sufficient clarity all areas where currency or coin may be stored or counted.

(2) The surveillance system shall provide for:

(i) Coverage of scales shall be sufficiently clear to view any attempted manipulation of the recorded data.

(ii) Monitoring and recording of the banking and percentage card game drop box storage rack or area by either a dedicated camera or a motion-detector activated camera.

(iii) Monitoring and recording of all areas where coin may be stored or counted, including the hard count room, all doors to the hard count room, all scales and wrapping machines, and all areas where uncounted coin may be stored during the drop and count process.

(iv) Monitoring and recording of soft count room, including all doors to the room, all banking and percentage card game drop boxes, safes, and counting surfaces, and all count team personnel. The counting surface area must be continuously monitored and recorded by a dedicated camera during the soft count.

(v) Monitoring and recording of all areas where currency is sorted, stacked, counted, verified, or stored during the soft count process.

(u) Change booths. The surveillance system shall monitor and record a general overview of the activities occurring in each gaming device change booth.

(v) *Video recording and/or digital record retention.* (1) All video recordings and/or digital records of coverage provided by the dedicated cameras or motion-activated dedicated cameras required by the standards in this section shall be retained for a minimum of seven (7) days.

(2) Recordings involving suspected or confirmed gaming crimes, unlawful activity, or detentions by security personnel, must be retained for a minimum of thirty (30) days.

(3) Duly authenticated copies of video recordings and/or digital records shall be provided to the Commission and State gaming agency upon request.

(w) *Video library log.* A video library log, or comparable alternative procedure approved by the Tribal gaming agency, shall be maintained to demonstrate compliance with the storage, identification, and retention standards required in this section.

(x) *Malfunction and repair log.* (1) Surveillance personnel shall maintain a log or alternative procedure approved by the Tribal gaming agency that documents each malfunction and repair of the surveillance system as defined in this section.

(2) The log shall state the time, date, and nature of each malfunction, the efforts expended to repair the malfunction, and the date of each effort, the reasons for any delays in repairing the malfunction, the date the malfunction is repaired, and where applicable, any alternative security measures that were taken.

(y) *Surveillance log.* (1) Surveillance personnel shall maintain a log of all surveillance activities.

(2) Such log shall be maintained by surveillance room personnel and shall be stored securely within the surveillance department.

(3) At a minimum, the following information shall be recorded in a surveillance log:

(i) Date;

(ii) Time commenced and terminated;

(iii) Activity observed or performed; and

(iv) The name or license credential number of each person who initiates, performs, or supervises the surveillance.

(4) Surveillance personnel shall also record a summary of the results of the surveillance of any suspicious activity. This summary may be maintained in a separate log.

#### **§ 542.40 What is a Tier C gaming operation?**

A Tier C gaming operation is one with annual gross gaming revenues of more than \$15 million.

#### **§ 542.41 What are the minimum internal control standards for drop and count for Tier C gaming operations?**

(a) *Computer applications.* For any computer applications utilized, alternate documentation and/or procedures that provide at least the level of control described by the standards in this section, as approved by the Tribal gaming agency, will be acceptable.

(b) *Banking and percentage card game drop standards.* (1) The setting out of empty banking and percentage card game drop boxes and the drop shall be a continuous process.

(2) At the end of each shift:

(i) All locked banking and percentage card game drop boxes shall be removed from the banking and percentage card game tables by a person independent of the pit shift being dropped;

(ii) A separate drop box shall be placed on each banking and percentage card game table opened at any time during each shift or a gaming operation may utilize a single drop box with separate openings and compartments for each shift; and



(iii) Upon removal from the tables, banking and percentage card game drop boxes shall be transported directly to the count room or other equivalently secure area with comparable controls and locked in a secure manner until the count takes place.

(3) If drop boxes are not placed on all tables, then the pit department shall document which tables were open during the shift.

(4) The transporting of banking and percentage card game drop boxes shall be performed by a minimum of two (2) persons, at least one (1) of whom is independent of the pit shift being dropped.

(5) All banking and percentage card game drop boxes shall be posted with a number corresponding to a permanent number on the gaming table and marked to indicate game, table number, and shift.

(6) Surveillance shall be notified when the drop is to begin so that surveillance may monitor the activities.

(c) *Soft count room personnel.* (1) The banking and percentage card game soft count and the gaming device bill acceptor count shall be performed by a minimum of three (3) employees.

(2) Count room personnel shall not be allowed to exit or enter the count room during the count except for emergencies or scheduled breaks. At no time during the count, shall there be fewer than three (3) employees in the count room until the drop proceeds have been accepted into cage/vault accountability. Surveillance shall be notified whenever count room personnel exit or enter the count room during the count.

(3) Count team members shall be rotated on a routine basis such that the count team is not consistently the same three (3) persons more than four (4) days per week. This standard shall not apply to gaming operations that utilize a count team of more than three (3) persons.

(4) The count team shall be independent of transactions being reviewed and counted. The count team shall be independent of the cage/vault departments, however, an accounting representative may be used if there is an independent audit of all soft count documentation.

(d) *Banking and percentage card game soft count standards.* (1) The banking and percentage card game soft count shall be performed in a soft count room or other equivalently secure area with comparable controls.

(2) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.

(3) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.

(4) The banking and percentage card game drop boxes shall be individually emptied and counted in such a manner to prevent the commingling of funds between boxes until the count of the box has been recorded.

(i) The count of each box shall be recorded in ink or other permanent form of recordation.

- (ii) A second count shall be performed by an employee on the count team who did not perform the initial count.
- (iii) Corrections to information originally recorded by the count team on soft count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.
- (5) If currency counters are utilized and the count room table is used only to empty boxes and sort/stack contents, a count team member shall be able to observe the loading and unloading of all currency at the currency counter, including rejected currency.
- (6) Banking and percentage card game drop boxes, when empty, shall be shown to another member of the count team, or to another person who is observing the count, or to surveillance, provided the count is monitored in its entirety by a person independent of the count.
- (7) Orders for fill/credit (if applicable) shall be matched to the fill/credit slips. Fills and credits shall be traced to or recorded on the count sheet.
- (8) Pit marker issue and payment slips (if applicable) removed from the banking and percentage card game drop boxes shall either be:
  - (i) Traced to or recorded on the count sheet by the count team; or
  - (ii) Totaled by shift and traced to the totals documented by the computerized system. Accounting personnel shall verify the issue/payment slip for each table is accurate.
- (9) Foreign currency exchange forms (if applicable) removed from the banking and percentage card game drop boxes shall be reviewed for the proper daily exchange rate and the conversion amount shall be recomputed by the count team. Alternatively, this may be performed by accounting/auditing employees.
- (10) The opening/closing banking or percentage card game table and marker inventory forms (if applicable) shall either be:
  - (i) Examined and traced to or recorded on the count sheet; or
  - (ii) If a computerized system is used, accounting personnel can trace the opening/closing banking or percentage card game table and marker inventory forms to the count sheet. Discrepancies shall be investigated with the findings documented and maintained for inspection.
- (11) The count sheet shall be reconciled to the total drop by a count team member who shall not function as the sole recorder.
- (12) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.
- (13) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.
- (14) The count sheet, with all supporting documents, shall be delivered to the accounting department by a count team member or a person independent of the cashiers department.

Alternatively, it may be adequately secured (e.g., locked container in which only accounting personnel can gain access) until retrieved by the accounting department.

(15) Access to stored, full banking and percentage card game drop boxes shall be restricted to authorized members of the drop and count teams.

(e) *Gaming device bill acceptor drop standards.* (1) A minimum of three (3) employees shall be involved in the removal of the gaming device drop, at least one (1) of whom is independent of the gaming device department.

(2) All bill acceptor canisters shall be removed only at the time previously designated by the gaming operation and reported to the Tribal gaming agency, except for emergency drops.

(3) Surveillance shall be notified when the drop is to begin so that surveillance may monitor the activities.

(4) The bill acceptor canisters shall be removed by a person independent of the gaming device department then transported directly to the count room or other equivalently secure area with comparable controls and locked in a secure manner until the count takes place.

(i) Security shall be provided over the bill acceptor canisters removed from the gaming devices and awaiting transport to the count room.

(ii) The transporting of bill acceptor canisters shall be performed by a minimum of two (2) persons, at least one (1) of whom is independent of the gaming device department.

(5) All bill acceptor canisters shall be posted with a number corresponding to a permanent number on the gaming device.

(f) *Gaming device bill acceptor count standards.* (1) The gaming device bill acceptor count shall be performed in a soft count room or other equivalently secure area with comparable controls.

(2) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.

(3) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.

(4) The bill acceptor canisters shall be individually emptied and counted in such a manner to prevent the commingling of funds between canisters until the count of the canister has been recorded.

(i) The count of each canister shall be recorded in ink or other permanent form of recordation.

(ii) Corrections to information originally recorded by the count team on soft count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.

(5) If currency counters are utilized and the count room table is used only to empty canisters and sort/stack contents, a count team member shall be able to observe the loading and unloading of all currency at the currency counter, including rejected currency.

- (6) Canisters, when empty, shall be shown to another member of the count team, or to another person who is observing the count, or to surveillance, provided that the count is monitored in its entirety by a person independent of the count.
- (7) The count sheet shall be reconciled to the total drop by a count team member who shall not function as the sole recorder.
- (8) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.
- (9) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.
- (10) The count sheet, with all supporting documents, shall be delivered to the accounting department by a count team member or a person independent of the cashiers department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.
- (11) Access to stored bill acceptor canisters, full or empty, shall be restricted to:
- (i) Authorized members of the drop and count teams; and
  - (ii) Authorized personnel in an emergency for the resolution of a problem.
- (g) *Gaming device coin drop standards.* (1) A minimum of three (3) employees shall be involved in the removal of the gaming device drop, at least one (1) of whom is independent of the gaming device department.
- (2) All drop buckets shall be removed only at the time previously designated by the gaming operation and reported to the Tribal gaming agency, except for emergency drops.
- (3) Surveillance shall be notified when the drop is to begin in order that surveillance may monitor the activities.
- (4) Security shall be provided over the buckets removed from the gaming device drop cabinets and awaiting transport to the count room.
- (5) As each gaming device is opened, the contents shall be tagged with its respective gaming device number if the bucket is not permanently marked with the gaming device number. The contents shall be transported directly to the area designated for the counting of such drop proceeds. If more than one (1) trip is required to remove the contents of the gaming devices, the filled carts of coins shall be securely locked in the room designed for counting or in another equivalently secure area with comparable controls. There shall be a locked covering on any carts in which the drop route includes passage out of doors.
- (i) Alternatively, a smart bucket system that electronically identifies and tracks the gaming device number, and facilitates the proper recognition of gaming revenue, shall satisfy the requirements of this paragraph.

(6) Each drop bucket in use shall be:

(i) Housed in a locked compartment separate from any other compartment of the gaming device and keyed differently than other gaming device compartments; and

(ii) Identifiable to the gaming device from which it is removed. If the gaming device is identified with a removable tag that is placed in the bucket, the tag shall be placed on top of the bucket when it is collected.

(7) Each gaming device shall have drop buckets into which coins or tokens that are retained by the gaming device are collected. Drop bucket contents shall not be used to make change or pay hand-paid payouts.

(8) The collection procedures may include procedures for dropping gaming devices that have trays instead of drop buckets.

(h) *Hard count room personnel.* (1) The weigh/count shall be performed by a minimum of three (3) employees.

(2) At no time during the weigh/count shall there be fewer than three (3) employees in the count room until the drop proceeds have been accepted into cage/vault accountability. Surveillance shall be notified whenever count room personnel exit or enter the count room during the count.

(i) If the gaming device count is conducted with a continuous mechanical count meter that is not reset during the count and is verified in writing by at least three (3) employees at the start and end of each denomination count, then one (1) employee may perform the wrap.

(3) Count team members shall be rotated on a routine basis such that the count team is not consistently the same three (3) persons more than four (4) days per week. This standard shall not apply to gaming operations that utilize a count team of more than three (3) persons.

(4) The count team shall be independent of transactions being reviewed and counted. The count team shall be independent of the cage/vault departments, unless they are non-supervisory gaming device employees and perform the laborer function only (a non-supervisory gaming device employee is defined as a person below the level of gaming device shift supervisor). A cage cashier may be used if this person is not allowed to perform the recording function. An accounting representative may be used if there is an independent audit of all count documentation.

(i) *Gaming device coin count and wrap standards.* (1) Coins shall include tokens.

(2) The gaming device coin count and wrap shall be performed in a count room or other equivalently secure area with comparable controls.

(i) Alternatively, an on-the-floor drop system utilizing a mobile scale shall satisfy the requirements of this paragraph, subject to the following conditions:

(A) The gaming operation shall utilize and maintain an effective on-line gaming device monitoring system, as described in §542.13(m)(3);

(B) Components of the on-the-floor drop system shall include, but not be limited to, a weigh scale, a laptop computer through which weigh/count applications are operated, a security camera available for the mobile scale system, and a VCR or other video recording device to be housed

within the video compartment of the mobile scale. The system may include a mule cart used for mobile weigh scale system locomotion.

(C) The gaming operation must obtain the security camera available with the system, and this camera must be added in such a way as to eliminate tampering.

(D) Prior to the drop, the drop/count team shall ensure the scale batteries are charged;

(E) Prior to the drop, a videotape or other video recording media shall be inserted into the VCR or other video recording device used to record the drop in conjunction with the security camera system and the VCR or other video recording device shall be activated;

(F) The weigh scale test shall be performed prior to removing the unit from the hard count room for the start of the weigh/drop/count;

(G) Surveillance shall be notified when the weigh/drop/count begins and shall be capable of monitoring the entire process;

(H) An observer independent of the weigh/drop/count teams (independent observer) shall remain by the weigh scale at all times and shall observe the entire weigh/drop/count process;

(I) Physical custody of the key(s) needed to access the laptop and video compartment shall require the involvement of two (2) persons, one (1) of whom is independent of the drop and count team;

(J) The mule key (if applicable), the laptop and video compartment keys, and the remote control for the VCR or other video recording device shall be maintained by a department independent of the gaming device department. The appropriate personnel shall sign out these keys;

(K) A person independent of the weigh/drop/count teams shall be required to accompany these keys while they are checked out, and observe each time the laptop compartment is opened;

(L) The laptop access panel shall not be opened outside the hard count room, except in instances when the laptop must be rebooted as a result of a crash, lock up, or other situation requiring immediate corrective action;

(M) User access to the system shall be limited to those employees required to have full or limited access to complete the weigh/drop/count; and

(N) When the weigh/drop/count is completed, the independent observer shall access the laptop compartment, end the recording session, eject the videotape or other video recording media, and deliver the videotape or other video recording media to surveillance.

(3) Access to the count room during the count shall be restricted to members of the drop and count teams, with the exception of authorized observers, supervisors for resolution of problems, and authorized maintenance personnel.

(4) If counts from various revenue centers occur simultaneously in the count room, procedures shall be in effect that prevent the commingling of funds from different revenue centers.

- (5) The following functions shall be performed in the counting of the gaming device drop:
- (i) Recorder function, which involves the recording of the gaming device count; and
  - (ii) Count team supervisor function, which involves the control of the gaming device weigh and wrap process. The supervisor shall not perform the initial recording of the weigh/count unless a weigh scale with a printer is used.
- (6) The gaming device drop shall be counted, wrapped, and reconciled in such a manner to prevent the commingling of gaming device drop coin with coin (for each denomination) from the next gaming device drop until the count of the gaming device drop has been recorded. If the coins are not wrapped immediately after being weighed or counted, they shall be secured and not commingled with other coin.
- (i) The amount of the gaming device drop from each gaming device shall be recorded in ink or other permanent form of recordation on a gaming device count document by the recorder or mechanically printed by the weigh scale.
  - (ii) Corrections to information originally recorded by the count team on gaming device count documentation shall be made by drawing a single line through the error, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team members who verified the change.
- (A) If a weigh scale interface is used, corrections to gaming device count data shall be made using either of the following:
- (1) Drawing a single line through the error on the gaming device document, writing the correct figure above the original figure, and then obtaining the initials of at least two (2) count team employees. If this procedure is used, an employee independent of the gaming device department and count team shall enter the correct figure into the computer system prior to the generation of related gaming device reports; or
  - (2) During the count process, correct the error in the computer system and enter the passwords of at least two (2) count team employees. If this procedure is used, an exception report shall be generated by the computer system identifying the gaming device number, the error, the correction, and the count team employees attesting to the correction.
- (7) If applicable, the weight shall be converted to dollar amounts before the reconciliation of the weigh to the wrap.
- (8) If a coin meter is used, a count team member shall convert the coin count for each denomination into dollars and shall enter the results on a summary sheet.
- (9) The recorder and at least one (1) other count team member shall sign the weigh tape and the gaming device count document attesting to the accuracy of the weigh/count.
- (10) All members of the count team shall sign the count document or a summary report to attest to their participation in the count.
- (11) All drop proceeds and cash equivalents that were counted shall be turned over to the cage or vault cashier (who shall be independent of the count team) or to an authorized person/employee independent of the revenue generation and the count process for verification. Such person shall certify by signature as to the accuracy of the drop proceeds delivered and received.

(12) All gaming device count and wrap documentation, including any applicable computer storage media, shall be delivered to the accounting department by a count team member or a person independent of the cashier's department. Alternatively, it may be adequately secured (e.g., locked container to which only accounting personnel can gain access) until retrieved by the accounting department.

(13) If the coins are transported off the property, a second (alternative) count procedure shall be performed before the coins leave the property. Any variances shall be documented.

(14) Variances. Large (by denomination, either \$1,000 or 2% of the drop, whichever is less) or unusual (e.g., zero for weigh/count or patterned for all counts) variances between the weigh/count and wrap shall be investigated by management personnel independent of the gaming device department, count team, and the cage/vault functions on a timely basis. The results of such investigation shall be documented, maintained for inspection, and provided to the Tribal gaming agency upon request.

(j) *Security of the count room inventory during the gaming device coin count and wrap.* (1) If the count room serves as a coin room and coin room inventory is not secured so as to preclude access by the count team, then the following standards shall apply:

(i) At the commencement of the gaming device count the following requirements shall be met:

(A) The coin room inventory shall be counted by at least two (2) employees, one (1) of whom is a member of the count team and the other is independent of the weigh/count and wrap procedures;

(B) The count in paragraph (j)(1)(i)(A) of this section shall be recorded on an appropriate inventory form;

(ii) Upon completion of the wrap of the gaming device drop:

(A) At least two (2) members of the count team (wrap team), independently from each other, shall count the ending coin room inventory;

(B) The counts in paragraph (j)(1)(ii)(A) of this section shall be recorded on a summary report(s) that evidences the calculation of the final wrap by subtracting the beginning inventory from the sum of the ending inventory and transfers in and out of the coin room;

(C) The same count team members shall compare the calculated wrap to the weigh/count, recording the comparison and noting any variances on the summary report;

(D) A member of the cage/vault department shall count the ending coin room inventory by denomination and shall reconcile it to the beginning inventory, wrap, transfers, and weigh/count; and

(E) At the conclusion of the reconciliation, at least two (2) count/wrap team members and the verifying employee shall sign the summary report(s) attesting to its accuracy.

(2) If the count room is segregated from the coin room, or if the coin room is used as a count room and the coin room inventory is secured to preclude access by the count team, all of the following requirements shall be completed, at the conclusion of the count:

(i) At least two (2) members of the count/wrap team shall count the final wrapped gaming device drop independently from each other;



- (ii) The counts shall be recorded on a summary report;
  - (iii) The same count team members (or the accounting department) shall compare the final wrap to the weigh/count, recording the comparison and noting any variances on the summary report;
  - (iv) A member of the cage/vault department shall count the wrapped gaming device drop by denomination and reconcile it to the weigh/count;
  - (v) At the conclusion of the reconciliation, at least two (2) count team members and the cage/vault employee shall sign the summary report attesting to its accuracy; and
  - (vi) The wrapped coins (exclusive of proper transfers) shall be transported to the cage, vault or coin vault after the reconciliation of the weigh/count to the wrap.
- (k) *Transfers during the gaming device coin count and wrap.* (1) Transfers may be permitted during the count and wrap only if permitted under the internal control standards approved by the Tribal gaming agency.
- (2) Each transfer shall be recorded on a separate multi-part form with a preprinted or concurrently-printed form number (used solely for gaming device count transfers) that shall be subsequently reconciled by the accounting department to ensure the accuracy of the reconciled gaming device drop.
  - (3) Each transfer must be counted and signed for by at least two (2) members of the count team and by a person independent of the count team who is responsible for authorizing the transfer.
- (l) *Gaming device drop key control standards.* (1) Gaming device coin drop cabinet keys, including duplicates, shall be maintained by a department independent of the gaming device department.
- (2) The physical custody of the keys needed to access gaming device coin drop cabinets, including duplicates, shall require the involvement of two (2) persons, one (1) of whom is independent of the gaming device department.
  - (3) Two (2) employees (separate from key custodian) shall be required to accompany such keys while checked out and observe each time gaming device drop cabinets are accessed, unless surveillance is notified each time keys are checked out and surveillance observes the person throughout the period the keys are checked out.
- (m) *Banking and percentage card game drop box key control standards.* (1) Procedures shall be developed and implemented to insure that unauthorized access to empty banking and percentage card game drop boxes shall not occur from the time the boxes leave the storage racks until they are placed on the tables.
- (2) The involvement of at least two (2) persons independent of the cage department shall be required to access stored empty banking and percentage card game drop boxes.
  - (3) The release keys shall be separately keyed from the contents keys.
  - (4) At least three (3) (two (2) for banking and percentage card game drop box keys in operations with three (3) banking or percentage card games or fewer) count team members are required to be present at the time count room and other count keys are issued for the count.

(5) All duplicate keys shall be maintained in a manner that provides the same degree of control as is required for the original keys. Records shall be maintained for each key duplicated that indicate the number of keys made and destroyed.

(6) Logs shall be maintained by the custodian of sensitive keys to document authorization of personnel accessing keys.

(n) *Banking and percentage card game drop box release keys.* (1) The banking and percentage card game drop box release keys shall be maintained by a department independent of the pit department.

(2) Only the person(s) authorized to remove banking and percentage card game drop boxes from the tables shall be allowed access to the banking and percentage card game drop box release keys; however, the count team members may have access to the release keys during the soft count in order to reset the banking and percentage card game drop boxes.

(3) Persons authorized to remove the banking and percentage card game drop boxes shall be precluded from having simultaneous access to the banking and percentage card game drop box contents keys and release keys.

(4) For situations requiring access to a banking and percentage card game drop box at a time other than the scheduled drop, the date, time, and signature of employee signing out/in the release key must be documented.

(o) *Bill acceptor canister release keys.* (1) The bill acceptor canister release keys shall be maintained by a department independent of the gaming device department.

(2) Only the person(s) authorized to remove bill acceptor canisters from the gaming devices shall be allowed access to the release keys.

(3) Persons authorized to remove the bill acceptor canisters shall be precluded from having simultaneous access to the bill acceptor canister contents keys and release keys.

(4) For situations requiring access to a bill acceptor canister at a time other than the scheduled drop, the date, time, and signature of employee signing out/in the release key must be documented.

(p) *Banking and percentage card game drop box storage rack keys.* (1) A person independent of the pit department shall be required to accompany the banking and percentage card game drop box storage rack keys and observe each time banking and percentage card game drop boxes are removed from or placed in storage racks.

(2) Persons authorized to obtain banking and percentage card game drop box storage rack keys shall be precluded from having simultaneous access to banking and percentage card game drop box contents keys with the exception of the count team.

(q) *Bill acceptor canister storage rack keys.* (1) A person independent of the gaming device department shall be required to accompany the bill acceptor canister storage rack keys and observe each time canisters are removed from or placed in storage racks.

(2) Persons authorized to obtain bill acceptor canister storage rack keys shall be precluded from having simultaneous access to bill acceptor canister contents keys with the exception of the count team.

*(r) Banking and percentage card game drop box contents keys.* (1) The physical custody of the keys needed for accessing stored, full banking and percentage card game drop box contents shall require the involvement of persons from at least two (2) separate departments, with the exception of the count team.

(2) Access to the banking and percentage card game drop box contents key at other than scheduled count times shall require the involvement of at least three (3) persons from separate departments, including management. The reason for access shall be documented with the signatures of all participants and observers.

(3) Only count team members shall be allowed access to banking and percentage card game drop box content keys during the count process.

*(s) Bill acceptor canister contents keys.* (1) The physical custody of the keys needed for accessing stored, full bill acceptor canister contents shall require involvement of persons from two (2) separate departments, with the exception of the count team.

(2) Access to the bill acceptor canister contents key at other than scheduled count times shall require the involvement of at least three (3) persons from separate departments, one (1) of whom must be a supervisor. The reason for access shall be documented with the signatures of all participants and observers.

(3) Only the count team members shall be allowed access to bill acceptor canister contents keys during the count process.

*(t) Gaming device computerized key security systems.* (1) Computerized key security systems which restrict access to the gaming device drop and count keys through the use of passwords, keys or other means, other than a key custodian, must provide the same degree of control as indicated in the aforementioned key control standards; refer to paragraphs (l), (o), (q) and (s) of this section. Note: This standard does not apply to the system administrator. The system administrator is defined in paragraph (t)(2)(i) of this section.

(2) For computerized key security systems, the following additional gaming device key control procedures shall apply:

(i) Management personnel independent of the gaming device department assign and control user access to keys in the computerized key security system (i.e., system administrator) to ensure that gaming device drop and count keys are restricted to authorized employees.

(ii) In the event of an emergency or the key box is inoperable, access to the emergency manual key(s) (a.k.a. override key) used to access the box containing the gaming device drop and count keys, requires the physical involvement of at least three (3) persons from separate departments, including management. The date, time, and reason for access, must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(iii) The custody of the keys issued pursuant to paragraph (t)(2)(ii) of this section requires the presence of two (2) persons from separate departments from the time of their issuance until the time of their return.

(iv) Routine physical maintenance that requires accessing the emergency manual key(s) (a.k.a. override key) and does not involve the accessing of the gaming device drop and count keys, requires the presence of two (2) persons from separate departments. The date, time and reason

for access must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(3) For computerized key security systems controlling access to gaming device drop and count keys, accounting/audit personnel, independent of the system administrator, will perform the following procedures:

(i) Daily, review the report generated by the computerized key security system indicating the transactions performed by the individual(s) that adds, deletes, and changes user's access within the system (i.e., system administrator). Determine whether the transactions completed by the system administrator provide an adequate control over the access to the gaming device drop and count keys. Also, determine whether any gaming device drop and count key(s) removed or returned to the key cabinet by the system administrator was properly authorized.

(ii) For at least one (1) day each month, review the report generated by the computerized key security system indicating all transactions performed to determine whether any unusual gaming device drop and count key removals or key returns occurred.

(iii) At least quarterly, review a sample of users that are assigned access to the gaming device drop and count keys to determine that their access to the assigned keys is adequate relative to their job position.

(iv) All noted improper transactions or unusual occurrences are investigated with the results documented.

(4) Quarterly, an inventory of all count room, drop box release, storage rack and contents keys is performed, and reconciled to records of keys made, issued, and destroyed. Documented investigations shall be performed for all unaccounted keys.

(u) *Banking and percentage card games computerized key security systems.* (1) Computerized key security systems which restrict access to the banking and percentage card game drop and count keys through the use of passwords, keys or other means, other than a key custodian, must provide the same degree of control as indicated in the aforementioned key control standards; refer to paragraphs (m), (n), (p) and (r) of this section. Note: This standard does not apply to the system administrator. The system administrator is defined in paragraph (u)(2)(ii) of this section.

(2) For computerized key security systems, the following additional banking and percentage card game key control procedures apply:

(i) Management personnel independent of the banking and percentage card game department shall assign and control user access to keys in the computerized key security system (i.e., system administrator) to ensure that banking and percentage card game drop and count keys are restricted to authorized employees.

(ii) In the event of an emergency or the key box is inoperable, access to the emergency manual key(s) (a.k.a. override key) used to access the box containing the banking and percentage card game drop and count keys, requires the physical involvement of at least three (3) persons from separate departments, including management. The date, time, and reason for access, must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(iii) The custody of the keys issued pursuant to paragraph (u)(2)(ii) of this section requires the presence of two (2) persons from separate departments from the time of their issuance until the time of their return.

(iv) Routine physical maintenance that requires accessing the emergency manual key(s) (a.k.a. override key) and does not involve the accessing of the banking and percentage card games drop and count keys, requires the presence of two (2) persons from separate departments. The date, time and reason for access must be documented with the signatures of all participating employees signing out/in the emergency manual key(s).

(3) For computerized key security systems controlling access to banking and percentage card games drop and count keys, accounting/audit personnel, independent of the system administrator, will perform the following procedures:

(i) Daily, review the report generated by the computerized key security system indicating the transactions performed by the individual(s) that adds, deletes, and changes user's access within the system (i.e., system administrator). Determine whether the transactions completed by the system administrator provide an adequate control over the access to the banking and percentage card games drop and count keys. Also, determine whether any banking and percentage card games drop and count key(s) removed or returned to the key cabinet by the system administrator was properly authorized.

(ii) For at least one (1) day each month, review the report generated by the computerized key security system indicating all transactions performed to determine whether any unusual banking and percentage card games drop and count key removals or key returns occurred.

(iii) At least quarterly, review a sample of users that are assigned access to the banking and percentage card games drop and count keys to determine that their access to the assigned keys is adequate relative to their job position.

(iv) All noted improper transactions or unusual occurrences are investigated with the results documented.

(4) Quarterly, an inventory of all count room, banking and percentage card game drop box release, storage rack and contents keys is performed and reconciled to records of keys made, issued, and destroyed. Documented investigations shall be performed for all unaccounted keys.

(v) *Emergency drop procedures.* Emergency drop procedures shall be developed by the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency.

(w) *Equipment standards for gaming device count.* (1) A weigh scale calibration module shall be secured so as to prevent unauthorized access (e.g., prenumbered seal, lock and key, etc.).

(2) A person independent of the cage, vault, gaming device, and count team functions shall be required to be present whenever the calibration module is accessed. Such access shall be documented and maintained.

(3) If a weigh scale interface is used, it shall be adequately restricted so as to prevent unauthorized access (passwords, keys, etc.).

(4) If the weigh scale has a zero adjustment mechanism, it shall be physically limited to minor adjustments (e.g., weight of a bucket) or physically situated such that any unnecessary adjustments to it during the weigh process would be observed by other count team members.

(5) The weigh scale and weigh scale interface (if applicable) shall be tested by a person or persons independent of the cage, vault, and gaming device departments and count team at least quarterly. At least annually, this test shall be performed by internal audit in accordance with the internal audit standards. The result of these tests shall be documented and signed by the person or persons performing the test.

(6) Prior to the gaming device count, at least two (2) employees shall verify the accuracy of the weigh scale with varying weights or with varying amounts of previously counted coin for each denomination to ensure the scale is properly calibrated (varying weights/coin from drop to drop is acceptable).

(7) If a mechanical coin counter is used (instead of a weigh scale), the Tribal gaming agency, or the gaming operation as approved by the Tribal gaming agency, shall establish and the gaming operation shall comply with procedures that are equivalent to those described in paragraphs (u)(4), (u)(5), and (u)(6) of this section.

(8) If a coin meter count machine is used, the count team member shall record the machine number denomination and number of coins in ink on a source document, unless the meter machine automatically records such information.

(i) A count team member shall test the coin meter count machine before the actual count to ascertain if the metering device is functioning properly with a predetermined number of coins for each denomination.

**§ 542.42 What are the minimum internal control standards for internal audit for Tier C gaming operations?**

(a) *Internal audit personnel.* (1) For Tier C gaming operations, a separate internal audit department shall be maintained whose primary function is performing internal audit work and that is independent with respect to the departments subject to audit.

(2) The internal audit personnel shall report directly to the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe in accordance with the definition of internal audit in §542.2.

(b) *Audits.* (1) Internal audit personnel shall perform audits of all major gaming areas of the gaming operation. The following shall be reviewed at least annually:

(i) Reserved.

(ii) Reserved.

(iii) Reserved.

(iv) Reserved.

(v) Pari-mutuel wagering, including write and payout procedures, and pari-mutuel auditing procedures;

(vi) Banking and percentage card games, including without limitation, fill and credit procedures, pit credit play procedures, rim credit procedures, soft drop/count procedures and the subsequent transfer of funds, unannounced testing of count room currency counters and/or currency

interface, location and control over sensitive keys, the tracing of source documents to summarized documentation and accounting records, and reconciliation to restricted copies;

(vii) Gaming devices, including without limitation, jackpot payout and gaming device fill procedures, gaming device drop/count and bill acceptor drop/count and subsequent transfer of funds, unannounced testing of weigh scale and weigh scale interface, unannounced testing of count room currency counters and/or currency interface, gaming device drop cabinet access, tracing of source documents to summarized documentation and accounting records, reconciliation to restricted copies, location and control over sensitive keys, compliance with EPROM duplication procedures, and compliance with MICS procedures for gaming devices that accept currency or coin(s) and issue cash-out tickets or gaming devices that do not accept currency or coin(s) and do not return currency or coin(s);

(viii) Cage and credit procedures including all cage, credit, and collection procedures, and the reconciliation of trial balances to physical instruments on a sample basis. Cage accountability shall be reconciled to the general ledger;

(ix) Information technology functions, including review for compliance with information technology standards;

(x) Complimentary service or item, including but not limited to, procedures whereby complimentary service items are issued, authorized, and redeemed; and

(xi) Any other internal audits as required by the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe.

(2) In addition to the observation and examinations performed under paragraph (b)(1) of this section, follow-up observations and examinations shall be performed to verify that corrective action has been taken regarding all instances of noncompliance cited by internal audit, the independent accountant, and/or the Commission or State gaming agency. The verification shall be performed within six (6) months following the date of notification.

(3) Internal audit observations shall be performed on an unannounced basis (i.e., without the employees being forewarned that their activities will be observed). Additionally, if the independent accountant also performs the internal audit function, the accountant shall perform separate observations of the banking and percentage card games/gaming device drops and counts to satisfy the internal audit observation requirements and independent accountant tests of controls as required by the American Institute of Certified Public Accountants guide.

(c) *Documentation.* (1) Documentation (e.g., checklists, programs, reports, etc.) shall be prepared to evidence all internal audit work performed as it relates to the requirements in this section, including all instances of noncompliance.

(2) The internal audit department shall operate with audit programs, which, at a minimum, address the MICS. Additionally, the department shall properly document the work performed, the conclusions reached, and the resolution of all exceptions. Institute of Internal Auditors standards are recommended but not required.

(d) *Reports.* (1) Reports documenting audits performed shall be maintained and made available to the Commission and the State gaming agency upon request.

(2) Such audit reports shall include the following information:

- (i) Audit objectives;
- (ii) Audit procedures and scope;
- (iii) Findings and conclusions;
- (iv) Recommendations, if applicable; and
- (v) Management's response.

(e) *Material exceptions.* All material exceptions resulting from internal audit work shall be investigated and resolved with the results of such being documented and retained for five (5) years.

(f) *Role of management.* (1) Internal audit findings shall be reported to management.

(2) Management shall be required to respond to internal audit findings stating corrective measures to be taken to avoid recurrence of the audit exception.

(3) Such management responses shall be included in the internal audit report that will be delivered to management, the Tribe, Tribal gaming agency, audit committee, or other entity designated by the Tribe.

(g) *Internal Audit Guidelines.* In connection with the internal audit testing pursuant to paragraph (b)(1) of this section, the Commission or State gaming agency shall develop recommended Internal Audit Guidelines, which shall be available upon request.

**§ 542.43 What are the minimum internal control standards for surveillance for a Tier C gaming operation?**

(a) The surveillance system shall be maintained and operated from a staffed surveillance room and shall provide surveillance over gaming areas.

(b) The entrance to the surveillance room shall be located so that it is not readily accessible by either gaming operation employees who work primarily on the casino floor, or the general public.

(c) Access to the surveillance room shall be limited to surveillance personnel, designated employees, and other persons authorized in accordance with the surveillance department policy. Such policy shall be approved by the Tribal gaming agency. The surveillance department shall maintain a sign-in log of other authorized persons entering the surveillance room.

(d) Surveillance room equipment shall have total override capability over all other satellite surveillance equipment located outside the surveillance room.

(e) In the event of power loss to the surveillance system, an auxiliary or backup power source shall be available and capable of providing immediate restoration of power to all elements of the surveillance system that enable surveillance personnel to observe the banking and percentage card games remaining open for play and all areas covered by dedicated cameras. Auxiliary or backup power sources such as a UPS System, backup generator, or an alternate utility supplier, satisfy this requirement.



(f) The surveillance system shall include date and time generators that possess the capability to display the date and time of recorded events on video and/or digital recordings. The displayed date and time shall not significantly obstruct the recorded view.

(g) The surveillance department shall ensure staff is trained in the use of the equipment, knowledge of the games, and house rules.

(h) Each camera required by the standards in this section shall be installed in a manner that will prevent it from being readily obstructed, tampered with, or disabled by customers or employees.

(i) Each camera required by the standards in this section shall possess the capability of having its picture displayed on a monitor and recorded. The surveillance system shall include sufficient numbers of monitors and recorders to simultaneously display and record multiple gaming and count room activities, and record the views of all dedicated cameras and motion activated dedicated cameras.

(j) Reasonable effort shall be made to repair each malfunction of surveillance system equipment required by the standards in this section within seventy-two (72) hours after the malfunction is discovered. The Tribal gaming agency shall be notified of any camera(s) that has malfunctioned for more than twenty-four (24) hours.

(1) In the event of a dedicated camera malfunction, the gaming operation and/or the surveillance department shall immediately provide alternative camera coverage or other security measures, such as additional supervisory or security personnel, to protect the subject activity.

(k) Reserved.

(l) Reserved.

(m) Reserved.

(n) Reserved.

(o) *Pari-mutuel*. The surveillance system shall monitor and record general activities in the pari-mutuel area, to include the ticket writer and cashier areas, with sufficient clarity to identify the employees performing the different functions.

(p) *Banking and percentage card games*—(1) *Operations with four (4) or more banking or percentage card games*. Except as otherwise provided in paragraphs (p)(3), (p)(4), and (p)(5) of this section, the surveillance system of gaming operations operating four (4) or more banking or percentage card games shall provide at a minimum one (1) pan-tilt-zoom camera per two (2) tables and surveillance must be capable of taping:

(i) With sufficient clarity to identify customers and dealers; and

(ii) With sufficient coverage and clarity to simultaneously view the table bank and determine the configuration of wagers, card values, and game outcome.

(iii) One (1) dedicated camera per table and one (1) pan-tilt-zoom camera per four (4) tables may be an acceptable alternative procedure to satisfy the requirements of this paragraph.

(2) *Operations with three (3) or fewer banking or percentage card games.* The surveillance system of gaming operations operating three (3) or fewer banking or percentage card games shall:

(i) Comply with the requirements of paragraph (p)(1) of this section; or

(ii) Have one (1) overhead camera at each table.

(3) *Craps.* All banking card games based upon craps not using dice shall have two (2) dedicated cross view cameras covering both ends of the table.

(4) Reserved.

(5) Reserved.

(q) *Progressive banking and percentage card games.* (1) Progressive banking and percentage card games with a progressive jackpot of \$25,000 or more shall be monitored and recorded by dedicated cameras that provide coverage of:

(i) The table surface, sufficient that the card values and card suits can be clearly identified;

(ii) An overall view of the entire table with sufficient clarity to identify customers and dealer; and

(iii) A view of the progressive meter jackpot amount. If several tables are linked to the same progressive jackpot meter, only one (1) meter need be recorded.

(r) *Gaming devices.* (1) Except as otherwise provided in paragraphs (r)(2) and (r)(3) of this section, gaming devices offering a payout of more than \$250,000 shall be monitored and recorded by a dedicated camera(s) to provide coverage of:

(i) All customers and employees at the gaming device, and

(ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(2) *In-house progressive gaming device.* In-house progressive gaming devices offering a base payout amount (jackpot reset amount) of more than \$100,000 shall be monitored and recorded by a dedicated camera(s) to provide coverage of:

(i) All customers and employees at the gaming device; and

(ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(3) *Wide-area progressive gaming device.* Wide-area progressive gaming devices offering a base payout amount of \$1 million or more and monitored by an independent vendor utilizing an on-line progressive computer system shall be recorded by a dedicated camera(s) to provide coverage of:

(i) All customers and employees at the gaming device; and

(ii) The face of the gaming device, with sufficient clarity to identify the payout line(s) of the gaming device.

(4) Notwithstanding paragraph (r)(1) of this section, if the gaming device is a multi-game gaming device, the Tribal gaming agency, or the gaming operation subject to the approval of the Tribal gaming agency, may develop and implement alternative procedures to verify payouts.

(s) *Cage and vault.* (1) The surveillance system shall monitor and record a general overview of activities occurring in each cage and vault area with sufficient clarity to identify employees within the cage and customers and employees at the counter areas.

(2) Each cashier station shall be equipped with one (1) dedicated overhead camera covering the transaction area.

(3) The surveillance system shall provide an overview of cash transactions. This overview should include the customer, the employee, and the surrounding area.

(t) *Fills and credits.* (1) The cage or vault area in which fills and credits are transacted shall be monitored and recorded by a dedicated camera or motion activated dedicated camera that provides coverage with sufficient clarity to identify the chip values and the amounts on the fill and credit slips.

(2) Controls provided by a computerized fill and credit system maybe deemed an adequate alternative to viewing the fill and credit slips.

(u) *Currency and coin.* (1) The surveillance system shall monitor and record with sufficient clarity all areas where currency or coin may be stored or counted.

(2) Audio capability of the soft count room shall also be maintained.

(3) The surveillance system shall provide for:

(i) Coverage of scales shall be sufficiently clear to view any attempted manipulation of the recorded data.

(ii) Monitoring and recording of the banking and percentage card game drop box storage rack or area by either a dedicated camera or a motion-detector activated camera.

(iii) Monitoring and recording of all areas where coin may be stored or counted, including the hard count room, all doors to the hard count room, all scales and wrapping machines, and all areas where uncounted coin may be stored during the drop and count process.

(iv) Monitoring and recording of soft count room, including all doors to the room, all banking and percentage card game drop boxes, safes, and counting surfaces, and all count team personnel. The counting surface area must be continuously monitored and recorded by a dedicated camera during the soft count.

(v) Monitoring and recording of all areas where currency is sorted, stacked, counted, verified, or stored during the soft count process.

(v) *Change booths.* The surveillance system shall monitor and record a general overview of the activities occurring in each gaming device change booth.

(w) *Video recording and/or digital record retention.* (1) All video recordings and/or digital records of coverage provided by the dedicated cameras or motion-activated dedicated cameras required by the standards in this section shall be retained for a minimum of seven (7) days.

(2) Recordings involving suspected or confirmed gaming crimes, unlawful activity, or detentions by security personnel, must be retained for a minimum of thirty (30) days.

(3) Duly authenticated copies of video recordings and/or digital records shall be provided to the Commission and State gaming agency upon request.

(x) *Video library log.* A video library log, or comparable alternative procedure approved by the Tribal gaming agency, shall be maintained to demonstrate compliance with the storage, identification, and retention standards required in this section.

(y) *Malfunction and repair log.* (1) Surveillance personnel shall maintain a log or alternative procedure approved by the Tribal gaming agency that documents each malfunction and repair of the surveillance system as defined in this section.

(2) The log shall state the time, date, and nature of each malfunction, the efforts expended to repair the malfunction, and the date of each effort, the reasons for any delays in repairing the malfunction, the date the malfunction is repaired, and where applicable, any alternative security measures that were taken.

(z) *Surveillance log.* (1) Surveillance personnel shall maintain a log of all surveillance activities.

(2) Such log shall be maintained by surveillance room personnel and shall be stored securely within the surveillance department.

(3) At a minimum, the following information shall be recorded in a surveillance log:

(i) Date;

(ii) Time commenced and terminated;

(iii) Activity observed or performed; and

(iv) The name or license credential number of each person who initiates, performs, or supervises the surveillance.

(4) Surveillance personnel shall also record a summary of the results of the surveillance of any suspicious activity. This summary may be maintained in a separate log.

**Tribal-State Compact Between the State of California and the  
Wiyot Tribe**

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**TRIBAL-STATE COMPACT**

**BETWEEN**

**THE STATE OF CALIFORNIA**

**AND**

**THE WIYOT TRIBE**

**TRIBAL-STATE COMPACT**  
**Between the**  
**THE STATE OF CALIFORNIA**  
**and**  
**THE WIYOT TRIBE**

The Wiyot Tribe ("The Wiyot Tribe" or "the Tribe"), formerly known as the Table Bluff Reservation – Wiyot Tribe, California, a federally recognized Indian tribe, and the State of California (hereinafter "the State") enter into this tribal-state compact.

**PREAMBLE**

WHEREAS, The Wiyot Tribe and the State have conducted extensive negotiations concerning the Tribe's desire to conduct a Class III Gaming operation on its existing lands in Humboldt County; and

WHEREAS, the State has concerns related to the potential environmental implications of a tribal gaming facility on the Tribe's lands, including concerns related to water quality, the prospect of a casino adjacent to the Humboldt Bay National Wildlife Refuge, the potentially negative aesthetic impact of a casino on Humboldt Bay, and potential depletion of the aquifer supplying the Humboldt County area; and

WHEREAS, the Tribe has historically been a strong and active steward of its lands, wishes to continue to protect those lands, and is willing to agree not to game on said lands if it can promote tribal economic development and self-sufficiency in another way; and

WHEREAS, to promote good relations between tribal, state, and local governments, enhance tribal economic development and self-sufficiency, protect the environment and the interests of the Tribe and the California public, and promote the purposes of the Indian Gaming Regulatory Act of 1988 (hereinafter "IGRA"), the State and the Tribe have concluded this Compact, which provides for a fair payment to the Tribe in exchange for the Tribe's agreement to forgo Gaming Activities on its lands for the duration of this Compact; and

WHEREAS, the State and the Tribe recognize that this Compact is negotiated in the exercise of the Tribe's sovereignty; and

WHEREAS, the State and the Tribe agree that all terms of this Compact are binding and enforceable.

NOW, THEREFORE, The Wiyot Tribe and the State agree as set forth herein.

## **SECTION 1.0. PURPOSES AND OBJECTIVES**

The terms of this Compact are designed to:

- (a) Evidence the goodwill and cooperation of the Tribe and the State in fostering a mutually respectful government-to-government relationship that will serve their mutual interests;
- (b) Provide the Tribe with a right to certain payments in exchange for its agreement, in the exercise of its sovereignty, to forgo the operation of Gaming Activities on its lands during the term of this Compact in such a fashion that protects the interests of the Tribe, its members, the State, its citizens, the environment, and local communities;
- (c) Enable the Tribe to promote tribal economic development and support its government and its governmental services and programs with the aforesaid payments.

## **SECTION 2.0. DEFINITIONS**

**Sec. 2.1.** "Class III Gaming" means the forms of class III gaming defined in 25 U.S.C. § 2703(8) and by the regulations of the National Indian Gaming Commission.

**Sec. 2.2.** "Gaming Activity" or "Gaming Activities" means Class III Gaming activities.

**Sec. 2.3.** "Gaming Compact" means a compact authorizing a tribe to engage in Class III Gaming Activities.

**Sec. 2.4.** "Gaming Device" means any slot machine within the meaning of article IV, section 19, subdivision (f) of the California Constitution. Each player station of a multi-player slot machine constitutes a separate Gaming Device. "Gaming Device" includes, but is not limited to, instant lottery game devices and



video poker, but does not cover electronic, computer or other technological aids that qualify as class II gaming (as defined under IGRA).

**Sec. 2.5.** "IGRA" means the Indian Gaming Regulatory Act of 1988 (P.L. 100-497, 18 U.S.C. § 1166 et seq. and 25 U.S.C. § 2701 et seq.), and any amendments thereto, as interpreted by all regulations promulgated thereunder.

**Sec. 2.6.** "Net Win" means the total amount wagered on Gaming Devices, less all prizes and payments that are directly related to the amount wagered (as determined by GAAP) and any participation fees. Participation fees are payments made to Gaming Resource Suppliers on a periodic basis for the right to lease or otherwise license for play Gaming Devices that the gaming operator does not own and that are not generally available for outright purchase by gaming operators.

**Sec. 2.7.** "NIGC" means the National Indian Gaming Commission.

**Sec. 2.8.** "North Fork Compact" means the Gaming Compact between the State of California and the North Fork Rancheria of Mono Indians of California.

**Sec. 2.9.** "North Fork Tribe" or "North Fork" means the North Fork Rancheria of Mono Indians of California, a federally recognized Indian tribe listed in the Federal Register as the Northfork Rancheria of Mono Indians of California.

**Sec. 2.10.** "Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe" or "The Wiyot Tribe Fund" means the fund created by the California Legislature pursuant to the North Fork Compact and administered by the California Gambling Control Commission, as trustee, for the receipt, deposit, and distribution of monies paid to The Wiyot Tribe.

**Sec. 2.11.** "State" means the State of California or an authorized official or agency thereof designated by this Compact or by the Governor.

**Sec. 2.12.** "State Designated Agency" means the entity or entities designated or to be designated by the Governor to exercise rights and fulfill responsibilities established by this Compact.

**Sec. 2.13.** "State Gaming Agency" means the entities authorized to investigate, approve, regulate and license gaming pursuant to the Gambling Control Act (Chapter 5 (commencing with section 19800) of Division 8 of the

Business and Professions Code), or any successor statutory scheme, and any entity or entities in which that authority may hereafter be vested.

**Sec. 2.14.** "The Wiyot Tribe" or "the Tribe" means The Wiyot Tribe (formerly known until October 2, 2004, as the Table Bluff Reservation - Wiyot Tribe), a federally recognized Indian tribe, or an authorized official or agency thereof.

**Sec. 2.15.** "The Wiyot Tribe Compact" or "this Compact" means the tribal-state compact between The Wiyot Tribe and the State of California.

**Sec. 2.16.** "Tribal Chairperson" means the person duly elected under The Wiyot Tribe's Constitution to serve as the primary spokesperson for The Wiyot Tribe.

### **SECTION 3.0. RELINQUISHMENT OF RIGHT TO GAME**

#### **Sec. 3.1. Tribe's Agreement to Forgo Gaming Activities.**

The Wiyot Tribe hereby agrees not to engage in, authorize, or permit Gaming Activities on its Indian lands in California during the term of this Compact in exchange for the payments provided to the Tribe pursuant to Section 4.0 of this Compact. In order to achieve the objectives set forth in the preamble, the Tribe also represents that, in the exercise of its sovereignty, it will not engage in class II gaming activities during the term of this Compact unless it terminates this Compact.

#### **Sec. 3.2. Conditions on Agreement to Forgo Gaming Activities.**

- (a) In the event that North Fork submits written notice to the State that it is abandoning its application to have the land specified in the North Fork Compact taken into trust for Class III Gaming purposes, the Tribe may, at its sole option, terminate this Compact by written notice to the Governor of the State.
- (b) In the event that North Fork fails to have the land specified in the North Fork Compact taken into trust by December 31, 2010, or does not receive final federal and State approval necessary to make such land eligible for Class III Gaming by December 31, 2010, the Tribe

may, at its sole option, request the State to negotiate a Gaming Compact; provided that nothing in this Compact shall compel the State to agree to such request or shall be deemed to waive or in any way affect any right of the State to challenge The Wiyot Tribe's assertion that it possesses lands eligible for Class III Gaming or that it is otherwise entitled to game on its lands; but provided further that if the Tribe does not request to negotiate with the State before (i) North Fork receives approval of the right to conduct Class III Gaming on the land specified in the North Fork Compact pursuant to 25 U.S.C. § 2719(b)(1)(A), or (ii) the specified land in the North Fork Compact is taken into trust as part of the restoration of lands pursuant to 25 U.S.C. § 2719(b)(1)(B)(iii), The Wiyot Tribe waives its right under this subdivision to request negotiations over a Gaming Compact. If a Gaming Compact is concluded between The Wiyot Tribe and the State following a request to negotiate under this subdivision, this Compact will be deemed terminated upon notice of federal approval of such a Gaming Compact.

- (c) If, pursuant to the dispute resolution process set forth in Section 5.0, an arbitrator or judge determines that the State has failed to make good faith efforts to enforce the payment obligations of North Fork for the benefit of The Wiyot Tribe, as defined herein, The Wiyot Tribe has the right, at its sole option, to terminate this Compact by written notice to the Governor of the State; provided that the State will only be found to have failed to make good faith efforts for purposes of this subdivision if it secures neither payment nor a judgment in favor of payment of the outstanding amounts within two (2) years of a default of said amounts by North Fork. For purposes of this subdivision, such default occurs if North Fork fails to both make any payment due to the State for the benefit of The Wiyot Tribe within the time specified in the North Fork Compact *and* make said payment within thirty (30) days following the State's notice of such failure to North Fork (which notice the State may not unreasonably refuse to issue); provided that a default will not be deemed to occur on the basis of a dispute over the calculation of the Net Win upon which the payments for the benefit of The Wiyot Tribe are based pursuant to Section 4.1.

- (d) The Wiyot Tribe also has the right, at its sole option, to terminate this Compact by written notice to the Governor of the State if the State fails to remit to The Wiyot Tribe all monies received by the State for the benefit of The Wiyot Tribe pursuant to this Compact more than sixty (60) days following receipt (unless the payment is made conditional upon a further dispute resolution process) *and* The Wiyot Tribe has given, after said failure to remit, thirty (30) days' prior written notice of the intention to terminate if payment is not made *and* payment is not made within those thirty (30) days.
- (e) In the event that The Wiyot Tribe terminates this Compact by written notice pursuant to subdivision (a), (b), (c) or (d), it may request that the State negotiate a Gaming Compact; provided that nothing herein compels the State to agree to such request or shall be deemed to waive or in any way affect the State's right to challenge The Wiyot Tribe's assertion that it possesses lands eligible for gaming or that it is otherwise entitled to game on its lands.
- (f) The Wiyot Tribe also has the right to terminate this Compact pursuant to the provisions of Sections 7.3 or 7.4 of this Compact.

## **SECTION 4.0. PAYMENTS TO THE TRIBE**

### **Sec. 4.1. Payment Schedule.**

In consideration of The Wiyot Tribe's agreement to forgo Gaming Activities on its Indian lands for the duration of this Compact pursuant to Section 3.0 of this Compact, the State has negotiated the following payments from North Fork for the benefit of the The Wiyot Tribe in connection with the North Fork Compact, which payments are based on the following percentages of Net Win of the Gaming Devices operated pursuant to the North Fork Compact.

<u>Annual Net Win of North Fork's Gaming Devices Pursuant to North Fork Compact</u>	<u>Percentage of Annual Net Win of Gaming Devices To Be Paid to The Wiyot Tribe</u>
\$0-\$100 million	2.5%
Over \$100 to \$200 million	3%
Over \$200 million	3.5%

These payments shall be calculated as specified in the North Fork Compact, which provides that the payments for the benefit of The Wiyot Tribe shall be made quarterly to the State, and that the specific percentage applied to the quarterly Net Win shall be determined by the cumulative total of the Net Win earned since the beginning of the calendar year. Thus, for instance, if the cumulative Net Win exceeds \$100 million by the fourth quarter (but is less than \$200 million), the percentage applied to the Net Win earned during that quarter would be 2.5% for the amounts earned in that quarter up to the cumulative \$100 million total and 3% for the amounts in excess of \$100 million.

**Sec. 4.2. Payments to the Tribe from the State.**

- (a) The California Gambling Control Commission shall serve as trustee of the Revenue Sharing Trust Fund for the Benefit of The Wiyot Tribe ("The Wiyot Tribe Fund") but shall have no duties or obligations except as set forth in this Compact. It shall receive, deposit, and distribute monies received from North Fork for the sole benefit of The Wiyot Tribe pursuant to the schedule specified in Section 4.1 of this Compact. The State shall remit to the Tribe the payments referenced in Section 4.1 of this Compact following their receipt from North Fork, in quarterly payments due sixty (60) days following the end of each calendar quarter (i.e., by May 30 for the first quarter, August 29 for the second quarter, November 29 for the third quarter, and March 1 for the fourth quarter). If the Gaming Activities authorized by the North Fork Compact commence during a calendar quarter, the first payment shall not be due until the sixtieth day following the end of the first full quarter of the Class III Gaming operation authorized in the North Fork Compact and shall cover the period from the commencement of such Gaming Activities to the end of the first full calendar quarter. Said quarterly payments shall be accompanied by a copy of the certification specified in subdivision (b), if any, submitted by North Fork to the State in connection with the payments made to The Wiyot Tribe.
- (b) The quarterly payments specified under subdivision (a) shall be accompanied by a copy of any certification received by the State from North Fork that reflects the quarterly Net Win from the operation of Gaming Devices under the North Fork Compact in connection with the payments received by the State from North Fork for the benefit of

the Wiyot Tribe. Such certification will be prepared by an authorized representative of North Fork and shall reflect the quarterly Net Win from Gaming Devices, the percentage(s) applied to this Net Win as specified in the North Fork Compact (which are the same as those specified herein), and the total amount of the quarterly payment to be paid to the benefit of The Wiyot Tribe; provided that the State may decline to provide or may redact any or all information on the certification that does not relate to North Fork's Net Win on Gaming Devices or The Wiyot Tribe's payment.

- (c) The California Gambling Control Commission shall submit to The Wiyot Tribe, no later than thirty (30) days following its receipt, a copy of any audited annual certification of North Fork's Net Win calculation from the operation of Gaming Devices; provided that the State may decline to provide or may redact any or all information which does not relate to North Fork's Net Win on Gaming Devices. If the audited financial statement shows that North Fork made an overpayment to the State for the benefit of The Wiyot Tribe during the year covered by the statement, the State will reduce the next payment made to The Wiyot Tribe by the amount of the overage. Conversely, if the audited financial statement shows that North Fork made an underpayment to the State for the benefit of The Wiyot Tribe during the year covered by said statement, the State will seek to recover the balance owing, and if the State succeeds in recovering such balance for the benefit of The Wiyot Tribe, The Wiyot Tribe's next payment shall be increased by the amount owing pursuant to the North Fork Compact and Section 4.1 of this Compact.
- (d) Notwithstanding anything herein to the contrary, in the event of any dispute resolution process over the amounts owing under the North Fork Compact, The Wiyot Tribe will not be entitled to receive any amounts in dispute until the issuance of a final decision upon which no further review is allowed, and the State shall have no obligation to pay any interest on any amounts not yet received by the State from North Fork.
- (e) The State agrees that it will specify in the North Fork Compact that the State has the right to audit the Net Win of North Fork's Gaming Devices.

- (f) Any dispute over the amount of the quarterly payment owed to The Wiyot Tribe pursuant to this Section shall be resolved by the dispute resolution process defined in Section 5.0 of this Compact; provided that the State is under no obligation to remit any payments to The Wiyot Tribe under this Compact other than those monies received from North Fork for the benefit of The Wiyot Tribe.

#### **Sec. 4.3. Confidentiality of Documents.**

The Tribe will exercise the utmost care in the preservation of the confidentiality of any and all information and documents received from the State relating to the North Fork Compact, and will apply the highest standards of confidentiality provided under California law to preserve such information and documents from disclosure. In recognition of the sensitive nature of the financial statements and other audit documents the Tribe shall receive pursuant to this Compact, the Tribe agrees to hold the State harmless and indemnify the State in connection with any failure by The Wiyot Tribe to maintain the confidentiality of the documents relating to the North Fork Compact. In order to effectuate this provision, The Wiyot Tribe agrees to a limited waiver of its right to assert sovereign immunity, as set forth in Section 5.4 of this Compact, in connection with any action or proceeding arising out of or related to a failure to preserve the confidentiality of any and all information and documents received from the State relating to the North Fork Tribe. To the extent reasonably feasible, the Tribe will consult with representatives of the California Gambling Control Commission prior to any disclosure of any documents received from the State pursuant to this Compact, or of any documents compiled from such documents or from information received from the State, including any disclosure compelled by judicial process, and in the case of any disclosure compelled by judicial process, will provide the State and North Fork with immediate notice of any motion or application seeking disclosure, or order compelling disclosure, and a reasonable opportunity to interpose an objection thereto with the court. Notwithstanding any other provision of California law, all information and records that the Tribe obtains pursuant to this Compact shall be, and remain, the property solely of North Fork or the State, as the case may be.

#### **Sec. 4.4. Revenue Sharing Trust Fund Payments.**

Neither the existence of this Compact nor any of its provisions shall affect the Tribe's eligibility to receive distributions from the revenue sharing trust fund created by the Legislature and administered by the California Gambling Control Commission.

#### **Sec. 4.5. Use of Disbursements.**

The parties to this Compact make no representations as to the applicability of 25 U.S.C. § 2710(b)(2)(B) to the revenues to be received by the Tribe as a result of this Compact. Nonetheless, in order to achieve the goals of the IGRA, The Wiyot Tribe agrees that it shall distribute no more than 50% of net revenues produced from this Compact in any year to its tribal members, and shall reserve at least 50% of the net revenues in order to fund tribal governmental operations or programs, to provide for the general welfare of the Tribe and its members, to promote tribal economic development, or to donate to charitable organizations.

### **SECTION 5.0 DISPUTE RESOLUTION PROVISIONS**

#### **Sec. 5.1. Voluntary Resolution.**

In recognition of the government-to-government relationship of the Tribe and the State, the parties shall make their best efforts to resolve disputes that arise under this Compact by good faith negotiations whenever possible. Therefore, except for the right of either party to seek injunctive relief against the other when circumstances are deemed to require immediate relief, the Tribe and the State shall seek to resolve disputes by first meeting and conferring in good faith in order to foster a spirit of cooperation and efficiency in the administration and monitoring of the performance and compliance of the terms, provisions, and conditions of this Compact as follows:

- (a) Either party shall give the other, as soon as possible after the event giving rise to the concern, a written notice by certified mail setting forth the facts giving rise to the dispute and with specificity, the issues to be resolved.
- (b) The other party shall respond in writing to the facts and issue(s) set forth in the notice within fifteen (15) days of receipt of the notice, unless both parties agree in writing to an extension of time.



- (c) The parties shall meet and confer in good faith by telephone or in person in an attempt to resolve the dispute through negotiation within thirty (30) days after receipt of the notice set forth in subdivision (a), unless both parties agree in writing to an extension of time.
- (d) If the dispute is not resolved to the satisfaction of the parties after the first meeting, either party may seek to have the dispute resolved by an arbitrator in accordance with this Section, but neither party shall be required to agree to submit to arbitration.
- (e) Disagreements that are not otherwise resolved by arbitration or other mutually agreed means may be resolved in the United States District Court in the judicial district where the Tribe's lands are located, or any state court of competent jurisdiction in Humboldt County. The disputes to be submitted to court action are only those that arise under this Compact or the termination thereof and may include, but are not limited to, claims for breach of this Compact. The parties are entitled to all rights of appeal permitted by law in the court system in which the action is brought.
- (f) In no event may the Tribe be precluded from pursuing any arbitration or judicial remedy against the State on the ground that the Tribe has failed to exhaust its state administrative remedies, and in no event may the State be precluded from pursuing any arbitration or judicial remedy against the Tribe on the ground that the State has failed to exhaust any tribal administrative remedies.

## **Sec. 5.2. Arbitration Rules.**

Unless otherwise specified in this Compact, arbitration shall be conducted before a single arbitrator in accordance with the Commercial Arbitration Rules of the American Arbitration Association, and shall be held in the federal judicial district in which the Tribe's lands are located at a location selected by the arbitrator. Each side shall initially bear one-half the costs and expenses of the American Arbitration Association and the arbitrator, but the arbitrator shall award the prevailing party its costs, including the costs of the American Arbitration Association and the arbitrator; however, the parties shall bear their own attorney fees. The provisions of section 1283.05 of the California Code of Civil Procedure shall apply, provided that no discovery authorized by that section may be

conducted without leave of the arbitrator. The decision of the arbitrator shall be in writing, shall give reasons for the decision, and shall be binding. Judgment on the award may be entered in any federal or state court having jurisdiction thereof.

**Sec. 5.3. No Waiver or Preclusion of Other Means of Dispute Resolution.**

This Section 5.0 shall not be construed to waive, limit, or restrict any remedy that is otherwise available to either party, nor shall this section be construed to preclude, limit, or restrict the ability of the parties to pursue, by mutual agreement, any other method of dispute resolution.

**Sec. 5.4. Limited Waiver of Sovereign Immunity.**

- (a) For the purpose of actions or arbitrations brought pursuant to this Section 5.0 and the enforcement of any judgment or award resulting therefrom, the State and the Tribe expressly waive their right to assert their sovereign immunity from suit and from enforcement of any ensuing judgment or arbitral award and to the arbitrator's jurisdiction and further consent to be sued in federal or state court, as the case may be, provided that (i) the dispute is limited solely to issues arising under this Compact, or the termination thereof; (ii) neither side makes any claim for monetary damages (except for payment of any money specifically required by the terms of this Compact); provided, however, injunctive relief, specific performance, including enforcement of a provision of this Compact, and declaratory relief may be sought; and (iii) nothing herein shall be construed to constitute a waiver of the sovereign immunity of either the Tribe or the State with respect to any third party that is made a party or intervenes as a party to the action.
- (b) In the event that intervention, joinder, or other participation by any additional party in any such action would result in the waiver of the Tribe's or the State's sovereign immunity as to that additional party, the waivers of either the Tribe or the State provided herein may be revoked, except that where joinder is required to preserve the court's jurisdiction or where North Fork is the additional party, the State and The Wiyot Tribe may not revoke their waivers of sovereign immunity as to each other.

- (c) The waivers and consents provided for under this Section 5.0 shall extend to all arbitrations and civil actions authorized by this Compact, including, but not limited to, proceedings to enforce any judgment, actions to compel arbitration, any arbitration proceeding, any action to confirm, modify, or vacate any arbitral award or to enforce any judgment therein, and any appellate proceedings emanating from any matter in which a waiver of sovereign immunity has been granted. Except as stated herein or elsewhere in this Compact, no other waivers or consents to be sued, either express or implied, are granted by either party.

## **SECTION 6.0. EFFECTIVE DATE AND TERM OF COMPACT**

### **Sec. 6.1. Effective Date.**

This Compact shall not be effective unless and until all of the following have occurred:

- (a) This Compact is ratified in accordance with state law; and
- (b) Notice of approval or constructive approval is published in the Federal Register as provided in 25 U.S.C. § 2710(d)(3)(B), unless either the United States Department of Interior does not require such approval or such approval for this Compact is not required as a matter of law.

In the event that this Compact does not become effective due to the failure of any of the events described in this section, the Tribe retains any rights which it may currently possess with regard to requesting good faith negotiations with the State for a Gaming Compact pursuant to existing law.

### **Sec. 6.2. Term of Compact.**

- (a) Once effective, this Compact shall be in full force and effect for state law purposes until December 31, 2028. No sooner than eighteen (18) months prior to the aforementioned termination date, either party may request the other party to enter into negotiations to extend this Compact or to enter into a new and different compact.

- (b) Upon a request to enter into negotiations pursuant to subdivision (a) or following an authorized termination of this Compact, The Wiyot Tribe may request negotiations for a Gaming Compact and shall be deemed not to have waived any rights by entering into this Compact; provided that nothing in this Compact shall be deemed to affect in any way the State's right to challenge The Wiyot Tribe's assertion that it possesses lands eligible for gaming or that it is otherwise entitled to game on its lands.

### **Sec. 6.3 Termination By the Tribe.**

Where this Compact authorizes The Wiyot Tribe to terminate this Compact, said termination can only be effectuated by means of written notice served on the Governor of the State pursuant to Section 8.

### **Sec. 6.4 Termination By the State.**

In the event of any material change in the State's ability to comply with the terms of this Compact, the State may terminate this Compact upon ninety (90) days' written notice. State budget constraints, in and of themselves, shall not be deemed a material change in the State's ability to comply with the terms of this Compact.

## **SECTION 7.0 AMENDMENTS; RENEGOTIATIONS**

### **Sec. 7.1. Requests to Amend.**

All requests to amend this Compact shall be in writing, addressed to the Tribal Chairperson or the Governor, as the case may be, and shall include the activities or circumstances to be amended, together with a statement of the basis supporting the request. If the request meets the requirements of this section and the parties agree to negotiate to amend this Compact, the parties shall confer promptly and determine within forty-five (45) days of the request a schedule for commencing negotiations. The Chairperson of the Tribe and the Governor of the State are hereby authorized to designate the person or agency responsible for conducting the negotiations, and shall execute any documents necessary to do so.

### **Sec. 7.2. Requests to Negotiate a Gaming Compact.**

Except as specified in Sections 3.2 and 6.2, if the Tribe requests and the State agrees to commence negotiations over a Gaming Compact in good faith, the State's written agreement to such negotiations will act to immediately terminate this Compact, cease the remittance of all payments under Section 4.0 of this Compact, and terminate any trust responsibilities of the State to The Wiyot Tribe under this Compact or the ratifying legislation; provided that nothing in this Compact shall be deemed to waive or in any way affect the State's right to challenge The Wiyot Tribe's assertion that it possesses lands eligible for gaming or that it is otherwise entitled to game on its lands. Any request by the Tribe to the State to negotiate a Gaming Compact shall be subject to the requirements of IGRA and any other applicable law, and the Tribe shall be deemed not to have waived any of its rights pursuant to existing law by virtue of having executed this Compact, except as specifically described in this Compact.

### **Sec. 7.3. Changes to State or Federal Law Affecting the Payments Received by the Tribe.**

In the event the exclusive right of Indian tribes to operate Gaming Devices in California pursuant to article IV, section 19, subdivision (f) of the California Constitution is abrogated by amendment to the Constitution or by a final and dispositive California federal or state appellate judicial decision from which no further review can be granted, and another person, organization or entity (other than a federally recognized Indian tribe) thereafter operates Gaming Devices in the geographic market of North Fork as specified in the North Fork Compact, The Wiyot Tribe shall have the right to terminate this Compact by written notice, in which case the Tribe will immediately lose the right to receive the payments specified in Section 4.0 of this Compact and any trust responsibilities of the State under this Compact or the ratifying legislation shall be terminated.

### **Sec. 7.4. Amendment of North Fork Compact.**

In the event North Fork amends its Gaming Compact with the State to change the formula for making payments for the benefit of The Wiyot Tribe, including the percentages thereof, or otherwise abrogates or terminates said formula for payments, such that the payments to The Wiyot Tribe Fund are reduced or eliminated, the Tribe shall have the right to terminate this Compact by written notice as long as it acts within sixty (60) days of the date of written notice by the State of the reduction or elimination of payments or within 180 days of the

effective date of any such amendment, whichever comes first. In the case of termination, the Tribe will lose the right to receive the payments specified in Section 4.0 of this Compact and any trust responsibilities of the State under this Compact or the ratifying legislation shall be terminated.

## **SECTION 8.0. NOTICES**

Unless otherwise indicated by this Compact, all notices required or authorized to be served shall be served by first-class mail at the following addresses, or to such other address as either party may designate by written notice to the other:

Governor	Tribal Chairperson
Attention: Legal Affairs Secretary	The Wiyot Tribe
Governor's Office	1000 Wiyot Drive
State Capitol	Loleta, California 95551
Sacramento, California 95814	

## **SECTION 9.0. MISCELLANEOUS**

### **Sec. 9.1. Third Party Beneficiaries.**

This Compact is not intended to, and shall not be construed to, create any right on the part of a third party to bring an action to enforce any of its terms.

### **Sec. 9.2. Complete Agreement.**

This Compact sets forth the final, complete, and exclusive agreement of the parties and supersedes any prior agreements or understandings with respect to the subject matter hereof.

### **Sec. 9.3. Construction.**

Neither the presence in another tribal-state compact of language that is not included in this Compact, nor the absence in another tribal-state compact of language that is present in this Compact shall be a factor in construing the terms of this Compact.

#### **Sec. 9.4. Successor Provisions.**

Whenever this Compact makes reference to a specific statutory provision or set of rules, it also applies to said provision or rules as they may be amended from time to time, and any successor provision or set of rules.

#### **Sec. 9.5. Representations.**

- (a) The Tribe expressly represents that as of the date of the undersigned's execution of this Compact, the undersigned has the authority to execute this Compact on behalf of The Wiyot Tribe, including any waiver of the right to sovereign immunity therein, and will provide written proof of such authority and of the ratification of this Compact by the tribal governing body to the Governor no later than thirty (30) days after the execution of this Compact by the undersigned.
- (b) The Tribe further represents that it is (i) recognized as eligible by the Secretary of the Interior for special programs and services provided by the United States to Indians because of their status as Indians, and (ii) recognized by the Secretary of the Interior as possessing powers of self-government.
- (c) In entering into this Compact, the State expressly relies upon the foregoing representations by the Tribe, and the State's entry into this Compact is expressly made contingent upon the truth of those representations as of the date of the Tribe's execution of this Compact through the undersigned. If the Tribe fails to timely provide written proof of the undersigned's authority to execute this Compact or written proof of ratification by the Tribe's governing body within thirty (30) days of its execution, the Governor shall have the right to declare this Compact null and void.

IN WITNESS WHEREOF, the undersigned sign this Compact on behalf of the State of California and The Wiyot Tribe.

STATE OF CALIFORNIA

THE WIYOT TRIBE

\_\_\_\_\_  
By Arnold Schwarzenegger  
Governor of the State of California

\_\_\_\_\_  
By Cheryl A. Seidner  
Chairwoman of The Wiyot Tribe

Executed this \_\_\_\_ day of \_\_\_\_\_, 2008  
at Sacramento, California

Executed this \_\_\_\_ day of \_\_\_\_\_, 2008  
at Sacramento, California

**ATTEST:**

\_\_\_\_\_  
Debra Bowen  
Secretary of State, State of California