




THE TRAILS OF MANTECA PROJECT

DRAFT
ENVIRONMENTAL IMPACT REPORT

SCH No.: 2010072042



APPENDICES

October 14, 2010

CITY OF MANTECA, CALIFORNIA
Manteca
the family city
INCORPORATED MAY 29, 1918






DRAFT
Environmental Impact Report
The Trails of Manteca Project
City of Manteca, San Joaquin County, California

State Clearinghouse No. 2010072042

APPENDICES

Prepared for:

City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
209.456.8522

Contact: Erika Durrer, Senior Planner

Prepared by:

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
925.830.2733

Contact: Jason Brandman, Project Director
Grant Gruber, Project Manager

Michael Brandman Associates

October 14, 2010

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Notice of Preparation and Responses

A.1 - Notice of Preparation

City of Manteca

Notice of Preparation

The Trails of Manteca Project

Date: Thursday, July 15, 2010

To: Public Agencies and Interested Parties

From: Erika Durrer, Senior Planner

Subject: Notice of Preparation of a Draft Environmental Impact Report for The Trails of Manteca Project

The City of Manteca will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project identified below.

The project description, location, and probable environmental effects of The Trails of Manteca Project are described in the attached materials. The City of Manteca is soliciting comments regarding the scope and content of the environmental information, which are germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering permitting or other approvals. Because of time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please provide your written response to the address shown below by **5:00 p.m., Friday, August 13, 2010**. We will need the name of a contact person in your agency.

Erika Durrer, Senior Planner
Community Development Department
1001 W. Center Street
Manteca, CA 95337
Phone: (209) 456-8522
Fax: (209) 923-8949
Email: edurrer@ci.manteca.ca.us

THE TRAILS OF MANTECA PROJECT

1.1 - Project Location

The project site is located in the City of Manteca, San Joaquin County, California; refer to Exhibit 1. The project site consists of five parcels totaling 477 acres, bounded by E. Woodward Road (north), S. Woodward Avenue (west), vacant land to the east and the south; refer to Exhibit 2. The project site is located on the Lathrop, California, United States Geologic Survey 7.5-minute quadrangle, Township 2 South, Range 7 East, Unsectioned (Latitude: 37°46'05" North; 121°16'40" West).

1.2 - Existing Conditions

1.2.1 - Land Use

The 477-acre project site contains agricultural land used for row crops and almond orchards. The site contains several structures, including an old barn, a mobile home and related buildings, which are located approximately 300 feet west of the eastern project boundary. A dry levee bisects the property. Approximately 300 acres lie north of the levee and the remaining 177 acres lie south of the levee. A mobile home park is located west of the project site.

The project site is designated as containing "Important Farmland" by the Farmland Mapping and Monitoring Program. The site is encumbered by an active Williamson Act contract. The property owner has filed a Notice of Non-Renewal to begin the process of canceling the contract.

1.2.2 - Land Use Designations

The City of Manteca General Plan designates the project site as "Urban Reserve-Low density Residential" and "Urban Reserve- Very Low density Residential." The Manteca Zoning Ordinance designates the project site "Planned Employment Center (PEC)."

1.3 - Project Description

The proposed The Trails of Manteca project will include a residential development with various densities in order to facilitate a variety of housing products including 1,178 single-family residences, 192 townhomes/garden apartments, and 280 apartments. The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the trail system proposed by the City. The proposed project also includes over 75 acres of linear parks and a clubhouse to be utilized by the residents. Table 1 summarizes the project characteristics. The project site plan is shown in Exhibit 3.

Table 1: Development Summary

Land Use	Number of Units	Acreage	Dwelling Units / Acre
Single-Family Residential	1,178	181	8.1-15
Townhomes / Garden Apartments	192	8	15.1-25
Apartments	280	14.3	15.1-25
Parks	—	75	—
Total	**1,651**	**278**	—

A General Plan Amendment is proposed to change the land use designation from Very Low Density Residential, Low Density Residential, Urban Reserve, and Open Space to Low Density Residential, High Density Residential, and Open Space. To establish consistency with the General Plan rezoning of parcels from the Planned Employment Center (PEC) to Planned Development (PD) is also proposed.

1.4 - Required Approvals and Intended Uses

The proposed projects would require the following discretionary approvals and actions:

- General Plan Amendment
- Zone Change
- Planned Development Adoption
- Tentative Subdivision Map
- Development Agreement
- Williamson Act Contract Cancellation

In addition, various local, State, or federal approvals or permits may be necessary, pursuant to applicable laws and regulations.

1.5 - Environmental Review

1.5.1 - Potential Environmental Effects

The EIR will evaluate whether the proposed project may potentially result in one or more significant environmental effects. The topics listed below will be further analyzed in the EIR.

- Aesthetics, Light, and Glare
- Air Quality / Greenhouse Gases
- Cultural Resources
- Hazards and Hazardous Materials
- Land Use
- Population and Housing
- Transportation
- Agricultural Resources
- Biological Resources
- Geology, Soils, and Seismicity
- Hydrology and Water Quality
- Noise
- Public Services and Utilities (includes Recreation)

1.5.2 - Effects Found Not To Be Significant

Because of site or project characteristics, the proposed projects would not have significant effects on the environmental issue areas listed below. These issues will be scoped out to the Effects Found Not To Be Significant section of the EIR.

Mineral Resources

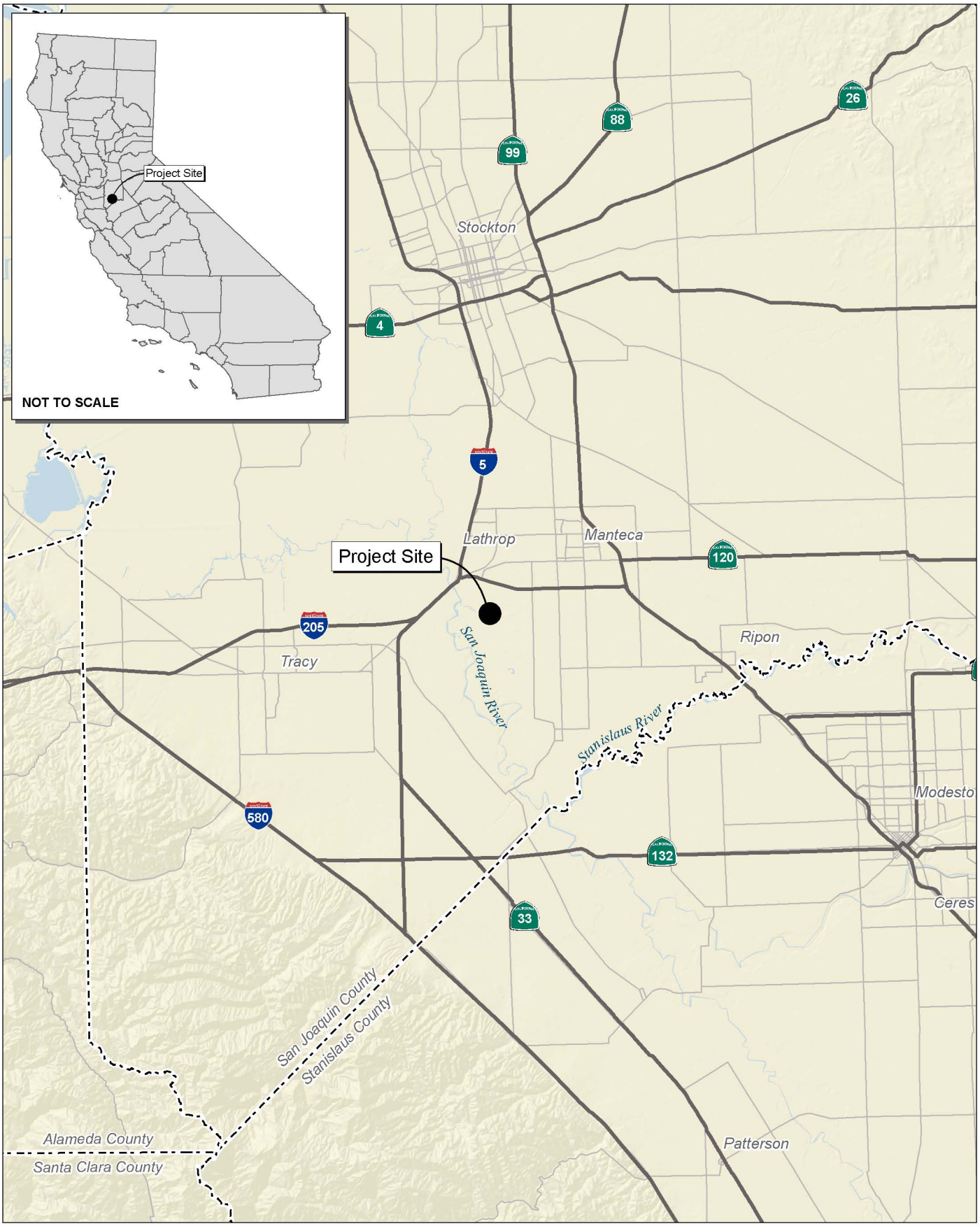
The areas encompassed by the proposed projects do not contain any known mineral deposits or active mineral extraction operations. This condition precludes the possibility of the loss of important mineral resources as a result of the proposed projects.

1.6 - Scoping Meeting

A public scoping meeting will be held at **7 p.m., Tuesday, August 10, 2010,** at the following location:

City of Manteca
City Council Chambers
1001 W. Center Street
Manteca, CA 95337

At this meeting, agencies, organizations, and members of the public will be able to review the proposed projects and provide comments on the scope of the environmental review process. At this meeting, agencies, organizations, and members of the public will be able to review the proposed project and provide comments on the scope of the environmental review process.



Source: Census 2000 Data, The CaSIL, MBA GIS 2010.

NORTH

5 2.5 0 5 Miles

Michael Brandman Associates

24820005 • 07/2010 | 1_regional.mxd

Exhibit 1
Regional Location Map

CITY OF MANTECA • THE TRAILS OF MANTECA
NOTICE OF PREPARATION



Source: San Joaquin County NAIP, 2009. Dahlin Group Architecture Planning, July 2010.

Exhibit 2
Local Vicinity Map
Aerial Base

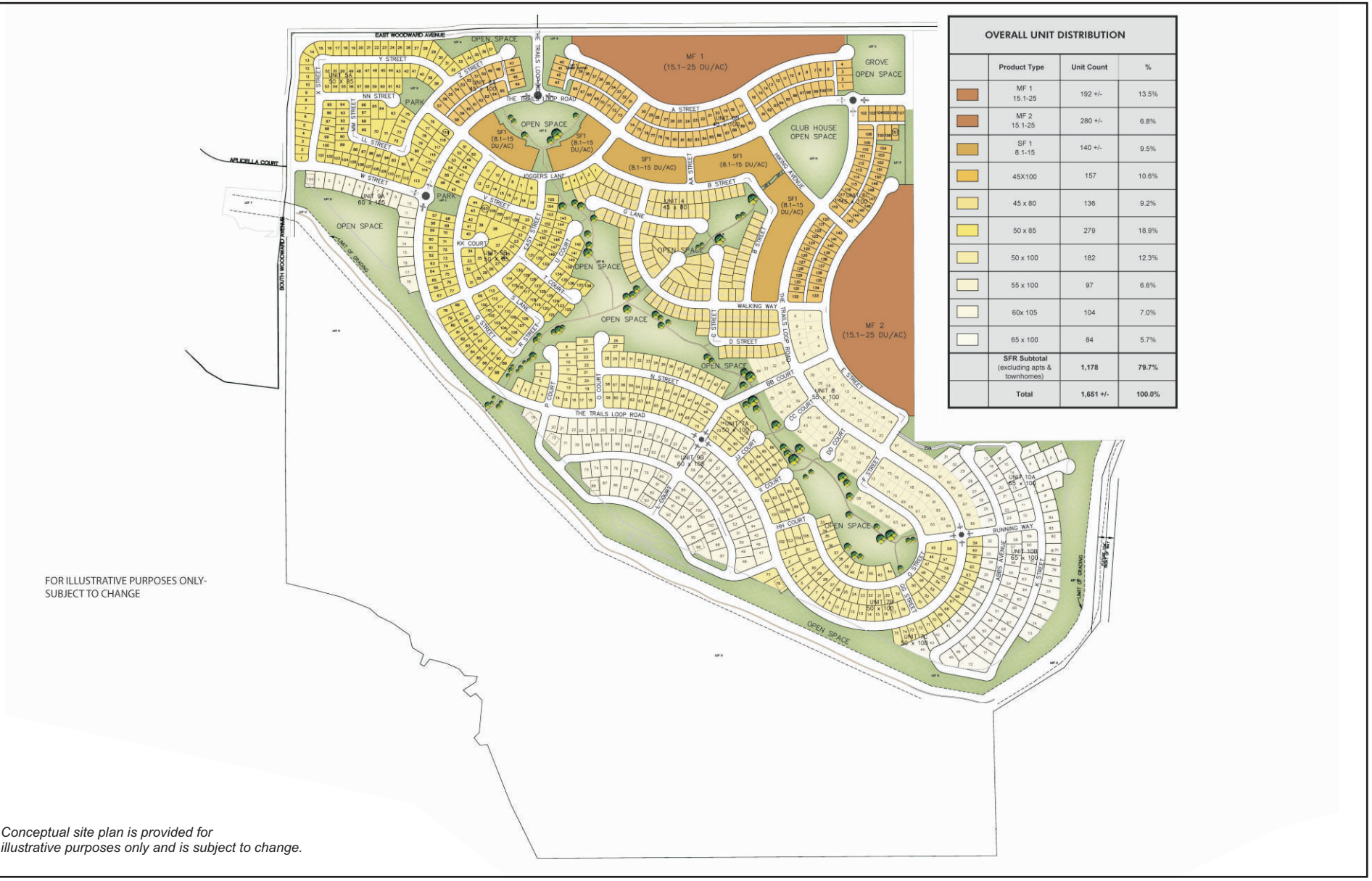
NORTH

2,000 1,000 0 2,000 Feet

Michael Brandman Associates

24820005 • 07/2010 | 2_local_aerial.mxd

CITY OF MANTECA • THE TRAILS OF MANTECA
NOTICE OF PREPARATION



OVERALL UNIT DISTRIBUTION

	Product Type	Unit Count	%
	MF 1 15.1-25	192 +/-	13.5%
	MF 2 15.1-25	280 +/-	6.8%
	SF 1 8.1-15	140 +/-	9.5%
	45X100	157	10.6%
	45 x 80	136	9.2%
	50 x 85	279	18.9%
	50 x 100	182	12.3%
	55 x 100	97	6.6%
	60x 105	104	7.0%
	65 x 100	84	5.7%
	SFR Subtotal (excluding apts & townhomes)	**1,178**	**79.7%**
	Total	**1,651 +/-**	**100.0%**

Conceptual site plan is provided for illustrative purposes only and is subject to change.

Source: Dahlin Group Architecture Planning, July 2010.

NORTH

800 400 0 800 Feet

Exhibit 3
Conceptual Site Plan

Michael Brandman Associates

24820005 • 07/2010 | 3_concep_site_plan.cdr

A.2 - Responses

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 STOCKTON, CA 95201
(1976 E. CHARTER WAY/1976 E. DR. MARTIN
LUTHER KING JR. BLVD. 95205)
TTY: California Relay Service (800) 735-2929
PHONE (209) 941-1921
FAX (209) 948-7194

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Be energy efficient!

July 20, 2010

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JUL 21 2010
COMMUNITY DEVELOPMENT
DEPARTMENT

10-SJ-5-PM 2.2
SCH# 2010072042
Trails of Manteca

Erika Durrer
City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337

Dear Ms. Durrer:

Thank you for your letter to the California Department of Transportation, District 10 Planning, requesting us to review the Notice of Preparation (NOP) for the proposed Trails of Manteca Project. This project site is located in the City of Manteca, bounded by E. Woodward Road (north, S. Woodward Avenue (west). The project site consists of five parcels totaling 477 acres. The Department has the following comments:

Prior to the start of work on the Traffic Impact Study (TIS) please submit a copy of the draft scope of work for review by Caltrans. This will ensure that the scope of work for the TIS adequately addresses the project study area, data collection, project trip generation, traffic study scenarios, analysis methodology, mitigation, technical analysis reports.

Upon completion of the TIS please provide three (3) paper copies along with a disk containing the complete electronic data files (Synchro 6, Sim Traffic, Traffix 7.9, HCS, etc.) for our review and comment. This will help expedite our review.

If you have any questions or would like to discuss our comments in more detail, please contact Kathy Selsor at (209) 948-7190 (e-mail: kathy_selsor@dot.ca.gov) or me at (209) 941-1921.

Sincerely,

TOM DUMAS, CHIEF
OFFICE OF METROPOLITAN PLANNING

C: SMorgan CA Office of Planning & Research

STATE OF CALIFORNIA
FACSIMILE COVER
10-2A-0049 (NEW 10/92)

ATTENTION:	FROM:	
Erika Durrer	**Kathy Selsor** **Department of Transportation** **1976 East Charter Way** **Stockton, CA 95205**	
UNIT/COMPANY: City of Manteca Community Development Department 1001 West Center Street Manteca, CA 95337	DATE: **7/20/10** FAX # (Include Area Code) (209) 948-7194	TOTAL PAGES (Including Cover Page) ATSS FAX 8-423-7194
DISTRICT/CITY PHONE # (& Area Code) FAX # (& Area Code) (209) 456-8522 **(209)923-8949**	PHONE # (& Area Code) (209) 948-7190 ORIGINAL DISPOSITION: Destroy ☐ Return ☐ Call for Pickup ☐	ATSS 8-423-7190

COMMENTS:

SJ-120-PM 2.2
SCH# 2010072042
Trails of Manteca

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

July 22, 2010

Erika Durrer
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337

RECEIVED
JUL 26 2010
COMMUNITY DEVELOPMENT
DEPARTMENT

Subject: Comments on Proposed Project

Project: NOP for the Trails of Manteca

District CEQA Reference No: 20090228

Dear Ms. Durrer:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the Trails of Manteca Project. The proposed project will include 1,178 single-family residences, 192 townhomes/garden apartments, 280 apartments and over 12 miles of trails. The District offers the following comments:

District Comments

1) The District recommends that any preliminary and final environmental review of the project's potential impact on air quality include the following:

   1a) A description of the regulatory environment and existing air quality conditions impacting the area. Information on the District's attainment status can be found on the District's web page at http://valleyair.org/aqinfo/attainment.htm.

   1b) A description of the project, including a discussion of existing and post-project emissions.

      i) The discussion should include emissions from short-term activities such as construction, and emissions from long-term activities, such as operational, and area wide emission sources. Emissions from permitted (stationary sources) and non-permitted (mobile sources) sources should be analyzed separately. The project should be considered to have a significant adverse impact on air quality if emissions from either source exceed the following amounts: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

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reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

ii) A discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment.

iii) At this time there are no established significance thresholds for greenhouse gas emissions, however, it is suggested that the EIR include a discussion of greenhouse gas emissions generated by the project and the effect they will have, if any, on global climate change.

2) If the project is located near residential/ sensitive receptors, the proposed project should be evaluated to determine the health impact of TACs (Toxic Air Contaminants) to the near-by receptors.

2a) Prior to conducting a Health Risk Assessment (HRA), an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 10 or more, the project has the potential to exceed the District's significance threshold for health impacts of 10 in a million. Information on conducting a prioritization can be obtained from the District by contacting Mr. Leland Villalvazo, Supervising Air Quality Specialist, at hramodeler@valleyair.org.

2b) If the prioritization score indicates that toxic air contaminants (TACs) are a concern, the District recommends that a Health Risk Assessment (HRA) be performed. If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. Please contact Mr. Leland Villalvazo, Supervising Air Quality Specialist, at hramodeler@valleyair.org. Additional information on TACs can be found on the District's Air Quality Modeling page:

http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm

3) A discussion of whether the project would create nuisance odors.

4) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality.

5) A discussion of all existing District regulations that apply to the project.

6) A discussion of all feasible measures that will reduce air quality impacts.

7) Based on information provided to the District, the proposed project would equal or exceed 50 residential units. Therefore, the District concludes that the proposed project is subject to District Rule 9510 (Indirect Source Review).

   District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit. If approval of the subject project constitutes the last discretionary approval by your agency, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

8) The proposed project may be subject to District Rules and Regulations, including: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance Office at (209) 557-6446. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm.

9) The District recommends that a copy of the District's comments be provided to the project proponent.

If you have any questions or require further information, please call David McDonough at (559) 230-5920.

Sincerely,

David Warner
Director of Permit Services

for, Arnaud Marjollet
Permit Services Manager
DW:dm
cc: File

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

August 3, 2010

Regulatory Division SPK-2010-00928

City of Manteca
Attn: Erika Durrer
Community Development Department
Planning Division
1001 West Center Street
Manteca, CA 95337

Dear Ms. Erika Durrer:

We are responding to your July 15, 2010 request for comments on the proposed Trails of Manteca Project. The project is located in the City of Manteca, Section 12, Township 2 South, Range 6 East, Mount Diablo Meridian, Latitude 37.76828°, Longitude -121.28085°, San Joaquin County, California. Your identification number is SPK-2010-00928.

The Corps of Engineers' jurisdiction within the proposed project site is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters on the project site, the applicant should prepare a wetland delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Wetland Delineations", under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

Please refer to identification number SPK-2010-00928 in any correspondence concerning this project. If you have any questions, please contact Julie Dickinson at, 1325 J Street,

Sacramento, California, 95814-2922, email *Julie.E.Dickinson@usace.army.mil*, or telephone 916-557-5254. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/regulatory.html*.

Sincerely,

ORIGINAL SIGNED

Kathleen A. Dadey, Ph.D
Chief, California Delta Branch

Copy Furnished without enclosures:

Mr. Jason Brandman, Michael Brandman Associates, 2633 Camino Ramon, Suite 460, San Ramon, CA 94583
Weatherbee Properties, LLC, 3000 Danville Boulevard, F545, Alamo, CA 94507

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
3330 North Ad Art Road
Stockton, California 95215
(209) 943-8666
(800) 735-2929 (TT/TDD)
(800) 735-2922 (Voice)

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AUG 12 2010
COMMUNITY DEVELOPMENT
DEPARTMENT

August 8, 2010

File No.: 265.9921.14866

Erika Durrer
City of Manteca
1001 W. Center Street
Manteca, CA 95337

Dear Ms. Durrer:

Thank you for the opportunity to review The Trails of Manteca Project Notice of Preparation for an Environmental Impact Report (EIR) (SCH #2010072042). After review, I would like to apprise you of our concerns with this project.

The proposed The Trails of Manteca project will include a residential development with various densities in order to facilitate a variety of housing products including 1,178 single family residences, 192 townhomes/garden apartments, and 280 apartments. The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the trail system proposed by the City. The proposed project also includes over 75 acres of linear parks and a clubhouse to be utilized by the residents.

The expected increase in traffic volumes during the phases of construction, and after the completion of the project, will have a significant impact on SR-120 vehicular traffic, as well as the surrounding county roadways. This project will require the California Highway Patrol (CHP) to redirect staffing to effectively manage traffic absent an increase in resources. The impacts of this project should be further addressed in the project's EIR. Therefore, I recommend the City of Manteca work closely with the Department of Transportation (Caltrans) as well as the CHP and San Joaquin County in developing long range and short-term plans that are beneficial to all the citizens utilizing the highway system. Should you have any questions, please feel free to call my staff at (209) 943-8666.

Sincerely,

J. E. DIAL, Captain
Commander
Stockton Area

cc: Valley Division
cc: California Highway Patrol, Special Projects Section

From: Tim Miles [mailto:TMiles@dtsc.ca.gov]
Sent: Friday, August 06, 2010 8:03 AM
To: Durrer, Erika
Cc: Nancy Ritter
Subject: The Trails at Manteca Project

Good Morning Erika,

The Department of Toxic Substances Control (DTSC) has reviewed the document described above that proposes rezoning agricultural property to residential and building residential housing on the land. DTSC recommends that additional research be conducted to determine whether pesticides were used on the proposed development site. The site should be evaluated to determine if and where storage, mixing, rinsing and disposal of pesticides may have occurred and whether contamination exists.

In addition, although DTSC does not regulate pesticides legally applied to crops, if pesticides have historically been used on the property, we strongly recommend that these areas be tested for environmentally persistent pesticides such as organic pesticides and metals prior to development. The results of any testing should be evaluated to determine if concentrations present in soils will be protective of residents and workers.

Please contact me by email at tmiles@dtsc.ca.gov or by telephone at (916) 255-3710 if you have any questions.

Sincerely,

Tim Miles
Hazardous Substances Scientist

Tim Miles
Hazardous Substances Scientist
Brownfields and Environmental Restoration Program Department of Toxic Substances Control 8800 Cal Center Drive Sacramento, CA 95826
Phone: (916) 255-3710
Fax: (916) 255-3696
Email: tmiles@dtsc.ca.gov

San Joaquin County
Environmental Health Department
600 East Main Street
Stockton, California 95202-3029

Website: www.sjgov.org/ehd
Phone: (209) 468-3420
Fax: (209) 464-0138

DIRECTOR
Donna Heran, REHS

PROGRAM COORDINATORS
Robert McClellon, REHS
Jeff Carruesco, REHS, RDI
Kasey Foley, REHS

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AUG 16 2010

COMMUNITY DEVELOPMENT DEPARTMENT

August 12, 2010

Erika Durrer, Senior Planner
Community Development Department
Planning Division
City of Manteca
1001 West Center Street
Manteca, California 95337

Subject: Notice of Preparation of a Draft Environmental Impact Report for the Trails of Manteca Project

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The San Joaquin County Environmental Health Department (EHD) is supportive of this project in regards to the provision of full public services. The EHD requests the following comments be added to the above project for consideration:

A. The existing home is being served by onsite sewage disposal systems and individual wells for domestic and irrigation purposes. The EHD recommends that as a part of developing these properties, the existing wells and septic systems shall be destroyed under permit and inspection with the EHD.

B. The EHD has reviewed the document described above that proposes rezoning agricultural property that is actively farmed to allow for a variety of medium to high density residential projects. EHD recommends that additional research be conducted to determine whether pesticides were used on the proposed development site(s). The site(s) should be evaluated to determine if and where storage, mixing, rinsing and disposal of pesticides may have occurred and whether contamination exists.

C. In addition, although EHD does not regulate pesticides legally applied to crops, if pesticides have historically been used on the property, we strongly recommend that these areas be tested for environmentally persistent pesticides such as organic pesticides and metals prior to development. The results of any testing should be evaluated to determine if concentrations present in soils will be protective of residents and workers.

If you have any questions, please call Rodney Estrada, Lead Senior Registered Environmental Health Specialist, at (209) 468-0331.

Rodney Estrada,
Lead Senior REHS

RE:tl

Durrer, Erika

From: Chuck McCabe [cmccabe768@aol.com]
Sent: Friday, August 13, 2010 4:58 PM
To: Durrer, Erika
Subject: The Trails of Manteca Project, Public Comment
Attachments: Reclamation District.pdf

Erika,

Attached is a letter from Reclamtion District #2096. Please call if you have any questions.

Regards,
Chuck McCabe
Reclamation District #2096
PO Box 202
Manteca, CA 95336
209.652.4954 * Fax 209.823.2276

Reclamation District #2096
PO Box 202
Manteca, CA 95336

August 13, 2010

Erika Durrer, Senior Planner
City of Manteca
Community Development Department
Planning Division
1001 W. Center Street
Manteca, CA 95337
Via Email

RE: Public Comment for The Trails of Manteca Project, Preparation of the Draft EIR

Dear Erika Durrer:

I am President of Reclamation District #2096. We are located south of the flood levee at the south side of The Trails Development. We manage the flood control gate for the Wetherbee Lake Subdivision

As Eileen Young has possibly mentioned we maintain the water level of Wetherbee Lake during the winter months.

Wetherbee Lake *cannot* hold any more water because of the existing run-off. If there is any run-off, storm water flow to Wetherbee Lake or Walthall Slough it will be more than our pumping system can handle.

Please advise us of your storm water discharge and if it is planned for Walthall Slough or Wetherbee Lake. We would be open to taking the storm flow but the pumps and the depth of Wetherbee Lake and Walthall Slough need to be addressed.

Sincerely,

Chuck McCabe, President
Reclamation District #2096

209.652.4954 * Fax 209.823.2276

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202

***209.235.0600** • 209.235.0438 (fax)*
www.sjcog.org

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Chuck Winn
VICE CHAIR

Andrew T. Chesley
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LATHROP,
LODI,
MANTECA,
RIPON,
STOCKTON,
TRACY,
AND
THE COUNTY OF
SAN JOAQUIN

August 16, 2010

Ms. Erika Durrer, Senior Planner
Community Development Department
City of Manteca
1001 W. Center St., Manteca CA 95337

Dear Ms. Durrer:

Re: CMA Review - City of Manteca Notice of Preparation (NOP)
THE TRAILS OF MANTECA

Thank you for the opportunity to comment on the DEIR for the Trails of Manteca project. As the County's designated Regional Transportation Planning Agency (RTPA), the Congestion Management Agency (CMA), and the Metropolitan Planning Organization (MPO), the San Joaquin Council of Governments (SJCOG) has reviewed the above-referenced document with respect to transportation and circulation impacts pursuant to the California Environmental Quality Act (CEQA).

Establishing and maintaining a Regional Congestion Management Program (RCMP) is required by State Govt. Code, Section 65088 – 65089.10 and the County's Measure K Renewal Ordinance. The purpose of the RCMP is to monitor the cumulative transportation impacts of growth of the regional roadway system (the Network), establish a level of service standard, identify deficient regional roadways and develop plans to mitigate the deficiencies, and facilitate travel demand management and operational preservation strategies for existing and planned development. The attached exhibit shows the roadways within the County that are currently monitored as part of the adopted Network.

One of the major implementation actions of the RCMP is to establish and monitor Level of Service (LOS) conditions on the Network and to assess where any deficiencies exist. A roadway segment is considered deficient if operating at a LOS of "E" or "F" (as calculated per the RCMP's adopted methodology). Once a roadway segment is identified as deficient, the agency where the majority of a segment physically lies will have twelve months to prepare a Deficiency Plan. Government Code Section 65089.4 details the required analysis and components of a Deficiency Plan.

A second major implementation action of the CMP is the CMA's requirement to analyze and comment on future land uses (threshold criteria are projects that may generate 125 or greater peak hour trips) that may impact roadways located within the RCMP network. The *Land Use Analysis Process* was adopted as part of the 2007 Regional Congestion Management Plan and is also a requirement of state CMP statute and the Measure K Renewal Ordinance.

The significance thresholds within the 2010 CEQA Guidelines, Appendix G, with a direct relation to CMA, MPO, and RTPA authority are:

XVI. TRANSPORTATION/TRAFFIC – Would the project:

a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

b) *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

As it is probable that the land uses proposed with this project will generate 125 or more peak hour trips, SJCOG, in implementing the RCMP, requires that the potential impacts to roadways be analyzed within the project's Traffic Impact Analysis (TIA) and the findings summarized within the DEIR. The DEIR should contain a section that specifically addresses requirements and standards of the Regional Congestion Management Program. If the project trips result in a degradation of LOS conditions, the identification and implementation of mitigation measures to resolve or mitigate the identified impact(s), including an estimate of the costs associated with the mitigation is required per state CMP statute.

In determining a significant impact (roadway deficiency), state CMP statute mandates that the following trips are excluded from the volumes used in determining the impact:

1) Interregional travel (trips that originate outside the county's boundary);
2) Traffic generated by the provision of low-income and very low income housing;
3) Traffic generated by high-density residential development located within one-fourth mile of a fixed rail passenger station; and,
4) Traffic generated by any mixed use development located within one-fourth mile of a fixed rail passenger station, if more than half of the land area, or floor area, of the mixed use development is used for high density residential housing, as determined by the agency.

It should also be noted that certain roadways were allowed to be "grandfathered" at their existing LOS at the time of program inception in the early 1990s. Within your project area, the following segment falls into this category:

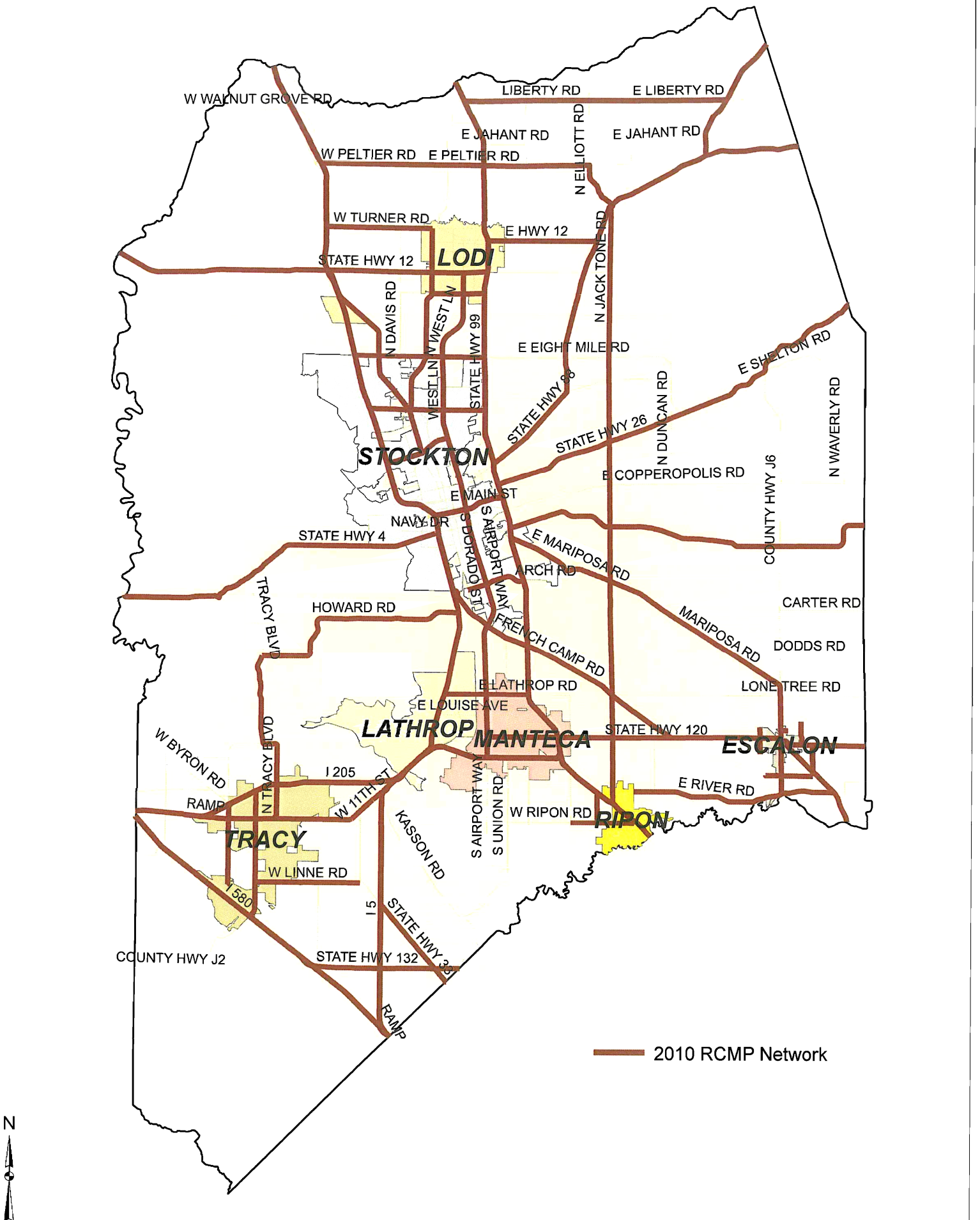
LOS Standard of "F"		
Manteca	SR-120	Yosemite Ave. undercrossing to SR-99

Thank you for the opportunity to review and comment on this project. If you have any questions please call the RCMP's lead planner, Laura Brunn, at (209) 235-0579. We would be pleased to meet with the city and provide any necessary information and guidance relative to these comments and the Regional Congestion Management Program, if that would be helpful.

Sincerely,

LAURA BRUNN
SJCOG Associate Regional Planner

Cc: Dana Cowell, SJCOG Deputy Director
Mike Swearingen, SJCOG Senior Regional Planner


W WALNUT GROVE RD
LIBERTY RD
E LIBERTY RD
E JAHANT RD
E JAHANT RD
W PELTIER RD
E PELTIER RD
N ELLIOTT RD
W TURNER RD
E HWY 12
STATE HWY 12
LODI
N JACK TONE RD
N DAVIS RD
W WEST LN
STATE HWY 99
E EIGHT MILE RD
E SHELTON RD
STATE HWY 88
N DUNCAN RD
STATE HWY 26
N WAVERLY RD
STOCKTON
E COPPEROPOLIS RD
COUNTY HWY J6
E MAIN ST
NAVY DR
S EL DORADO ST
S AIRPORT WAY
E MARIPOSA RD
STATE HWY 4
ARCH RD
CARTER RD
TRACY BLVD
HOWARD RD
MARIPOSA RD
FRENCH CAMP RD
DODDS RD
E LATHROP RD
LONE TREE RD
E LOUISE AVE
LATHROP
MANTECA
STATE HWY 120
ESCALON
W BYRON RD
N TRACY BLVD
I 205
W 11TH ST
E RIVER RD
RAMP
S AIRPORT WAY
S UNION RD
W RIPON RD
RIPON
TRACY
KASSON RD
W LINNE RD
I 580
I 5
STATE HWY 33
COUNTY HWY J2
STATE HWY 132
RAMP
2010 RCMP Network
N

Robert C. & Eileen R. Young
2107 Terraza Place
Fullerton, CA 92835

August 12, 2010

City of Manteca
Community Development Department
Planning Division
1001 West Center Street
Manteca, CA 95337

VIA EMAIL

Attention: Erika E. Durrer, Senior Planner
edurrer@ci.manteca.ca.us
Re: Public Comment for The Trails of Manteca Project
Preparation of the Draft EIR

Thank you for the opportunity to address concerns we have about the high density residential development , The Trails of Manteca. We are property owners in the Wetherbee Lake Subdivision (NOT to be confused with Weatherbee Properties LLC) located southwest of the proposed Trails Project. The Wetherbee Lake Subdivision was developed in 1932. It is located in San Joaquin County and is also in the Sphere of Influence in the Manteca General Plan. All of the homes from the cross-levee to the Turtle Beach resort rely on well water and septic tanks. We have no fire hydrants and rely on the Manteca Lathrop Fire Department to utilize a tanker truck in case of a fire. There is only one way in and one way out of our subdivision with approximately 70 homes as well as homes along Williamson Road and in the Islander Mobile Home Park. Our zoning designation is AG40. We are also located in a flood zone and in 1997 our entire subdivision was flooded and under water for two months.

We are concerned about the cumulative effect of the development along Woodward Avenue on our subdivision, the environment, and the rural nature of our homes. In all of your discussions we would request that you take into consideration the previously approved subdivisions along Woodward between Airport Way and the Wetherbee Lake Subdivision, including the proposed developments on the SW corner of Airport Way and the incomplete Oakwood Shores as well as proposed development along McKinley. We would like you to address the following in preparation of the Draft EIR:

1. CANCELLATION OF THE WILLIAMSON ACT CONTRACT
   Cancellation of the Williamson Act Contract begins to change the rural nature of our subdivision which has existed for more than 78 years. We are opposed to this change.
2. GENERAL PLAN AMENDMENT AND ZONE CHANGE
   Will allow for increased density.

3. Proposed density of 1,651 units with approximately 4 persons per dwelling will add more than 4,000 people along this portion of Woodward Avenue. The increased traffic will affect residents going in and out of our subdivision. This high density will impact the ability of emergency vehicles to reach our subdivision. Will those emergency vehicles be able to reach us in the critical response time? Fire, medical emergency, and drowning accidents must be addressed. How will the school buses be affected? How much will the commute time increase for students in our subdivision? Will there be a need for additional buses at the Manteca School District to

take both elementary and high school students? How will the commute time be affected morning and evening? With the increased traffic we will also have increased pollution. There will be more than 6500 trips in and out of this subdivision daily. Density and traffic will have a direct impact on evacuation from fire or flood in our subdivision.

4. Noise is another issue. This proposed density will also increase noise. Since the elimination of the Manteca Water Slides and the change in the zoning for Oakwood Shores, there is increased noise caused by the removal of trees. The trains that cross the river now sound like they are coming through our house. The sound from Highway 120 is also an issue now. We do not want to have to drive to our home along a block wall corridor similar to the one located on the opposite end of Woodward. We do not want to bring the concrete jungle to SW Manteca.

5. The increased density will also bring more street lights in a place where you can still see the stars at night.

6. Additional areas that need to be addressed: water runoff, sewage treatment, groundwater, and the aquifer. What is going to happen to water runoff? How will sewage treatment be handled? What about groundwater seepage and protection of the aquifer? How are you going to protect Walthall Slough? At one time the City of Manteca was planning to put a nature habitat (wetlands) south of the dry levee as referenced in the Trails Project. What are the plans now and are you planning to return treated water to this portion of the property? The Wetherbee Lake Subdivision is bordered on one side by Walthall Slough. Reclamation District 2096 maintains a flood gate across Walthall Slough. It was built in 1962 by the Army Corps of Engineers to protect against flooding. Any runoff from The Trails will impact the depth in Walthall Slough and the storage area we require during high rain periods, high tides and extreme flood conditions. In high water, we rely upon the flood gate closing and pumping water from the residential side out into the river. Any sediment draining into Walthall will impede our storage and will require remediation. Additional water in Walthall will require additional electricity to run the pumps at an increased cost to Reclamation District 2096. If runoff will be directed to Walthall what provisions are being made to increase the water storage in Walthall? It is important to maintain depth and volume for proper wild life and flood prevention during gate closings.

7. Will you have ponds for sewage treatment? How will you guarantee protection of Walthall Slough? We do not want contamination in Walthall Slough.

8. The area of the proposed Trails development is home to all sorts of wildlife. Foxes, raccoons, opossum, rabbits, squirrels, hawks, egrets, blue heron and birds too numerous to mention. This wildlife will either be displaced or will cease to exist in our agricultural zone.

9. Manteca Lathrop Fire Department has to cross through the Manteca Fire Department area in order to service our subdivision. San Joaquin County Office of Emergency Services must be consulted along with the fire departments to establish how evacuation and response to an emergency will be achieved in our neighborhood. Every property owner should be informed.

10. We believe that LAFCO does not want to create "islands." All of the development along Woodward is creating an "island" in San Joaquin County which includes the Wetherbee Lake

Subdivision, the Islander Mobile Home Park, Turtle Beach Resort and the homes along Williamson Road. Have you consulted with LAFCO?

11. Construction will also have a negative effect on the Wetherbee Lake Subdivision. We currently have one narrow road in and out. There will be delays for construction grading, installation of sewer and water lines, utilities, and deliveries for starters. Vehicles in our area will be subject to dust and dirt on a continual basis during construction. How many years is that going to take? How much dust and dirt will get into Walthall Slough?

We would ask you to immediately reduce the density of this development and not destroy the rural lifestyle that we enjoy in the Wetherbee Lake Subdivision. Apartments do not belong in this type of development and location. Apartments should be built closer to those along Highway 120 and near the proposed transit station in the center of town. Thank you again for allowing us to voice our concerns regarding our subdivision.

Sincerely yours,

Robert C. Young
Eileen R. Young
714.971-7249

Appendix B:
Land Evaluation and Site Assessment Model

Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A	B	C	D	E	F	G	H
Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
130 Columbia fine sandy loam (0 to 2 percent slopes)	220.87	0.46	2s	80	36.6	70	32.0
142 Delhi loamy sand (0 to 2 percent slopes)	4.67	0.01	3s	60	0.6	70	0.7
145 Dello loamy sand, drained (0 to 2 percent slopes)	68.37	0.14	3w	60	8.5	30	4.3
152 Egbert mucky clay loam, partially drained (0 to 2 percent slopes)	0.08	0.00	2w	80	0.0	50	0.0
166 Grangeville fine sandy loam, partially drained (0 to 2 percent slopes)	0.3	0.00	2w	80	0.0	70	0.0
169 Guard clay loam, drained (0 to 2 percent slopes)	15.24	0.03	2w	80	2.5	50	1.6

Site Assessment Worksheet 1

Project Size Score

I	J	K
LCC Class I - II	LCC Class III	LCC Class IV - VIII
220.87		
	4.67	
	68.37	
0.08		
0.3		
15.24		

Scenario 1: Conversion of Entire Site

197 Merrit silty clay loam, partially drained (0 to 2 percent slopes)	146.21	0.30	2w	80	24.2	50	15.2		146.21	
255 Tinnin loamy course sand (0 to 2 percent slopes)	26.71	0.06	3s	60	3.3	50	2.8			26.71
Totals	482.45	1.00		**LCC Total Score**	75.9	**Storie Index Total Score**	56.5	**Total Acres**	382.7	99.75
								Project Size Scores	100	80

(Must Sum to 1.0)

Highest Project Size Score	100

Table 2. Numeric Conversion of Land Capability Classification Units

Land Capability Classification	LCC Point Rating
I	100
IIe	90
IIs,w	80
IIIe	70
IIIs,w	60
IVe	50
IVs,w	40
V	30
VI	20
VII	10
VIII	0

Table 3. Project Size Scoring

LCC Class I or II soils	
Acres	*Score*
80 or above	100
60-79	90
40-59	80
20-39	50
10-19	30
fewer than 10	0

LCC Class III soils	
Acres	*Score*
160 or above	100
120-159	90
80-119	80
60-79	70
40-59	60
20-39	30
10-19	10
fewer than 10	0

LCC Class IV or lower	
Acres	*Score*
320 or above	100
240-319	80
160-239	60
100-159	40
40-99	20
fewer than 40	0

Source of Table 2 and Table 3: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Site Assessment Worksheet 2 - Water Resources Availability

A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (C x D)
1	Irrigated water	1	65	65
2				
		(Must Sum to 1.0)	**Total Water Resource Score**	65

Table 5. Water Resource Availability Scoring

Option	Non-Drought Years			Drought Years			WATER RESOURCE SCORE
	RESTRICTIONS			RESTRICTIONS			
	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	
1	YES	NO	NO	YES	NO	NO	100
2	YES	NO	NO	YES	NO	YES	95
3	YES	NO	YES	YES	NO	YES	90
4	YES	NO	NO	YES	YES	NO	85
5	YES	NO	NO	YES	YES	YES	80
6	YES	YES	NO	YES	YES	NO	75
7	YES	YES	YES	YES	YES	YES	65
8	YES	NO	NO	NO	-- --	-- --	50
9	YES	NO	YES	NO	-- --	-- --	45
10	YES	YES	NO	NO	-- --	-- --	35
11	YES	YES	YES	NO	-- --	-- --	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Source of Table 5: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Site Assessment Worksheet 3

Surrounding Agricultural Land and Surrounding Protected Resource Land

A	B	C	D	E	F	G
Zone of Influence						
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (A/C)	Surrounding Agricultural Land Score (From Table)	Surrounding Protected Resource Land Score (From Table)
5153.6	4419.59	3461.78	85.8%	67%	90	60

Table 6. Surrounding Agricultural Land Rating

Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

Table 7. Surrounding Protected Resource Land Rating

Percent of Project's Zone of Influence Defined as Protected	Surrounding Protected Resource Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

Source of Table 6 and Table 7: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Final LESA Score Sheet

Calculation of the Final LESA Score:

(1) Multiply each factor score by the factor weight to determine the weighted score and enter in Weighted Factor Scores Column.
(2) Sum the weighted factor scores for the LE factors to determine the total LE score for the project.
(3) Sum the weighted factor scores for the SA factors to determine the total SA score for the project.
(4) Sum the total LE and SA scores to determine the Final LESA Score for the Project.

	Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors			
Land Capability Classification	75.9	0.25	19.0
Storie Index	56.5	0.25	14.1
LE Subtotal		0.50	33.1
SA Factors			
Project Size	100.0	0.15	15.0
Water Resource Availability	65.0	0.15	9.8
Surrounding Agricultural Land	90.0	0.15	13.5
Protected Resource Land	60.0	0.05	3.0
SA Subtotal		0.50	41.3
		Final LESA Score	74.3

Impact Determination **Significant**

Table 9. California LESA Model Scoring Thresholds

Total LESA Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points
80 to 100 Points	Considered Significant

Source of Table 9: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Scenario 2: Conversion of 300 acres

Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A	B	C	D	E	F	G	H
Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
130 Columbia fine sandy loam (0 to 2 percent slopes)	164.9	0.55	2s	80	44.3	70	38.8
142 Delhi loamy sand (0 to 2 percent slopes)	4.67	0.02	3s	60	0.9	70	1.1
145 Dello loamy sand, drained (0 to 2 percent slopes)	50.18	0.17	3w	60	10.1	30	5.1
152 Egbert mucky clay loam, partially drained (0 to 2 percent slopes)	0.08	0.00	2w	80	0.0	50	0.0
166 Grangeville fine sandy loam, partially drained (0 to 2 percent slopes)	0.3	0.00	2w	80	0.1	70	0.1
169 Guard clay loam, drained (0 to 2 percent slopes)	15.24	0.05	2w	80	4.1	50	2.6

Site Assessment Worksheet 1

Project Size Score

I	J	K
LCC Class I - II	LCC Class III	LCC Class IV - VIII
164.9		
	4.67	
	50.18	
0.08		
0.3		
15.24		

Scenario 2: Conversion of 300 acres

197 Merrit silty clay loam, partially drained (0 to 2 percent slopes)	35.7	0.12	2w	80	9.6	50	6.0		35.7	
255 Tinnin loamy course sand (0 to 2 percent slopes)	26.71	0.09	3s	60	5.4	50	4.5			26.71
Totals	297.78	1.00		**LCC Total Score**	74.5	**Storie Index Total Score**	58.0	**Total Acres**	216.22	81.56
								Project Size Scores	100	80

(Must Sum to 1.0)

Highest Project Size Score	100

Table 2. Numeric Conversion of Land Capability Classification Units

Land Capability Classification	LCC Point Rating
I	100
IIe	90
IIs,w	80
IIIe	70
IIIs,w	60
IVe	50
IVs,w	40
V	30
VI	20
VII	10
VIII	0

Table 3. Project Size Scoring

LCC Class I or II soils	
Acres	*Score*
80 or above	100
60-79	90
40-59	80
20-39	50
10-19	30
fewer than 10	0

LCC Class III soils	
Acres	*Score*
160 or above	100
120-159	90
80-119	80
60-79	70
40-59	60
20-39	30
10-19	10
fewer than 10	0

LCC Class IV or lower	
Acres	*Score*
320 or above	100
240-319	80
160-239	60
100-159	40
40-99	20
fewer than 40	0

Source of Table 2 and Table 3: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Site Assessment Worksheet 2 - Water Resources Availability

A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (C x D)
1	Irrigated water	1	65	65
2				
		(Must Sum to 1.0)	**Total Water Resource Score**	65

Table 5. Water Resource Availability Scoring

Option	Non-Drought Years			Drought Years			WATER RESOURCE SCORE
	RESTRICTIONS			RESTRICTIONS			
	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	
1	YES	NO	NO	YES	NO	NO	100
2	YES	NO	NO	YES	NO	YES	95
3	YES	NO	YES	YES	NO	YES	90
4	YES	NO	NO	YES	YES	NO	85
5	YES	NO	NO	YES	YES	YES	80
6	YES	YES	NO	YES	YES	NO	75
7	YES	YES	YES	YES	YES	YES	65
8	YES	NO	NO	NO	-- --	-- --	50
9	YES	NO	YES	NO	-- --	-- --	45
10	YES	YES	NO	NO	-- --	-- --	35
11	YES	YES	YES	NO	-- --	-- --	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Source of Table 5: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Site Assessment Worksheet 3

Surrounding Agricultural Land and Surrounding Protected Resource Land

A	B	C	D	E	F	G
Zone of Influence						
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (A/C)	Surrounding Agricultural Land Score (From Table)	Surrounding Protected Resource Land Score (From Table)
5153.6	4602.58	3752.04	89.3%	73%	90	70

Table 6. Surrounding Agricultural Land Rating

Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

Table 7. Surrounding Protected Resource Land Rating

Percent of Project's Zone of Influence Defined as Protected	Surrounding Protected Resource Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

Source of Table 6 and Table 7: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Final LESA Score Sheet

Calculation of the Final LESA Score:

(1) Multiply each factor score by the factor weight to determine the weighted score and enter in Weighted Factor Scores Column.
(2) Sum the weighted factor scores for the LE factors to determine the total LE score for the project.
(3) Sum the weighted factor scores for the SA factors to determine the total SA score for the project.
(4) Sum the total LE and SA scores to determine the Final LESA Score for the Project.

	Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors			
Land Capability Classification	74.5	0.25	18.6
Storie Index	58.0	0.25	14.5
LE Subtotal		0.50	33.1
SA Factors			
Project Size	100.0	0.15	15.0
Water Resource Availability	65.0	0.15	9.8
Surrounding Agricultural Land	90.0	0.15	13.5
Protected Resource Land	70.0	0.05	3.5
SA Subtotal		0.50	41.8
		Final LESA Score	74.9

Impact Determination **Significant**

Table 9. California LESA Model Scoring Thresholds

Total LESA Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points
80 to 100 Points	Considered Significant

Source of Table 9: California Land Evaluation and Site Assessment Model Instruction Manual, 1997

Appendix C:
Air Quality Supporting Data

Air Quality Modeling Data
Trails of Manteca
City of Manteca, California

Prepared for:

City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
209.239.8427

Contact: Mark C. Nelson, Community Development Director

Prepared by:

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

Contact: Grant Gruber, Project Manager
Author: Cori Wilson, Air Quality and Climate Change Specialist

Michael Brandman Associates

September 22, 2010

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9/22/2010 4:59:14 PM

Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Mitigated Emissions (Tons/Year)

File Name: C:\MBA\Client\24820005 Trails of Manteca\AQ Models\24820005 Trails of Manteca.urb924

Project Name: Trails of Manteca - Operation and Unmitigated Construction

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 (Annual Tons Per Year, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2

2012	23.07	28.01	73.33	0.08	5.61	1.14	6.75	1.23	1.03	2.26	10,788.30
Mass Grading 01/02/2012-01/08/2012	0.02	0.17	0.09	0.00	0.18	0.01	0.19	0.04	0.01	0.05	21.67
Mass Grading Dust	0.00	0.00	0.00	0.00	0.18	0.00	0.18	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.02	0.15	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	18.23
Mass Grading On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
Fine Grading 01/09/2012-01/31/2012	0.13	1.05	0.56	0.00	5.04	0.05	5.09	1.05	0.05	1.10	114.46
Fine Grading Dust	0.00	0.00	0.00	0.00	5.04	0.00	5.04	1.05	0.00	1.05	0.00
Fine Grading Off Road Diesel	0.12	1.05	0.53	0.00	0.00	0.05	0.05	0.00	0.05	0.05	110.54
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	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Asphalt 02/01/2012-02/17/2012	0.11	0.34	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	42.96
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.18	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	14.70
Paving On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.79
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Building 02/20/2012-12/31/2012	3.84	26.42	71.94	0.08	0.39	1.06	1.44	0.14	0.96	1.09	10,542.48
Building Off Road Diesel	1.88	19.78	7.37	0.00	0.00	0.73	0.73	0.00	0.67	0.67	2,556.07
Building Vendor Trips	0.28	3.32	2.92	0.01	0.03	0.13	0.16	0.01	0.12	0.13	743.82
Building Worker Trips	1.69	3.32	61.65	0.07	0.36	0.20	0.56	0.13	0.17	0.30	7,242.58
Coating 09/01/2012-12/31/2012	18.98	0.03	0.57	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.73
Architectural Coating	18.96	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	0.57	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.73

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/9/2012 - 1/31/2012 - Grading of entire site

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:
PM10: 55% PM25: 55%
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%
The following mitigation measures apply to Phase: Mass Grading 1/2/2012 - 1/8/2012 - Demolition of onsite trees and structures
For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:
PM10: 84% PM25: 84%
For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:
PM10: 55% PM25: 55%
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%

Phase Assumptions

Phase: Fine Grading 1/9/2012 - 1/31/2012 - Grading of entire site
Total Acres Disturbed: 278.3
Maximum Daily Acreage Disturbed: 69.58
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 33000 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 10 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 10 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 1/2/2012 - 1/8/2012 - Demolition of onsite trees and structures
Total Acres Disturbed: 94
Maximum Daily Acreage Disturbed: 24
Fugitive Dust Level of Detail: Default

20 lbs per acre-day
On Road Truck Travel (VMT): 185.17
Off-Road Equipment:
1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 10 hours per day
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 10 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Paving 2/1/2012 - 2/17/2012 - Paving of interior roads
Acres to be Paved: 50
Off-Road Equipment:
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
2 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day
2 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

Phase: Building Construction 2/20/2012 - 12/31/2012 - Construct residential units and structures
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day
5 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day
5 Generator Sets (400 hp) operating at a 0.74 load factor for 10 hours per day
2 Other Equipment (190 hp) operating at a 0.62 load factor for 10 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

Phase: Architectural Coating 9/1/2012 - 12/31/2012 - Architectural coating - painting
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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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\MBA\Client\24820005 Trails of Manteca\AQ Models\24820005 Trails of Manteca.urb924

Project Name: Trails of Manteca - Operation and Unmitigated Construction

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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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.17	2.26	0.96	0.00	0.00	0.00	2,890.80
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.88	0.06	5.01	0.00	0.01	0.01	8.10
Consumer Products	10.86						
Architectural Coatings	1.89						
TOTALS (tons/year, mitigated)	13.80	2.32	5.97	0.00	0.01	0.01	2,898.90

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Percent of Wood Stoves changed from: 25% to: 0%	
Percent of Gas Fireplaces changed from: 75% to: 0%	
Percent of No Hearth changed from: 0% to: 100%	

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 0% to 25%

Percentage of residences with natural gas fireplaces changed from 0% to 75%

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	19.41	37.04	227.69	0.22	19.27	4.52	22,761.18
Apartments low rise	5.57	10.31	63.40	0.06	5.36	1.26	6,337.26
City park	0.09	0.00	0.01	0.00	0.00	0.00	0.99
TOTALS (tons/year, unmitigated)	25.07	47.35	291.10	0.28	24.63	5.78	29,099.43

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Season: Annual

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
Single family housing	181.00	9.57	dwelling units	1,178.00	11,273.46	120,446.77
Apartments low rise	22.30	6.65	dwelling units	472.00	3,138.80	33,535.25
City park		0.01	acres	75.00	0.75	5.25
					14,413.01	153,987.27

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.7	99.1	0.2
Light Truck < 3750 lbs	12.1	1.7	92.5	5.8

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
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	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	2.7	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	56.4	43.6	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)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
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)						
City park				5.0	2.5	92.5

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Mitigated Emissions (Tons/Year)

File Name: C:\MBA\Client\24820005 Trails of Manteca\AQ Models\24820005 Construction Mitigated.urb924

Project Name: Trails of Manteca - Construction Mitigated

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 (Annual Tons Per Year, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2

2012	4.78	16.71	70.01	0.08	5.61	0.82	6.43	1.23	0.74	1.97	9,300.87
Mass Grading 01/02/2012-01/08/2012	0.02	0.17	0.09	0.00	0.18	0.01	0.19	0.04	0.01	0.05	21.67
Mass Grading Dust	0.00	0.00	0.00	0.00	0.18	0.00	0.18	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.02	0.15	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	18.23
Mass Grading On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
Fine Grading 01/09/2012-01/31/2012	0.13	1.05	0.56	0.00	5.04	0.05	5.09	1.05	0.05	1.10	114.46
Fine Grading Dust	0.00	0.00	0.00	0.00	5.04	0.00	5.04	1.05	0.00	1.05	0.00
Fine Grading Off Road Diesel	0.12	1.05	0.53	0.00	0.00	0.05	0.05	0.00	0.05	0.05	110.54
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	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Asphalt 02/01/2012-02/17/2012	0.11	0.34	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	42.96
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.18	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	14.70
Paving On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.79
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Building 02/20/2012-12/31/2012	2.99	15.12	68.62	0.08	0.39	0.74	1.12	0.14	0.66	0.80	9,055.05
Building Off Road Diesel	1.03	8.47	4.05	0.00	0.00	0.41	0.41	0.00	0.38	0.38	1,068.65
Building Vendor Trips	0.28	3.32	2.92	0.01	0.03	0.13	0.16	0.01	0.12	0.13	743.82
Building Worker Trips	1.69	3.32	61.65	0.07	0.36	0.20	0.56	0.13	0.17	0.30	7,242.58
Coating 09/01/2012-12/31/2012	1.53	0.03	0.57	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.73
Architectural Coating	1.52	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	0.57	0.00	0.00	0.00	0.01	0.00	0.00	0.00	66.73

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/9/2012 - 1/31/2012 - Grading of entire site

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:
PM10: 55% PM25: 55%
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%
The following mitigation measures apply to Phase: Mass Grading 1/2/2012 - 1/8/2012 - Demolition of onsite trees and structures
For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:
PM10: 84% PM25: 84%
For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:
PM10: 55% PM25: 55%
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%
The following mitigation measures apply to Phase: Architectural Coating 9/1/2012 - 12/31/2012 - Architectural coating - painting
For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 92%
For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 92%

Phase Assumptions

Phase: Fine Grading 1/9/2012 - 1/31/2012 - Grading of entire site
Total Acres Disturbed: 278.3
Maximum Daily Acreage Disturbed: 69.58
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 33000 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 10 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 10 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 1/2/2012 - 1/8/2012 - Demolition of onsite trees and structures
Total Acres Disturbed: 94
Maximum Daily Acreage Disturbed: 24
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 185.17
Off-Road Equipment:
1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 10 hours per day
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 10 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Paving 2/1/2012 - 2/17/2012 - Paving of interior roads
Acres to be Paved: 50
Off-Road Equipment:
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
2 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day
2 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

Phase: Building Construction 2/20/2012 - 12/31/2012 - Construct residential units and structures
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day
5 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day
1 Generator Sets (400 hp) operating at a 0.74 load factor for 10 hours per day
2 Other Equipment (190 hp) operating at a 0.62 load factor for 10 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

Phase: Architectural Coating 9/1/2012 - 12/31/2012 - Architectural coating - painting
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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Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Unmitigated Emissions (Tons/Year)

File Name: C:\MBA\Client\24820005 Trails of Manteca\AQ Models\24820005 Operation 2020.urb924

Project Name: Trails of Manteca - Operation 2020

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

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	11.49	17.76	126.92	0.22	18.87	4.17	22,716.36
Apartments low rise	3.31	4.94	35.34	0.06	5.25	1.16	6,324.78
City park	0.06	0.00	0.01	0.00	0.00	0.00	0.99
TOTALS (tons/year, unmitigated)	14.86	22.70	162.27	0.28	24.12	5.33	29,042.13

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

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
Single family housing	181.00	9.57	dwelling units	1,178.00	11,273.46	120,446.77
Apartments low rise	22.30	6.65	dwelling units	472.00	3,138.80	33,535.25

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
City park		0.01	acres	75.00	0.75	5.25
					14,413.01	153,987.27

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	12.0	0.0	97.5	2.5
Light Truck 3751-5750 lbs	21.2	0.0	100.0	0.0
Med Truck 5751-8500 lbs	12.0	0.0	100.0	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	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	2.6	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	41.0	59.0	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)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)						
City park				5.0	2.5	92.5

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Summary of Operational Greenhouse Gases

Project: Trails of Manteca
Prepared by: Michael Brandman Associates
Prepared on: 22-Sep-10
Year of analysis: 2013

	Emissions (tons per year)				
Source	**Carbon Dioxide**	**Nitrous Oxide**	**Methane**	**Other**	**Metric Tons CO2e**
Motor vehicles	29,042	1.14	2.60		26,718
Natural gas	4,761	0.01	0.45		4,330
Hearth	1,242	0.00	8.50		1,289
Indirect electricity	3,677	0.05	0.17		3,352
Water transport	714	0.01	0.03		651
Waste					844
Refrigerants				0.83	1,138
Total	39,436	1.21	11.76	0.83	38,322
Total	35,776	1.10	10.66	0.75	metric tons per year
GWP	1	310	21	varies	
Total	35,776	340	224	1,138	MTCO2E per year
Total	0.0358	0.0003	0.0002	0.0011	MMTCO2E per year

Total - all gases 38,322 MTCO2e per year
0.0383 MMTCO2e per year

Notes:

Emissions converted from tons per year to metric tons of carbon dioxide equivalents (MTCO2e) per year by using the formula: (tons of gas) x (global warming potential) x (0.9072 metric tons)

Emissions converted to million metric tons of carbon dioxide equivalents (MMTCO2E) using the formula: MMTCO2e = (metric tons of gas) / (1,000,000).

Mobile Emissions - Methane
Trails of Manteca
Prepared by Michael Brandman Associates

18-Sep-10

Vehicle Miles Traveled 153,987
Vehicle Trips 14,413

	Pounds/day	Tons/day	Tons/year
Starting Emissions	1.42	0.0007	0.26
Running Emissions	12.83	0.0064	2.34
Total	14.25	0.0071	2.60

Vehicle Percentages

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.6	99.2	0.2
Light Truck < 3,750 lbs	12.1	1.4	95.9	2.7
Light Truck 3,751- 5,750	21.1	0.4	99.6	0.0
Med Truck 5,751- 8,500	11.9	0.9	99.1	0.0
Lite-Heavy 8,501-10,000	2.4	0.0	81.2	18.8
Lite-Heavy 10,001-14,000	0.9	0.0	60.0	40.0
Med-Heavy 14,001-33,000	1.3	0.0	22.2	77.8
Heavy-Heavy 33,001-60,000	2.7	0.0	0.0	100.0
Line Haul > 60,000 lbs	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	3.9	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	88.9	11.1

Running Emission Factors (g/mile)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.3250	0.0250	0.0080
Light Truck < 3,750 lbs	LDT1	0.3310	0.0330	0.0040
Light Truck 3,751- 5,750	LDT2	0.3300	0.0300	0.0060
Med Truck 5,751- 8,500	MDV	0.3910	0.0370	0.0030
Lite-Heavy 8,501-10,000	LHDT1	0.2500	0.0280	0.0070
Lite-Heavy 10,001-14,000	LHDT2	0.2500	0.0330	0.0100
Med-Heavy 14,001-33,000	MHDT	0.3210	0.0720	0.0100
Heavy-Heavy 33,001-60,000	HHDT	0.7950	0.2250	0.0480
Line Haul > 60,000 lbs	LHV	0.7950	0.2250	0.0480
Urban Bus	UB	0.3680	0.0920	0.0280
Motorcycle	MCY	0.2230	0.1620	0.0000
School Bus	SBUS	0.3210	0.1260	0.0130
Motor Home	MH	0.3210	0.0560	0.0050

Running Emissions (pounds per day)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.28	3.57	0.00
Light Truck < 3,750 lbs	0.19	1.30	0.00
Light Truck 3,751- 5,750	0.09	2.14	0.00
Med Truck 5,751- 8,500	0.14	1.48	0.00
Lite-Heavy 8,501-10,000	0.00	0.18	0.01
Lite-Heavy 10,001-14,000	0.00	0.06	0.01
Med-Heavy 14,001-33,000	0.00	0.07	0.03
Heavy-Heavy 33,001-60,000	0.00	0.00	0.44
Line Haul > 60,000 lbs	0.00	0.00	0.02
Urban Bus	0.00	0.00	0.00
Motorcycle	1.79	0.84	0.00
School Bus	0.00	0.00	0.00
Motor Home	0.00	0.17	0.00
Total	2.50	9.81	0.53

Total Trips 14413

Starting Emission Factors (g/start)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.384	0.032	0
Light Truck < 3,750 lbs	LDT1	0.381	0.038	0.000
Light Truck 3,751- 5,750	LDT2	0.377	0.034	0.000
Med Truck 5,751- 8,500	MDV	0.463	0.044	0.000
Lite-Heavy 8,501-10,000	LHDT1	0.615	0.106	0.000
Lite-Heavy 10,001-14,000	LHDT2	0.615	0.123	0.000
Med-Heavy 14,001-33,000	MHDT	0.923	0.277	0.000
Heavy-Heavy 33,001-60,000	HHDT	1.756	0.829	0.000
Line Haul > 60,000 lbs	LHV	1.756	0.829	0.000
Urban Bus	UB	1.127	0.314	0.000
Motorcycle	MCY	0.183	0.155	0.000
School Bus	SBUS	0.923	0.313	0.000
Motor Home	MH	0.923	0.200	0.000

Trip Distribution

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	36.8	6076.5	12.3
Light Truck < 3,750 lbs	LDT1	24.4	1672.5	47.1
Light Truck 3,751- 5,750	LDT2	12.2	3029.0	0.0
Med Truck 5,751- 8,500	MDV	15.4	1699.7	0.0
Lite-Heavy 8,501-10,000	LHDT1	0.0	280.9	65.0
Lite-Heavy 10,001-14,000	LHDT2	0.0	77.8	51.9
Med-Heavy 14,001-33,000	MHDT	0.0	41.6	145.8
Heavy-Heavy 33,001-60,000	HHDT	0.0	0.0	389.2
Line Haul > 60,000 lbs	LHV	0.0	0.0	14.4
Urban Bus	UB	0.0	0.0	0.0
Motorcycle	MCY	341.2	220.9	0.0
School Bus	SBUS	0.0	0.0	14.4
Motor Home	MH	0.0	128.1	16.0
Total		430.0	13227.0	756.0

Starting Emissions (pounds per day)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0310	0.4278	0.0000
Light Truck < 3,750 lbs	LDT1	0.0205	0.1398	0.0000
Light Truck 3,751- 5,750	LDT2	0.0101	0.2266	0.0000
Med Truck 5,751- 8,500	MDV	0.0157	0.1645	0.0000
Lite-Heavy 8,501-10,000	LHDT1	0.0000	0.0655	0.0000
Lite-Heavy 10,001-14,000	LHDT2	0.0000	0.0211	0.0000
Med-Heavy 14,001-33,000	MHDT	0.0000	0.0253	0.0000
Heavy-Heavy 33,001-60,000	HHDT	0.0000	0.0000	0.0000
Line Haul > 60,000 lbs	LHV	0.0000	0.0000	0.0000
Urban Bus	UB	0.0000	0.0000	0.0000
Motorcycle	MCY	0.1374	0.0753	0.0000
School Bus	SBUS	0.0000	0.0000	0.0000
Motor Home	MH	0.0000	0.0564	0.0000
Total		0.2147	1.2023	0.0000

- Source of vehicle percentages: URBEMIS.
- Source of emission factors: EMFAC2007, Statewide average, year 2010, temperature 60F, relative humidity 50%

Mobile Emissions - Nitrous Oxide

Trails of Manteca **Vehicle Miles Traveled** 153,987

Prepared by Michael Brandman Associates

	Pounds/day	Tons/day	Tons/year
Starting Emissions	1.57	0.0008	0.29
Running Emissions	4.70	0.0023	0.86
Total	6.27	0.0031	1.14

Vehicle Percentages

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.6	99.2	0.2
Light Truck < 3,750 lbs	12.1	1.4	95.9	2.7
Light Truck 3,751- 5,750	21.1	0.4	99.6	0.0
Med Truck 5,751- 8,500	11.9	0.9	99.1	0.0
Lite-Heavy 8,501-10,000	2.4	0.0	81.2	18.8
Lite-Heavy 10,001-14,000	0.9	0.0	60.0	40.0
Med-Heavy 14,001-33,000	1.3	0.0	22.2	77.8
Heavy-Heavy 33,001-60,000	2.7	0.0	0.0	100.0
Line Haul > 60,000 lbs	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	3.9	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	88.9	11.1

Running Emission Factors (mg/km)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Automobile	8	20	1
Light duty truck	9	26	1
Heavy duty trucks and buses	20	55	3
Motorcycle	3	3	3

Running Emission Factors (g/mile)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0050	0.0124	0.0006
Light Truck < 3,750 lbs	LDT1	0.0056	0.0162	0.0006
Light Truck 3,751- 5,750	LDT2	0.0056	0.0162	0.0006
Med Truck 5,751- 8,500	MDV	0.0056	0.0162	0.0006
Lite-Heavy 8,501-10,000	LHDT1	0.0124	0.0342	0.0019
Lite-Heavy 10,001-14,000	LHDT2	0.0124	0.0342	0.0019
Med-Heavy 14,001-33,000	MHDT	0.0124	0.0342	0.0019
Heavy-Heavy 33,001-60,000	HHDT	0.0124	0.0342	0.0019
Line Haul > 60,000 lbs	LHV	0.0124	0.0342	0.0019
Urban Bus	UB	0.0124	0.0342	0.0019
Motorcycle	MCY	0.0019	0.0019	0.0019
School Bus	SBUS	0.0124	0.0342	0.0019
Motor Home	MH	0.0124	0.0342	0.0019

Running Emissions (pounds per day)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.00	1.78	0.00
Light Truck < 3,750 lbs	0.00	0.64	0.00
Light Truck 3,751- 5,750	0.00	1.15	0.00
Med Truck 5,751- 8,500	0.00	0.65	0.00
Lite-Heavy 8,501-10,000	0.00	0.23	0.00
Lite-Heavy 10,001-14,000	0.00	0.06	0.00
Med-Heavy 14,001-33,000	0.00	0.03	0.01
Heavy-Heavy 33,001-60,000	0.00	0.00	0.02
Line Haul > 60,000 lbs	0.00	0.00	0.00
Urban Bus	0.00	0.00	0.00
Motorcycle	0.01	0.01	0.00
School Bus	0.00	0.00	0.00
Motor Home	0.00	0.10	0.00
Total	0.03	4.64	0.03

Total Trips 14413

Starting Emission Factors (mg/start)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Automobile	**28**	72	0
Light duty truck	**9**	26	-1
Heavy duty trucks and buses	**70**	194	-2
Motorcycle	**12**	12	0

Starting Emission Factors (g/start)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.028	0.072	0
Light Truck < 3,750 lbs	LDT1	0.009	0.026	-0.001
Light Truck 3,751- 5,750	LDT2	0.009	0.026	-0.001
Med Truck 5,751- 8,500	MDV	0.009	0.026	-0.001
Lite-Heavy 8,501-10,000	LHDT1	0.070	0.194	-0.002
Lite-Heavy 10,001-14,000	LHDT2	0.070	0.194	-0.002
Med-Heavy 14,001-33,000	MHDT	0.070	0.194	-0.002
Heavy-Heavy 33,001-60,000	HHDT	0.070	0.194	-0.002
Line Haul > 60,000 lbs	LHV	0.070	0.194	-0.002
Urban Bus	UB	0.070	0.194	-0.002
Motorcycle	MCY	0.012	0.012	0.000
School Bus	SBUS	0.070	0.194	-0.002
Motor Home	MH	0.070	0.194	-0.002

Trip Distribution

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	36.8	6076.5	12.3
Light Truck < 3,750 lbs	LDT1	24.4	1672.5	47.1
Light Truck 3,751- 5,750	LDT2	12.2	3029.0	0.0
Med Truck 5,751- 8,500	MDV	15.4	1699.7	0.0
Lite-Heavy 8,501-10,000	LHDT1	0.0	280.9	65.0
Lite-Heavy 10,001-14,000	LHDT2	0.0	77.8	51.9
Med-Heavy 14,001-33,000	MHDT	0.0	41.6	145.8
Heavy-Heavy 33,001-60,000	HHDT	0.0	0.0	389.2
Line Haul > 60,000 lbs	LHV	0.0	0.0	14.4
Urban Bus	UB	0.0	0.0	0.0
Motorcycle	MCY	341.2	220.9	0.0
School Bus	SBUS	0.0	0.0	14.4
Motor Home	MH	0.0	128.1	16.0
Total		430.0	13227.0	756.0

Starting Emissions (pounds per day)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0023	0.9625	0.0000
Light Truck < 3,750 lbs	LDT1	0.0005	0.0957	-0.0001
Light Truck 3,751- 5,750	LDT2	0.0002	0.1733	0.0000
Med Truck 5,751- 8,500	MDV	0.0003	0.0972	0.0000
Lite-Heavy 8,501-10,000	LHDT1	0.0000	0.1199	-0.0003
Lite-Heavy 10,001-14,000	LHDT2	0.0000	0.0332	-0.0002
Med-Heavy 14,001-33,000	MHDT	0.0000	0.0178	-0.0006
Heavy-Heavy 33,001-60,000	HHDT	0.0000	0.0000	-0.0017
Line Haul > 60,000 lbs	LHV	0.0000	0.0000	-0.0001
Urban Bus	UB	0.0000	0.0000	0.0000
Motorcycle	MCY	0.0090	0.0058	0.0000
School Bus	SBUS	0.0000	0.0000	-0.0001
Motor Home	MH	0.0000	0.0547	-0.0001
Total		0.0123	1.5600	-0.0032

Sources: Vehicle percentages: URBEMIS2007.
Emission Factors (mg/km and mg/start): 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Table 3.2.3, www.ipcc-nggip.iges.or.jp/EFDB/find_ef_main.php

Electricity - Indirect Emissions

Project: Trails of Manteca
Prepared by: Michael Brandman Associates
Prepared on: 9/18/2010

Land Use	Residential Units	Electricity Use (kWh/unit-year)	Electricity Use (kWh/year)
Residential Units	1650	6953	11472450
Total (kWh/year)			**11472450**
Total (MWh/year)			**11472**

Greenhouse Gas	Emission Factor (pounds per MWh)	Emissions (pounds/year)	Emissions (tons/year)	Global Warming Potential
Carbon dioxide	641	7,353,840	3,677	1
Methane	0.0302	346	0.17	21
Nitrous oxide	0.0081	93	0.05	310
SF6	0.00031	4	0.002	23900

Emission factor source for methane and nitrous oxide: California Climate Action Registry. General Reporting Protocol. Reporting Entity-Wide Greenhouse Gas Emissions. Version 3.1, January 2009. Table C.2
www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

Emission factor for carbon dioxide from page 32 of PGECORP, 10-K, filed on 2/19/2010.
http://www.pgecorp.com/investors/financial_reports/

Average annual residential usage for 2009 was 6953 kWh per residential unit. Source: page 23 from PGECORP, 10-K, filed on 2/19/2010.
http://www.pgecorp.com/investors/financial_reports/

SF6 emissions refer to sulfur hexafluoride emissions, which are released over electricity transmission lines. The emission factor was calculated by dividing California SF6 emissions from transmission lines (ARB 2010) by the total electricity generated in California in 2008 (CEC 2010), 0.96 MMTCO2e divided by 287782 millions of kWh * 2205 pounds/MT * 23900 *1000.

ARB 2010: California Air Resources Board. May 12, 2010. California Greenhouse Gas Inventory for 2000-2008 by Category as Defined in the Scoping Plan.

CEC 2010: California Energy Commission. Energy Consumption Data Management System. Electricity Consumption by County.
http://www.ecdms.energy.ca.gov/elecbycounty.aspx

Water Conveyance, Treatment, Distribution

Project: Trails of Manteca
Prepared by: Michael Brandman Associates
Prepared on: 9/18/2010

	kWh per million gallons	
Electricity Requirements	**Northern California**	**Southern California**
Water Supply, Conveyance	2,117	9,727
Water Treatment	111	111
Water Distribution	1,272	1,272
Wastewater Treatment	1,911	1,911
Total	*5,411*	*13,021*

Project

Water Usage	1127315	gallons per day
Water Usage	411.469975	million gallons per year
Energy Usage	2,226,464	kWh
Energy Usage	2,226	MWh

Greenhouse Gas	Electricity Emission Factor (pounds per MWh)	Emissions (pounds/year)	Emissions (tons/year)
Carbon dioxide	641	1,427,163	714
Methane	0.0302	67.24	0.034
Nitrous oxide	0.0081	18.03	0.009

Source for electricity emission factor:
California Climate Action Registry. General Reporting Protocol. Reporting Entity-Wide Greenhouse Gas Emissions. Version 3.1, January 2009. Table C.2.
www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

Emission factor for carbon dioxide from page 32 of PGECORP, 10-K, filed on 2/19/2010.
http://www.pgecorp.com/investors/financial_reports/

Source for electricity requirements:
Navigant Consulting, Inc. 2006. Refining Estimates of Water-Related Energy Use in California. California Energy Commission, PIER Industrial/Agricultural/Water End Use Energy Efficiency Program. CEC-500-2006-118. www.energy.ca.gov/pier/project_reports/CEC-500-2006-118.html

Source for water usage: The Water Supply Assessment prepared by the City

Natural Gas Combustion

Residential Developments
Prepared by Michael Brandman Associates

Gas	Units	Natural Gas Usage Factor* (SCF/unit/month)	Natural Gas Usage for Project (SCF/month)	Natural Gas Usage for Project (MMBTU/year)	Emission Factor (kg/MMBTU)**	Emissions (kg/year)	Emissions (tons per year)	Emissions (MTCO2e/year)
Carbon Dioxide	1650	4000	6600000	81576	53.06	4328422.56	4761.26	4319
Methane	1650	4000	6600000	81576	0.005	407.88	0.45	9
Nitrous Oxide	1650	4000	6600000	81576	0.0001	8.16	0.01	3
							Total	**4330**

Greenhouse Gas	Global Warming Potentials
Carbon Dioxide	1
Methane	21
Nitrous Oxide	310

* Average annual residential usage for 2009 is 48 Mcf per year, which is found on page 25 from: PGECORP, 10-K, filed on 2/19/2010. http://www.pgecorp.com/investors/financial_reports/

** Emission factors: Table C.8 and Table C.7 from California Climate Action Registry, General Reporting Protocol. Version 3.1, January 2009. www.climateregistry.org/tools/protocols/general-reporting-protocol.html

Conversion factor for stationary combustion calculations from Table III.8.1 in California Climate Action Registry, General Reporting Protocol. Version 3.1, January 2009. www.climateregistry.org/tools/protocols/general-reporting-protocol.html. A thousand cubic feet of natural gas = 1.03 MMBTU (one million British thermal units)

Air Conditioning and Refrigeration Fugitive Emissions

Trails of Manteca
Prepared by Michael Brandman Associates
9/18/2010

Type of Unit	Units	Capacity of Unit (pounds)	Capacity of Unit (kg)	Annual Leak Rate in percent of capacity	Emissions (kg/year)	Emissions (tons/year)	Global Warming Potential	MTCO2e per year
Operation of Project								
Domestic Refrigeration	1650	1	0.5	0.5%	4	0.00	2065	8
Air conditioning	1650	10	4.5	10.0%	748	0.82	1513	1,130
Total						**0.83**		**1,138**

Type of Unit	Units	Capacity of Unit (pounds)	Capacity of Unit (kg)	Installation % of capacity	Emissions (kg/year)	Emissions (tons/year)	Global Warming Potential	MTCO2e per year
Installation during Construction of Project								
Domestic Refrigeration	1650	1	0.5	1.0%	7	0.01	2065	15
Air conditioning	1650	10	4.5	1.0%	75	0.08	1513	113
Total						**0.09**		**128**

Sources:
- U.S. Environmental Protection Agency, Climate Leaders. May 2008. Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment. EPA430-K-03-004. http://www.epa.gov/stateply/documents/resources/mfgrfg.pdf
- California Air Resources Board. Appendix B, California Facilities and Greenhouse Gas Emissions Inventory - High-Global Warming Potential Stationary Source Refrigerant Management Program. www.arb.ca.gov/cc/reftrack/APPENDIX_B_10_22_.pdf
- Global warming potential is an average of the refrigerants used. Source: Bay Area Air Quality Management District Greenhouse Gas Model, version 1.1.9 Beta.

Waste during Operation of Project

Project: Trails of Manteca
Prepared by: Michael Brandman Associates

Waste generation: single family residential	10	pounds/unit/day
Waste generation: multi-family residential	4	pounds/unit/day
Single family units	1178	units
Multi-family units	472	units
Waste generated	4988820	pounds/year
Waste generated	2494	tons per year

EPA Waste Reduction Model (WARM) Inputs

Material	% Generated	Tons Generated
Aluminum Cans	0.3%	7.5
Steel Cans	1.0%	24.9
Copper Wire		0.0
Glass	2.1%	52.4
HDPE		0.0
LDPE		0.0
PET		0.0
Corrugated Cardboard	2.1%	52.4
Magazines/Third-class Mail	1.3%	32.4
Newspaper	2.2%	54.9
Office Paper	1.8%	44.9
Phonebooks	0.1%	2.5
Textbooks		0.0
Dimensional Lumber		0.0
Medium-density Fiberboard		0.0
Food Scraps	26.5%	661.0
Yard Trimmings		0.0
Grass	6.0%	149.7
Leaves	1.5%	37.4
Branches	20.0%	498.9
Mixed Paper (general)	11.2%	279.4
Mixed Paper (primarily residential)		0.0
Mixed Paper (primarily from offices)		0.0
Mixed Metals		0.0
Mixed Plastics	10.0%	249.4
Mixed Recyclables		0.0
Mixed Organics		0.0
Mixed MSW	12.5%	311.8
Carpet	1.4%	34.9
Personal Computers		0.0
Clay Bricks		0.0
Concrete		0.0
Fly Ash		0.0
Tires		0.0
Total	100.0%	2,494

WARM - U.S. Environmental Protection Agency. November 2009. Waste Reduction Model. www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html

Source for percent generated:
California Integrated Waste Management Board, prepared by Cascadia Consulting Group. August 2009. 2008 California Statewide Waste Characterization Study. www.calrecycle.ca.gov/Publications/General/2009023.pdf (Table 15)

Waste generation rate from: Public Services and Utilities section in the EIR.

GHG Emissions Analysis -- Summary Report

Version 10 (10/09)

GHG Emissions Waste Management Analysis for Trails of Manteca Operational Waste
Prepared by: Michael Brandman Associates
Project Period for this Analysis: 01/01/13 to 12/31/13

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

GHG Emissions from Baseline Waste Management ($MTCO_2E$): 844

Commodity	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total $MTCO_2E$
Aluminum Cans	-	7.5	-	NA	0
Steel Cans	-	24.9	-	NA	1
Glass	-	52.4	-	NA	2
Corrugated Cardboard	-	52.4	-	NA	20
Magazines/third-class mail	-	32.4	-	NA	(10)
Newspaper	-	54.9	-	NA	(48)
Office Paper	-	44.9	-	NA	83
Phonebooks	-	2.5	-	NA	(2)
Food Scraps	NA	661.0	-	-	472
Grass	NA	149.7	-	-	25
Leaves	NA	37.4	-	-	(21)
Branches	NA	498.9	-	-	(247)
Mixed Paper, Broad	-	279.4	-	NA	90
Mixed Plastics	-	249.4	-	NA	10
Mixed MSW	NA	311.8	-	NA	469
Carpet	-	34.9	-	NA	1
					0
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GHG Emissions from Alternative Waste Management Scenario ($MTCO_2E$): 844

Commodity	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total $MTCO_2E$	Change (Alt - Base) $MTCO_2E$
Aluminum Cans	0.0	0.0	7.5	0.0	NA	0	0
Steel Cans	0.0	0.0	24.9	0.0	NA	1	0
Glass	0.0	0.0	52.4	0.0	NA	2	0
Corrugated Cardboard	0.0	0.0	52.4	0.0	NA	20	0
Magazines/third-class mail	0.0	0.0	32.4	0.0	NA	(10)	0
Newspaper	0.0	0.0	54.9	0.0	NA	(48)	0
Office Paper	0.0	0.0	44.9	0.0	NA	83	0
Phonebooks	0.0	0.0	2.5	0.0	NA	(2)	0
Food Scraps	0.0	NA	661.0	0.0	0.0	472	0
Grass	0.0	NA	149.7	0.0	0.0	25	0
Leaves	0.0	NA	37.4	0.0	0.0	(21)	0
Branches	0.0	NA	498.9	0.0	0.0	(247)	0
Mixed Paper, Broad	NA	0.0	279.4	0.0	NA	90	0
Mixed Plastics	NA	0.0	249.4	0.0	NA	10	0
Mixed MSW	NA	NA	311.8	0.0	NA	469	0
Carpet	0.0	0.0	34.9	0.0	NA	1	0
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Note: a negative value (i.e., a value in parentheses) indicates an emission reduction; a positive value indicates an emission increase.

Total Change in GHG Emissions: - $MTCO_2E$

This is equivalent to...

Removing	-	Passenger Cars from the Roadway Each Year
Conserving	-	Gallons of Gasoline
Conserving	-	Cylinders of Propane Used for Home Barbeques
Conserving	-	Railway Cars of Coal

0.00000% Annual CO_2 emissions from the U.S. transportation sector

0.00000% Annual CO_2 emissions from the U.S. electricity sector

a) For explanation of methodology, see the EPA report:
Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks (EPA530-R-06-004)
-- available on the Internet at http://epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf (5.6 Mb PDF file).
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.

Construction Waste

Project: Trails of Manteca
Prepared by: Michael Brandman Associates

Waste generated 8002 tons per year

EPA Waste Reduction Model (WARM) Inputs

Material	% Generated	Tons Generated
Aluminum Cans		0.0
Steel Cans		0.0
Copper Wire		0.0
Glass	5.0%	400.1
HDPE		0.0
LDPE		0.0
PET		0.0
Corrugated Cardboard	10.0%	800.2
Magazines/Third-class Mail		0.0
Newspaper		0.0
Office Paper		0.0
Phonebooks		0.0
Textbooks		0.0
Dimensional Lumber	25.0%	2000.5
Medium-density Fiberboard	25.0%	2000.5
Food Scraps		0.0
Yard Trimmings		0.0
Grass		0.0
Leaves		0.0
Branches		0.0
Mixed Paper (general)		0.0
Mixed Paper (primarily residential)		0.0
Mixed Paper (primarily from offices)		0.0
Mixed Metals		0.0
Mixed Plastics		0.0
Mixed Recyclables		0.0
Mixed Organics		0.0
Mixed MSW	25.0%	2000.5
Carpet	5.0%	400.1
Personal Computers		0.0
Clay Bricks	5.0%	400.1
Concrete		0.0
Fly Ash		0.0
Tires		0.0
Total	100.0%	8,002

WARM - U.S. Environmental Protection Agency. November 2009. Waste Reduction Model. www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html

Waste generation rate from: Public services and utilities section of the EIR.

GHG Emissions Analysis -- Summary Report

Version 10 (10/09)

GHG Emissions Waste Management Analysis for Trails of Manteca Construction Waste
Prepared by: Michael Brandman Associates
Project Period for this Analysis: 01/01/13 to 12/31/13

Note: If you wish to save these results, rename this file (e.g., WARM-MN1) and save it. Then the "Analysis Inputs" sheet of the "WARM" file will be blank when you are ready to make another model run.

GHG Emissions from Baseline Waste Management ($MTCO_2E$): 1,382

Commodity	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total $MTCO_2E$
Glass	-	400.1	-	NA	15
Corrugated Cardboard	-	800.2	-	NA	308
Dimensional Lumber	-	2,000.5	-	NA	(992)
Medium Density Fiberboard	-	2,000.5	-	NA	(992)
Mixed MSW	NA	2,000.5	-	NA	3012
Carpet	-	400.1	-	NA	15
Clay Bricks	NA	400.1	NA	NA	15
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GHG Emissions from Alternative Waste Management Scenario ($MTCO_2E$): 1,382

Commodity	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total $MTCO_2E$	Change (Alt - Base) $MTCO_2E$
Glass	0.0	0.0	400.1	0.0	NA	15	0
Corrugated Cardboard	0.0	0.0	800.2	0.0	NA	308	0
Dimensional Lumber	0.0	0.0	2000.5	0.0	NA	(992)	0
Medium Density Fiberboard	0.0	0.0	2000.5	0.0	NA	(992)	0
Mixed MSW	NA	NA	2000.5	0.0	NA	3012	0
Carpet	0.0	0.0	400.1	0.0	NA	15	0
Clay Bricks	0.0	NA	400.1	NA	NA	15	0
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						0	0

Note: a negative value (i.e., a value in parentheses) indicates an emission reduction; a positive value indicates an emission increase.

Total Change in GHG Emissions: - $MTCO_2E$

This is equivalent to...

Removing	-	Passenger Cars from the Roadway Each Year
Conserving	-	Gallons of Gasoline
Conserving	-	Cylinders of Propane Used for Home Barbeques
Conserving	-	Railway Cars of Coal

0.00000% Annual CO_2 emissions from the U.S. transportation sector

0.00000% Annual CO_2 emissions from the U.S. electricity sector

a) For explanation of methodology, see the EPA report:
Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks (EPA530-R-06-004)
-- available on the Internet at http://epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf (5.6 Mb PDF file).
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.

Transportation

Baseline is Currently: OFF

Unmitigated Transportation	Target Year: 2020 Project	2011 Baseline	Project-Baseline
Operational Emissions from URBEMIS (CO2 tons/year)	29,042.13	0.00	
Metric Ton Adjustment (CO2 metric tons/year)	26,354.02	0.00	
Pavley Regulation Adjustment (CO2 metric tons/year):	22,498.68	0.00	
US EPA Adjustment (CO2e metric tons/year):	23,682.82	0.00	
Low Carbon Fuels Rule Adjustment (CO2e metric tons/year)	21,977.66	0.00	
Total (CO2e metric tons/year):			**21,977.66**

Mitigated Transportation	Target Year: 2020 Project	2011 Baseline	Project-Baseline
Operational Vehicles from URBEMIS (CO2 tons/year):	29,042.13	0.00	
Metric Ton Adjustment (CO2 metric tons/year):	26,354.02	0.00	
Pavley Regulation Adjustment (CO2 metric tons/year):	22,498.68	0.00	
US EPA Adjustment (CO2e metric tons/year):	23,682.82	0.00	
Low Carbon Fuels Adjustment (CO2e metric tons/year):	21,977.66	0.00	
Total (CO2e metric tons/year):			**21,977.66**

Bay Area Air Quality Management District
Greenhouse Gas Model, Version 1.1.9

The BGM User's Manual describes in detail each step used to convert URBEMIS's transportation CO2 emissions to total CO2e.
These steps include converting from English to Metric units, adjusting for the Pavley Rule, converting CO2 to CO2e, and adjusting for the Low Carbon Fuels Rule.

Reference

U.S. EPA assumption that GHG emissions from other pollutants - CH4, N20, and hydrofluorcarbons (HFCs) from leaking air conditioners account for 5 percent of emissions from vehicles, after accounting for global warming potentail of each GHG.

Jump to the Following Transportation Related Tabs:
Transportation Detail for Operational Mitigation
Land Use Detail

	Don't Need to Adjust this amt	Unadjusted Amount Affected by Pavley	Adjusted	Adusted	Adusted	Adusted	Adjusted
	Not Affected by Pavley	LDA/ LDT1/ LDT2/ MDV	LDA	LDT1	LDT2	MDV	4 totaled
Pavley Calculations - Project Unmitigated	4,325.18	22,028.83	8,797.85	2,762.25	4,489.33	2,124.06	18,173.49
Pavley Calculations - Baseline Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavley Calculations - Project Mitigated	4,325.18	22,028.83	8,797.85	2,762.25	4,489.33	2,124.06	18,173.49
Pavley Calculations - Baseline Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Pavley Adjustment

											12.00	13.00	14.00	15.00	16.00
Year	% LDA CO2 Emissions	% LDT1 CO2 Emissions	% LDT2 CO2 Emissions	% MDV CO2 Emissions	% LDA/LDT1/LDT2/MDV	% everything else	% CO2 Reduction - LDA	% CO2 Reduction - LDT1	% CO2 Reduction - LDT2	% CO2 Reduction MDV	LDA				
2009	41.59%	12.33%	19.61%	9.71%	83.26%	16.74%	0.00%	0.00%	0.07%	0.08%	0.0000	0.0000	0.0006	0.0007	0.0013
2010	41.72%	12.39%	19.54%	9.61%	83.26%	16.74%	0.35%	0.25%	0.45%	0.48%	0.0020	0.0022	0.0036	0.0044	0.0122
2011	41.83%	12.45%	19.50%	9.50%	83.27%	16.73%	1.75%	1.34%	1.31%	1.29%	0.0102	0.0117	0.0106	0.0117	0.0442
2012	41.89%	12.50%	19.47%	9.40%	83.27%	16.73%	4.07%	3.27%	2.60%	2.44%	0.0237	0.0286	0.0209	0.0221	0.0953
2013	41.94%	12.56%	19.46%	9.32%	83.28%	16.72%	6.31%	5.26%	3.88%	3.61%	0.0366	0.0460	0.0313	0.0328	0.1466
2014	41.98%	12.62%	19.46%	9.27%	83.33%	16.67%	8.48%	7.26%	5.17%	4.83%	0.0492	0.0634	0.0416	0.0438	0.1980
2015	42.00%	12.67%	19.47%	9.24%	83.38%	16.62%	10.74%	9.38%	6.54%	6.17%	0.0623	0.0819	0.0527	0.0560	0.2529
2016	42.05%	12.76%	19.50%	9.23%	83.54%	16.46%	12.96%	11.56%	7.94%	7.54%	0.0751	0.1008	0.0639	0.0684	0.3082
2017	42.02%	12.81%	19.51%	9.21%	83.55%	16.45%	15.03%	13.58%	9.27%	8.88%	0.0871	0.1184	0.0746	0.0806	0.3608
2018	41.98%	12.84%	19.52%	9.21%	83.55%	16.45%	16.94%	15.43%	10.54%	10.16%	0.0983	0.1345	0.0848	0.0923	0.4099
2019	41.95%	12.87%	19.53%	9.21%	83.57%	16.43%	18.72%	17.13%	11.74%	11.40%	0.1087	0.1492	0.0945	0.1035	0.4559
2020	41.92%	12.89%	19.55%	9.22%	83.59%	16.41%	20.37%	18.69%	12.89%	12.59%	0.1183	0.1628	0.1037	0.1143	0.4990
2025	41.92%	12.96%	19.67%	9.28%	83.82%	16.18%	26.87%	24.86%	17.60%	17.42%	0.1560	0.2164	0.1414	0.1581	0.6719
2030	42.15%	13.03%	19.76%	9.32%	84.26%	15.74%	30.60%	28.71%	20.63%	20.47%	0.1770	0.2497	0.1655	0.1856	0.7779
2035	42.21%	13.11%	19.80%	9.35%	84.47%	15.53%	32.38%	31.17%	22.43%	22.29%	0.1871	0.2708	0.1799	0.2021	0.8400
2040	42.24%	13.14%	19.90%	9.44%	84.72%	15.28%	33.27%	32.61%	23.60%	23.53%	0.1922	0.2832	0.1890	0.2131	0.8775

Low Carbon Fuels Standards

Year	% Reduction Gasoline and Diesel Fuel	% Reduction Tank to Wheels
2010	0.00	0.00
2011	0.25	0.18
2012	0.50	0.36
2013	1.00	0.72
2014	1.50	1.08
2015	2.50	1.80
2016	3.50	2.52
2017	5.00	3.60
2018	6.50	4.68
2019	8.00	5.76
2020	10.00	7.20
2021	10.00	7.20
2022	10.00	7.20
2023	10.00	7.20
2024	10.00	7.20
2025	10.00	7.20
2026	10.00	7.20
2027	10.00	7.20
2028	10.00	7.20
2029	10.00	7.20
2030	10.00	7.20
2031	10.00	7.20
2032	10.00	7.20
2033	10.00	7.20
2034	10.00	7.20
2035	10.00	7.20
2036	10.00	7.20
2037	10.00	7.20
2038	10.00	7.20
2039	10.00	7.20
2040	10.00	7.20

Source:
Final Regulation Order
Subchapter 10. Climate Change
Article 4. Regulations to Achieve Greenhouse Gas Reductions
Subarticle 7. Low Carbon Fuel Standard
Section 95482. Average Carbon Intensity Requirements for Gasoline and Diesel

Hearth Emissions
Trails of Manteca
Prepared by Michael Brandman Associates
21-Sep-10

URBEMIS Assumptions	**Wood Stove**	**Fireplace**	**Natural Gas**
Wood burned (cords/yr/stove)	1.48	0.28	
Pounds in a cord of wood	2458	2458	
Usage (days/year)	82	82	
Usage - SFR (BTU/year)			2250000
Usage - SFR (MMBTU/year)			2.25

Project Assumptions	**Wood Stove**	**Fireplace**	**Natural Gas**
Number installed (unmitigated)	300	300	1050
Tons of fuel burned (tons/year, MMBTU/yr)	546	103	2363

Emission Factors	**Wood Stove (lbs/ton)**	**Fireplace (lbs/ton)**	**Natural gas (lb/1000000 scf)**	**Natural Gas (lbs/MMBTU)**
Carbon monoxide	107	253	40	0.04
Sulfur dioxide	0.4	0.4	0.6	0.00
Nitrogen oxides (NOx)	2	2.6	94	0.09
Volatile organic compounds (VOC)	15	18.9	5.5	0.01
Particulate matter (PM2.5)	12	22.2	7.52	0.01
Particulate matter (PM10)	12	22.2	7.6	0.01
Carbon dioxide	3400	3400	120000	117.65
Methane	28.4	14.41333	2.3	0.00

Emissions (tons/year)	**Wood Stove**	**Fireplace**	**Natural Gas**	**Total**
Carbon monoxide	29.2	13.1	0.05	42.3
Sulfur dioxide	0.1	0.0	0.00	0.1
Nitrogen oxides (NOx)	0.5	0.1	0.11	0.8
Volatile organic compounds (VOC)	4.1	1.0	0.01	5.1
Particulate matter (PM2.5)	3.3	1.1	0.01	4.4
Particulate matter (PM10)	3.3	1.1	0.01	4.4
Carbon dioxide	927.6	175.5	138.97	1242.1
Methane	7.7	0.7	0.00	8.5

Notes: lbs/ton = pounds per ton of fuel burned

Assumptions from URBEMIS2007

Emission factors for CO2 for wood stove and fireplace from URBEMIS2007

Emission factors for certified wood stove and fireplace (except for CO2) from: EPA. October 2009. EPA's Wood Stove and Fireplace Emission Calculator. www.epa.gov/burnwise/xls/EmissionCalculator.xls

Natural gas emission factor for CO2: US EPA AP-42. Section 1.4, Natural Gas Combustion. www.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf

Hearth Emissions - Mitigated Option 1
Trails of Manteca
Prepared by Michael Brandman Associates
21-Sep-10

URBEMIS Assumptions	Wood Stove	Fireplace	Natural Gas
Wood burned (cords/yr/stove)	1.48	0.28	
Pounds in a cord of wood	2458	2458	
Usage (days/year)	82	82	
Usage - SFR (BTU/year)			2250000
Usage - SFR (MMBTU/year)			2.25

Project Assumptions	Wood Stove	Fireplace	Natural Gas
Number installed (unmitigated)	100	500	1050
Tons of fuel burned (tons/year, MMBTU/yr)	182	172	2363

Emission Factors	Wood Stove (lbs/ton)	Fireplace (lbs/ton)	Natural gas (lb/1000000 scf)	Natural Gas (lbs/MMBTU)
Carbon monoxide	107	253	40	0.04
Sulfur dioxide	0.4	0.4	0.6	0.00
Nitrogen oxides (NOx)	2	2.6	94	0.09
Volatile organic compounds (VOC)	15	18.9	5.5	0.01
Particulate matter (PM2.5)	12	22.2	7.52	0.01
Particulate matter (PM10)	12	22.2	7.6	0.01
Carbon dioxide	3400	3400	120000	117.65
Methane	28.4	14.41333	2.3	0.00

Emissions (tons/year)	Wood Stove	Fireplace	Natural Gas	Total
Carbon monoxide	9.7	21.8	0.05	31.5
Sulfur dioxide	0.0	0.0	0.00	0.1
Nitrogen oxides (NOx)	0.2	0.2	0.11	0.5
Volatile organic compounds (VOC)	1.4	1.6	0.01	3.0
Particulate matter (PM2.5)	1.1	1.9	0.01	3.0
Particulate matter (PM10)	1.1	1.9	0.01	3.0
Carbon dioxide	309.2	292.5	138.97	740.7
Methane	2.6	1.2	0.00	3.8

Notes: lbs/ton = pounds per ton of fuel burned

Assumptions from URBEMIS2007

Emission factors for CO2 for wood stove and fireplace from URBEMIS2007

Emission factors for certified wood stove and fireplace (except for CO2) from: EPA. October 2009. EPA's Wood Stove and Fireplace Emission Calculator. www.epa.gov/burnwise/xls/EmissionCalculator.xls

Natural gas emission factor for CO2: US EPA AP-42. Section 1.4, Natural Gas Combustion. www.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf

Hearth Emissions - Mitigated Option 2
Trails of Manteca
Prepared by Michael Brandman Associates
21-Sep-10

URBEMIS Assumptions	Wood Stove	Fireplace	Natural Gas
Wood burned (cords/yr/stove)	1.48	0.28	
Pounds in a cord of wood	2458	2458	
Usage (days/year)	82	82	
Usage - SFR (BTU/year)			2250000
Usage - SFR (MMBTU/year)			2.25

Project Assumptions	Wood Stove	Fireplace	Natural Gas
Number installed (unmitigated)		600	1050
Tons of fuel burned (tons/year, MMBTU/yr)	0	206	2363

Emission Factors	Wood Stove (lbs/ton)	Fireplace (lbs/ton)	Natural gas (lb/1000000 scf)	Natural Gas (lbs/MMBTU)
Carbon monoxide	107	253	40	0.04
Sulfur dioxide	0.4	0.4	0.6	0.00
Nitrogen oxides (NOx)	2	2.6	94	0.09
Volatile organic compounds (VOC)	15	18.9	5.5	0.01
Particulate matter (PM2.5)	12	22.2	7.52	0.01
Particulate matter (PM10)	12	22.2	7.6	0.01
Carbon dioxide	3400	3400	120000	117.65
Methane	28.4	14.41333	2.3	0.00

Emissions (tons/year)	Wood Stove	Fireplace	Natural Gas	Total
Carbon monoxide	0.0	26.1	0.05	26.2
Sulfur dioxide	0.0	0.0	0.00	0.0
Nitrogen oxides (NOx)	0.0	0.3	0.11	0.4
Volatile organic compounds (VOC)	0.0	2.0	0.01	2.0
Particulate matter (PM2.5)	0.0	2.3	0.01	2.3
Particulate matter (PM10)	0.0	2.3	0.01	2.3
Carbon dioxide	0.0	351.0	138.97	490.0
Methane	0.0	1.5	0.00	1.5

Notes: lbs/ton = pounds per ton of fuel burned

Assumptions from URBEMIS2007

Emission factors for CO2 for wood stove and fireplace from URBEMIS2007

Emission factors for certified wood stove and fireplace (except for CO2) from: EPA. October 2009. EPA's Wood Stove and Fireplace Emission Calculator. www.epa.gov/burnwise/xls/EmissionCalculator.xls

Natural gas emission factor for CO2: US EPA AP-42. Section 1.4, Natural Gas Combustion. www.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf

Hearth Emissions - Mitigated Option 3
Trails of Manteca
Prepared by Michael Brandman Associates
21-Sep-10

URBEMIS Assumptions	Wood Stove	Fireplace	Natural Gas
Wood burned (cords/yr/stove)	1.48	0.28	
Pounds in a cord of wood	2458	2458	
Usage (days/year)	82	82	
Usage - SFR (BTU/year)			2250000
Usage - SFR (MMBTU/year)			2.25

Project Assumptions	Wood Stove	Fireplace	Natural Gas
Number installed (unmitigated)	280	0	1370
Tons of fuel burned (tons/year, MMBTU/yr)	509	0	3083

Emission Factors	Wood Stove (lbs/ton)	Fireplace (lbs/ton)	Natural gas (lb/1000000 scf)	Natural Gas (lbs/MMBTU)
Carbon monoxide	107	253	40	0.04
Sulfur dioxide	0.4	0.4	0.6	0.00
Nitrogen oxides (NOx)	2	2.6	94	0.09
Volatile organic compounds (VOC)	15	18.9	5.5	0.01
Particulate matter (PM2.5)	12	22.2	7.52	0.01
Particulate matter (PM10)	12	22.2	7.6	0.01
Carbon dioxide	3400	3400	120000	117.65
Methane	28.4	14.41333	2.3	0.00

Emissions (tons/year)	Wood Stove	Fireplace	Natural Gas	Total
Carbon monoxide	27.2	0.0	0.06	27.3
Sulfur dioxide	0.1	0.0	0.00	0.1
Nitrogen oxides (NOx)	0.5	0.0	0.14	0.7
Volatile organic compounds (VOC)	3.8	0.0	0.01	3.8
Particulate matter (PM2.5)	3.1	0.0	0.01	3.1
Particulate matter (PM10)	3.1	0.0	0.01	3.1
Carbon dioxide	865.8	0.0	181.32	1047.1
Methane	7.2	0.0	0.00	7.2

Notes: lbs/ton = pounds per ton of fuel burned

Assumptions from URBEMIS2007

Emission factors for CO2 for wood stove and fireplace from URBEMIS2007

Emission factors for certified wood stove and fireplace (except for CO2) from: EPA. October 2009. EPA's Wood Stove and Fireplace Emission Calculator. www.epa.gov/burnwise/xls/EmissionCalculator.xls

Natural gas emission factor for CO2: US EPA AP-42. Section 1.4, Natural Gas Combustion. www.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf

Hearth Emissions - Mitigated Option 4
Trails of Manteca
Prepared by Michael Brandman Associates
21-Sep-10

URBEMIS Assumptions	**Wood Stove**	**Fireplace**	**Natural Gas**
Wood burned (cords/yr/stove)	1.48	0.28	
Pounds in a cord of wood	2458	2458	
Usage (days/year)	82	82	
Usage - SFR (BTU/year)			2250000
Usage - SFR (MMBTU/year)			2.25

Project Assumptions	**Wood Stove**	**Fireplace**	**Natural Gas**
Number installed (unmitigated)	210	210	1230
Tons of fuel burned (tons/year, MMBTU/yr)	382	72	2768

Emission Factors	**Wood Stove (lbs/ton)**	**Fireplace (lbs/ton)**	**Natural gas (lb/1000000 scf)**	**Natural Gas (lbs/MMBTU)**
Carbon monoxide	107	253	40	0.04
Sulfur dioxide	0.4	0.4	0.6	0.00
Nitrogen oxides (NOx)	2	2.6	94	0.09
Volatile organic compounds (VOC)	15	18.9	5.5	0.01
Particulate matter (PM2.5)	12	22.2	7.52	0.01
Particulate matter (PM10)	12	22.2	7.6	0.01
Carbon dioxide	3400	3400	120000	117.65
Methane	28.4	14.41333	2.3	0.00

Emissions (tons/year)	**Wood Stove**	**Fireplace**	**Natural Gas**	**Total**
Carbon monoxide	20.4	9.1	0.05	29.6
Sulfur dioxide	0.1	0.0	0.00	0.1
Nitrogen oxides (NOx)	0.4	0.1	0.13	0.6
Volatile organic compounds (VOC)	2.9	0.7	0.01	3.6
Particulate matter (PM2.5)	2.3	0.8	0.01	3.1
Particulate matter (PM10)	2.3	0.8	0.01	3.1
Carbon dioxide	649.4	122.9	162.79	935.0
Methane	5.4	0.5	0.00	5.9

Notes: lbs/ton = pounds per ton of fuel burned

Assumptions from URBEMIS2007

Emission factors for CO2 for wood stove and fireplace from URBEMIS2007

Emission factors for certified wood stove and fireplace (except for CO2) from: EPA. October 2009. EPA's Wood Stove and Fireplace Emission Calculator. www.epa.gov/burnwise/xls/EmissionCalculator.xls

Natural gas emission factor for CO2: US EPA AP-42. Section 1.4, Natural Gas Combustion. www.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: 1. SR 120 WB Ramps / Yosemite Ave
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 100. CM ALT= 15. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 3.1 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB External	5	0	5	600	AG	20	4.0	.0	10.0
B. NB Approach	5	600	5	751	AG	20	7.4	.0	10.0
C. NB Depart	5	751	5	902	AG	210	7.4	.0	10.0
D. NB External	5	902	5	1502	AG	210	4.0	.0	10.0
E. NB Left	5	600	2	751	AG	0	7.4	.0	10.0
F. SB Left	0	902	2	751	AG	320	7.4	.0	10.0
G. SB External	0	1502	0	902	AG	330	4.0	.0	10.0
H. SB Approach	0	902	0	751	AG	10	7.4	.0	10.0
I. SB Depart	0	751	0	600	AG	20	7.4	.0	10.0
J. SB External	0	600	0	0	AG	20	4.0	.0	10.0
K. EB External	-750	750	-150	750	AG	200	4.0	.0	10.0
L. EB Approach	-150	750	2	750	AG	10	7.4	.0	10.0
M. EB Depart	2	750	155	750	AG	320	7.4	.0	10.0
N. EB External	155	750	755	750	AG	320	4.0	.0	10.0
O. WB External	755	752	155	752	AG	0	4.0	.0	10.0
P. WB Approach	155	752	2	752	AG	0	7.4	.0	10.0
Q. WB Depart	2	752	-150	752	AG	0	7.4	.0	10.0
R. WB External	-150	752	-750	752	AG	0	4.0	.0	10.0
S. EB Left	-150	750	2	751	AG	190	7.4	.0	10.0
T. WB Left	155	752	2	751	AG	0	7.4	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Receptor	-5	746	2.0
2. Receptor	10	746	2.0
3. Receptor	10	756	2.0
4. Receptor	-5	756	2.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Receptor	5.	.4	.0	.0	.0	.0	.0	.2	.0	.0
2. Receptor	355.	.5	.0	.0	.2	.0	.0	.2	.0	.0
3. Receptor	355.	.5	.0	.0	.2	.0	.0	.2	.0	.0
4. Receptor	94.	.4	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Receptor	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: 2. SR 120 EB Ramps / Yosemite Avenue
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	15. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	3.1 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB External	4	0	4	600	AG	560	4.0	.0	10.0
B. NB Approach	4	600	4	751	AG	540	7.4	.0	10.0
C. NB Depart	4	751	4	902	AG	560	7.4	.0	10.0
D. NB External	4	902	4	1502	AG	560	4.0	.0	10.0
E. NB Left	4	600	2	751	AG	20	7.4	.0	10.0
F. SB Left	0	902	2	751	AG	0	7.4	.0	10.0
G. SB External	0	1502	0	902	AG	270	4.0	.0	10.0
H. SB Approach	0	902	0	751	AG	270	7.4	.0	10.0
I. SB Depart	0	751	0	600	AG	500	7.4	.0	10.0
J. SB External	0	600	0	0	AG	500	4.0	.0	10.0
K. EB External	-750	750	-150	750	AG	0	4.0	.0	10.0
L. EB Approach	-150	750	2	750	AG	0	7.4	.0	10.0
M. EB Depart	2	750	154	750	AG	0	7.4	.0	10.0
N. EB External	154	750	754	750	AG	0	4.0	.0	10.0
O. WB External	754	752	154	752	AG	460	4.0	.0	10.0
P. WB Approach	154	752	2	752	AG	20	7.4	.0	10.0
Q. WB Depart	2	752	-150	752	AG	230	7.4	.0	10.0
R. WB External	-150	752	-750	752	AG	230	4.0	.0	10.0
S. EB Left	-150	750	2	751	AG	0	7.4	.0	10.0
T. WB Left	154	752	2	751	AG	440	7.4	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Receptor	-5	746	2.0
2. Receptor	9	746	2.0
3. Receptor	9	756	2.0
4. Receptor	-5	756	2.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Receptor	176.	.9	.0	.2	.0	.0	.0	.0	.0	.0
2. Receptor	356.	.9	.0	.0	.5	.0	.0	.0	.0	.1
3. Receptor	184.	1.0	.0	.5	.0	.0	.0	.0	.0	.0
4. Receptor	176.	.9	.0	.2	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Receptor	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
3. Receptor	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
4. Receptor	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

              JOB: 6.  Daniels Street / Airport Way
              RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S            Z0= 100. CM           ALT=    15. (M)
       BRG= WORST CASE           VD=   .0 CM/S
      CLAS=     7 (G)            VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP=  3.1 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NB External  *    19     0    19   600 *  AG   1710   4.0     .0  22.1
B. NB Approach  *    19   600    19   757 *  AG    950   7.4     .0  22.1
C. NB Depart    *    19   757    19   914 *  AG    970   7.4     .0  22.1
D. NB External  *    19   914    19  1514 *  AG    970   4.0     .0  22.1
E. NB Left      *    19   600    10   757 *  AG    760   7.4     .0  22.1
F. SB Left      *     0   914    10   757 *  AG    120   7.4     .0  22.1
G. SB External  *     0  1514     0   914 *  AG   1130   4.0     .0  22.1
H. SB Approach  *     0   914     0   757 *  AG   1010   7.4     .0  22.1
I. SB Depart    *     0   757     0   600 *  AG   2350   7.4     .0  22.1
J. SB External  *     0   600     0     0 *  AG   2350   4.0     .0  22.1
K. EB External  *  -750   750  -150   750 *  AG   1010   4.0     .0  16.7
L. EB Approach  *  -150   750    10   750 *  AG    910   7.4     .0  16.7
M. EB Depart    *    10   750   169   750 *  AG    450   7.4     .0  16.7
N. EB External  *   169   750   769   750 *  AG    450   4.0     .0  16.7
O. WB External  *   769   764   169   764 *  AG    840   4.0     .0  16.7
P. WB Approach  *   169   764    10   764 *  AG    260   7.4     .0  16.7
Q. WB Depart    *    10   764  -150   764 *  AG    920   7.4     .0  16.7
R. WB External  *  -150   764  -750   764 *  AG    920   4.0     .0  16.7
S. EB Left      *  -150   750    10   757 *  AG    100   7.4     .0  16.7
T. WB Left      *   169   764    10   757 *  AG    580   7.4     .0  16.7


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *    -13    740   2.0
2. Receptor *     32    740   2.0
3. Receptor *     32    774   2.0
4. Receptor *    -13    774   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
  RECEPTOR  * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
------------*-------*-------*---------------------------------------
1. Receptor *   79. *   1.5 *   .0   .1   .0   .0   .1   .0   .0   .0
2. Receptor *  276. *   1.5 *   .0   .2   .0   .0   .1   .0   .0   .0
3. Receptor *  191. *   1.4 *   .0   .4   .0   .0   .2   .0   .0   .0
4. Receptor *  172. *   1.9 *   .2   .0   .0   .0   .0   .0   .0   .0


            *                        CONC/LINK
            *                          (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-------------------------------------------------------------
1. Receptor *   .5   .0   .0   .2   .2   .0   .0   .0   .0   .0   .0   .2
2. Receptor *   .3   .0   .0   .5   .0   .0   .0   .0   .1   .1   .0   .0
3. Receptor *   .3   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0   .1
4. Receptor *  1.0   .0   .0   .1   .0   .0   .0   .0   .2   .0   .0   .0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: 7. SR 120 WB Ramps / Airport Way
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	15. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	3.1 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB External	7	0	7	600	AG	1250	4.0	.0	10.0
B. NB Approach	7	600	7	753	AG	1040	7.4	.0	10.0
C. NB Depart	7	753	7	905	AG	1710	7.4	.0	10.0
D. NB External	7	905	7	1505	AG	1710	4.0	.0	10.0
E. NB Left	7	600	3	753	AG	210	7.4	.0	10.0
F. SB Left	0	905	3	753	AG	0	7.4	.0	10.0
G. SB External	0	1505	0	905	AG	2350	4.0	.0	10.0
H. SB Approach	0	905	0	753	AG	2350	7.4	.0	10.0
I. SB Depart	0	753	0	600	AG	2220	7.4	.0	10.0
J. SB External	0	600	0	0	AG	2220	4.0	.0	10.0
K. EB External	-750	750	-150	750	AG	0	4.0	.0	10.0
L. EB Approach	-150	750	3	750	AG	0	7.4	.0	10.0
M. EB Depart	3	750	157	750	AG	0	7.4	.0	10.0
N. EB External	157	750	757	750	AG	0	4.0	.0	10.0
O. WB External	757	755	157	755	AG	1050	4.0	.0	10.0
P. WB Approach	157	755	3	755	AG	670	7.4	.0	10.0
Q. WB Depart	3	755	-150	755	AG	720	7.4	.0	10.0
R. WB External	-150	755	-750	755	AG	720	4.0	.0	10.0
S. EB Left	-150	750	3	753	AG	0	7.4	.0	10.0
T. WB Left	157	755	3	753	AG	380	7.4	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Receptor	-6	744	2.0
2. Receptor	13	744	2.0
3. Receptor	13	761	2.0
4. Receptor	-6	761	2.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Receptor	7.	2.3	.0	.0	.5	.0	.0	.0	.0	1.4
2. Receptor	353.	2.1	.0	.0	1.1	.0	.0	.0	.0	.6
3. Receptor	188.	1.9	.0	.7	.0	.0	.1	.0	.0	.0
4. Receptor	173.	2.2	.0	.3	.0	.0	.1	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Receptor	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
2. Receptor	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
3. Receptor	.6	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
4. Receptor	1.4	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0

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         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

              JOB: 8.  SR 120 EB Ramps / Airport Way
              RUN: Hour 1            (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
       U=   1.0 M/S            Z0= 100. CM           ALT=    15. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  3.1 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB External	7	0	7	600	AG	920	4.0	.0	10.0
B. NB Approach	7	600	7	753	AG	920	7.4	.0	10.0
C. NB Depart	7	753	7	906	AG	1250	7.4	.0	10.0
D. NB External	7	906	7	1506	AG	1250	4.0	.0	10.0
E. NB Left	7	600	3	753	AG	0	7.4	.0	10.0
F. SB Left	0	906	3	753	AG	1000	7.4	.0	10.0
G. SB External	0	1506	0	906	AG	2220	4.0	.0	10.0
H. SB Approach	0	906	0	753	AG	1220	7.4	.0	10.0
I. SB Depart	0	753	0	600	AG	1700	7.4	.0	10.0
J. SB External	0	600	0	0	AG	1700	4.0	.0	10.0
K. EB External	-750	750	-150	750	AG	1090	4.0	.0	10.0
L. EB Approach	-150	750	3	750	AG	480	7.4	.0	10.0
M. EB Depart	3	750	157	750	AG	1280	7.4	.0	10.0
N. EB External	157	750	757	750	AG	1280	4.0	.0	10.0
O. WB External	757	756	157	756	AG	0	4.0	.0	10.0
P. WB Approach	157	756	3	756	AG	0	7.4	.0	10.0
Q. WB Depart	3	756	-150	756	AG	0	7.4	.0	10.0
R. WB External	-150	756	-750	756	AG	0	4.0	.0	10.0
S. EB Left	-150	750	3	753	AG	610	7.4	.0	10.0
T. WB Left	157	756	3	753	AG	0	7.4	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Receptor	-6	744	2.0
2. Receptor	13	744	2.0
3. Receptor	13	763	2.0
4. Receptor	-6	763	2.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Receptor	7.	2.2	.0	.0	.4	.0	.0	.5	.0	.8
2. Receptor	353.	2.1	.0	.0	.9	.0	.0	.4	.0	.4
3. Receptor	352.	1.8	.0	.0	.9	.0	.0	.4	.0	.4
4. Receptor	7.	1.9	.0	.0	.4	.0	.0	.5	.0	.9

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Receptor	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
2. Receptor	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0
3. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: 9.  Atherton Drive / Airport Way
             RUN: Hour 1           (WORST CASE ANGLE)
      POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
       U=   1.0 M/S            Z0= 100. CM           ALT=    15. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  3.1 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB External	13	0	13	600	AG	420	4.0	.0	16.3
B. NB Approach	13	600	13	756	AG	410	7.4	.0	16.3
C. NB Depart	13	756	13	912	AG	920	7.4	.0	16.3
D. NB External	13	912	13	1512	AG	920	4.0	.0	16.3
E. NB Left	13	600	7	756	AG	10	7.4	.0	16.3
F. SB Left	0	912	7	756	AG	340	7.4	.0	16.3
G. SB External	0	1512	0	912	AG	1700	4.0	.0	16.3
H. SB Approach	0	912	0	756	AG	1360	7.4	.0	16.3
I. SB Depart	0	756	0	600	AG	1170	7.4	.0	16.3
J. SB External	0	600	0	0	AG	1170	4.0	.0	16.3
K. EB External	-750	750	-150	750	AG	300	4.0	.0	14.7
L. EB Approach	-150	750	7	750	AG	30	7.4	.0	14.7
M. EB Depart	7	750	163	750	AG	380	7.4	.0	14.7
N. EB External	163	750	763	750	AG	380	4.0	.0	14.7
O. WB External	763	762	163	762	AG	450	4.0	.0	14.7
P. WB Approach	163	762	7	762	AG	370	7.4	.0	14.7
Q. WB Depart	7	762	-150	762	AG	400	7.4	.0	14.7
R. WB External	-150	762	-750	762	AG	400	4.0	.0	14.7
S. EB Left	-150	750	7	756	AG	270	7.4	.0	14.7
T. WB Left	163	762	7	756	AG	80	7.4	.0	14.7

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Receptor	-10	741	2.0
2. Receptor	23	741	2.0
3. Receptor	23	771	2.0
4. Receptor	-10	771	2.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Receptor	7.	1.3	.0	.0	.1	.0	.0	.1	.0	.7
2. Receptor	351.	1.2	.0	.0	.5	.0	.0	.1	.0	.3
3. Receptor	349.	1.0	.0	.0	.5	.0	.0	.1	.0	.3
4. Receptor	8.	1.2	.0	.0	.1	.1	.0	.1	.0	.8

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Receptor	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Diesel Fuel Consumption Calculations

Project: Trails of Manteca
Prepared by: Michael Brandman Associates
Prepared on: 9/22/10

Formula:

$$LPMH = (K \times GHP \times LF) \div KPL$$

Constants:

Desc	Symbol	Quantity	Units			
fuel consumption	K =	0.17	kg/brake hp-hour	1 Liter =	0.264172	gallons
weight	KPL =	0.84	kg/liter			

Phase / Type	GHP	LF	LPMH	GPH	Quantity	hrs/day	Total Days	Total Fuel (gals)
Grading								
Excavator	168	0.57	19.38	73.36	1	10	16	12,052
Grader	174	0.61	21.48	81.31	1	10	16	13,359
Rubber tired dozer	357	0.59	42.63	161.36	1	10	16	26,510
Scraper	313	0.72	45.61	172.65	3	10	16	85,090
Tractor	108	0.55	12.02	45.51	3	10	16	22,428
Water truck	189	0.50	19.13	72.40	1	10	16	11,894
Demolition								
Crushing/processing	142	0.78	22.42	84.85	1	10	5	4,243
Excavator	168	0.57	19.38	73.36	1	10	5	3,668
Off highway truck	479	0.57	55.26	209.17	1	10	5	10,458
Tractor/loader	108	0.55	12.02	45.51	2	10	5	4,551
Water truck	189	0.50	19.13	72.40	1	10	5	3,620
Paving								
Paver	100	0.62	12.55	47.50	1	10	12	5,768
Paving equipment	104	0.53	11.16	42.23	2	10	12	10,255
Roller	95	0.56	10.77	40.76	2	10	12	9,898
Building								
Crane	399	0.43	34.72	131.44	1	10	226	296,677
Forklift	145	0.30	8.80	33.33	5	10	226	376,098
Generator set	400	0.74	59.90	226.76	5	10	226	2,559,196
Other	190	0.62	23.84	90.25	2	10	226	407,396
Tractor/loader	108	0.55	12.02	45.51	3	10	226	308,141
Welder	45	0.45	4.10	15.51	3	10	226	105,048
						Diesel Fuel Consumption		***4,276,348***

The fuel consumption rate for a piece of equipment depends on the engine size, load factor, the condition of the equipment, operator's habit, environmental conditions, and the basic design of equipment.

To determine the hourly fuel cost, the total fuel cost is divided by the productive time of the equipment. If fuel consumption records are not available, the following formula can be used to estimate liters of fuel used per machine hour,

$$LMPH = \frac{K \times GHP \times LF}{KPL}$$

where:

- LMPH is the liters used per machine hour,
- K is the kg of fuel used per brake hp/hour,
- GHP is the gross engine horsepower at governed engine rpm,
- LF is the load factor in percent, and
- KPL is the weight of fuel in kg/liter.

Typical values are given in Table 3.3. The load factor is the ratio of the average horsepower used to gross horsepower available at the flywheel.

TABLE 3.3. Weights, fuel consumption rates, and load factors for diesel and gasoline engines.

Engine	Weight (KPL) kg/liter	Fuel Consumption (K) kg/brake hp-hour	Load Factor (LF)		
			Low	Med	High
Gasoline	0.72	0.21	0.38	0.54	0.7
Diesel	0.84	0.17	0.38	0.54	0.7

Source:

Cost Control in Forest Harvesting and Road Construction. Food and Agriculture Organization of the United Nations. Rome, 1992

Appendix D:
Biological Resources Supporting Data

D.1 - Jurisdictional Delineation

Draft
Delineation of Jurisdictional Waters and Wetlands
477-Acre Trails of Manteca Project
City of Manteca
San Joaquin County, California

Lathrop, California, USGS 7.5-minute Topographic Quadrangle Map
Township 2 South, Range 7 East, Unsectioned

Prepared for:

Weatherbee Properties LLC
3000 Danville Blvd F 545
Alamo, California 94507

Contact: Arlene Utal

Prepared by:

Michael Brandman Associates
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Project Manager: Grant Gruber
Project Biologist: Dale Hameister
Regulatory Specialist: Dale Hameister

Michael Brandman Associates

Survey Date: 08/09/2010
Report Date: September 27, 2010

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SECTION 1: SUMMARY

Applicant Name:
Weatherbee Properties LLC
3000 Danville Blvd F 545
Alamo,CA 94507

Contact: Arlene Utal

Agent Name:
Michael Brandman Associates
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
Contact: Grant Gruber, Project Manager
Phone: 925.830.2733
Email: ggruber@brandman.com

1.1 - Introduction

At the request of the City of Manteca, Community Development Department (The City), Michael Brandman Associates (MBA) conducted a jurisdictional delineation for the approximately 477-acre Trails of Manteca project study area. The project is located in San Joaquin County, California, within the City of Manteca limits (Exhibit 1). The plan area consists of approximately 386.5 acres bounded by the Union Pacific Railroad Lathrop Intermodal Terminal (west), Roth Road (north), Airport Way (east), and Lathrop Road (south) just east of Interstate (I) 5 (Exhibit 2, and 3).

1.2 - Results Summary

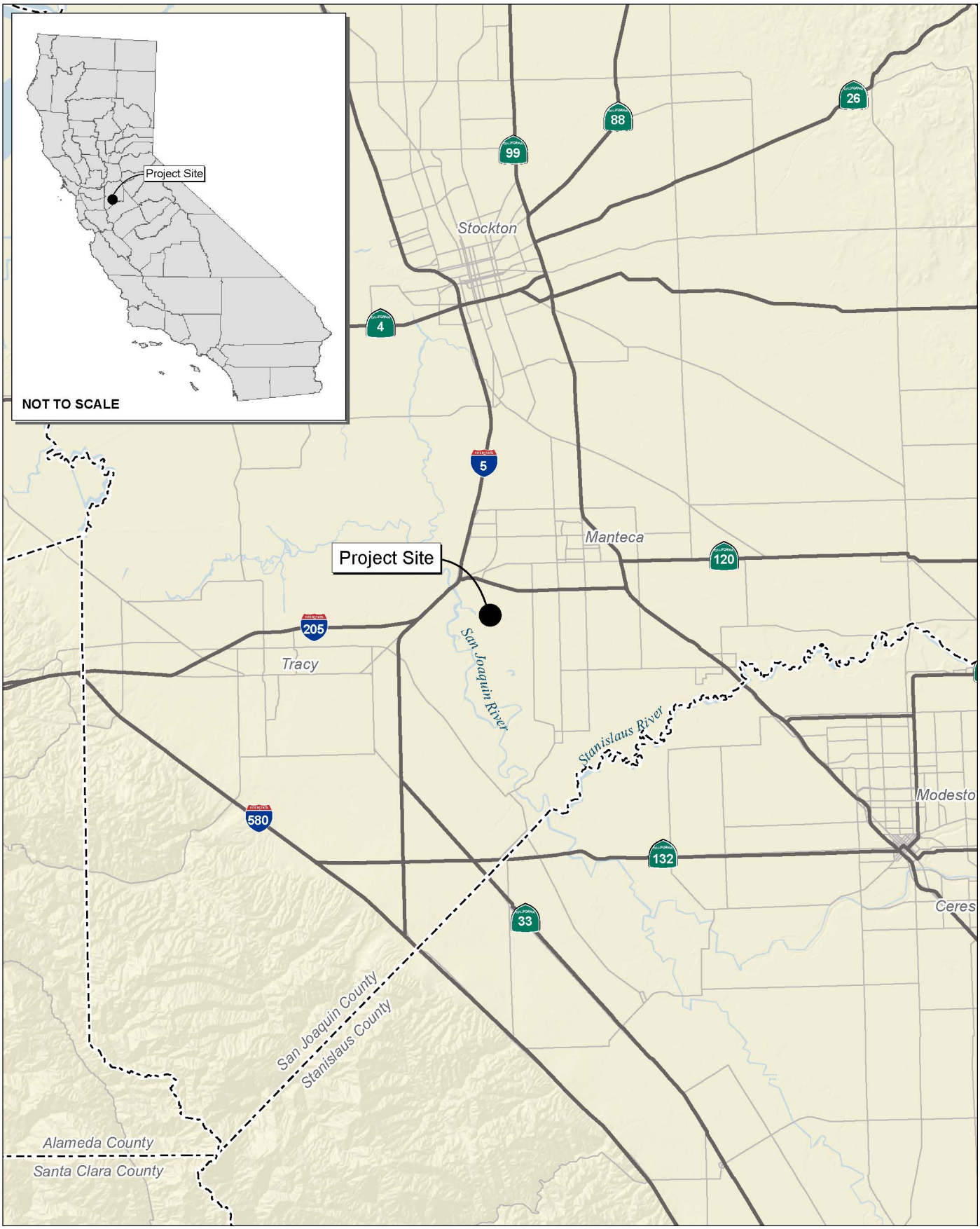
1.2.1 - USACE Jurisdiction

The study area includes one U.S. Army Corps of Engineers (USACE) jurisdictional feature, which is best described as an irrigation ditch (D5) with relatively permanent flows and hydrological connectivity to downstream navigable waters. Jurisdictional resources include 1.45 acre of waters of the United States (U.S), (2,838 linear feet).

The site also includes a number of other surface features, which were determined to be non-jurisdictional. Non-jurisdictional features include nine irrigation ditches, which are isolated features lacking connectivity to down stream jurisdictional resources.

1.2.2 - CDFG Jurisdiction

The study area includes ten California Department of Fish and Game (CDFG) jurisdictional features, which are all irrigation ditches supporting aquatic resources. CDFG was measured to the top of bank of the canal and include 11.3 acres of waters of the State, (21,998 linear feet).



Source: Census 2000 Data, The CaSIL, MBA GIS 2010.

NORTH

5 2.5 0 5

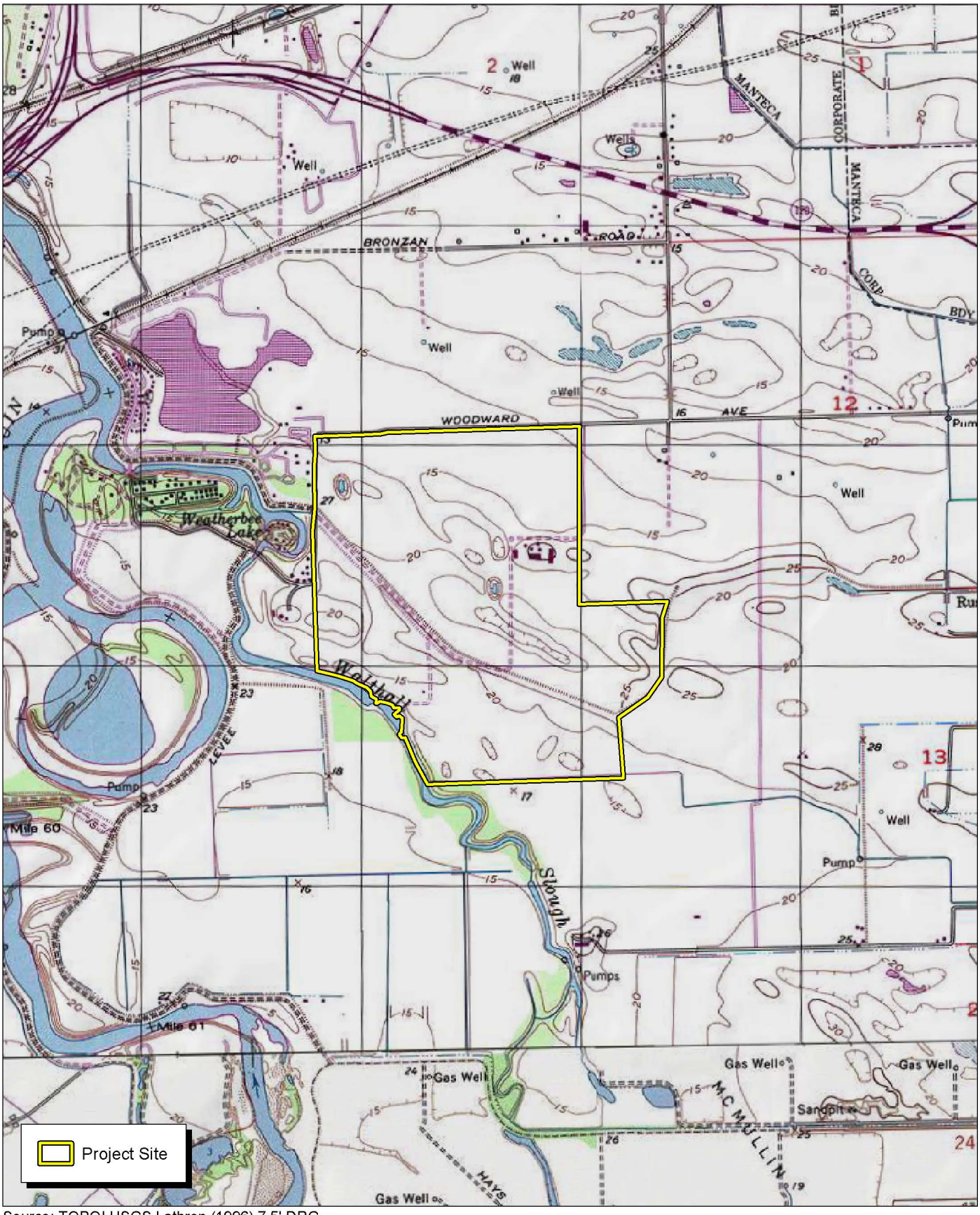
Miles

Michael Brandman Associates

Exhibit 1
Regional Location Map

24820005 • 09/2010 | 1_regional.mxd

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS



Source: TOPO! USGS Lathrop (1996) 7.5' DRG.

NORTH

2,000 1,000 0 2,000 Feet

Michael Brandman Associates

Exhibit 2
Local Vicinity Map
Topographic Base



Source: San Joaquin County NAIP; 2009. Dahlin Group Architecture Planning, July 2010; ESRI, 2008.

Exhibit 3
Local Vicinity Map
Aerial Base

NORTH

2,000 1,000 0 2,000 Feet

Michael Brandman Associates

24820005 • 09/2010 | 3_local_aerial.mxd

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS

SECTION 2: JURISDICTIONAL METHODOLOGY

2.1 - Methodology Statement

This Delineation of Jurisdictional Waters and Wetlands was conducted in accordance with regulations set forth in 33 Code of Federal Regulations (CFR) Part 328 and the USACE guidance documents referenced below:

- USACE Wetlands Research Program Technical Report Y-87-1 (on-line edition), Wetlands Delineation Manual, Environmental Laboratory, 1987 (Wetland Manual).
- USFWS Classification of Wetlands and Deepwater Habitats of the United States, Lexis M. Cowardin, U.S. Department of Interior, Fish and Wildlife Service, FWS/OBS-79/31, December 1979, updated 1992 (Cowardin).
- USACE Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest, 2001 (Arid Southwest Guidelines).
- USACE Minimum Standards for Acceptance of Preliminary Wetlands Delineations, November 30, 2001 (Minimum Standards).
- USACE Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, December 2006 (Arid West Supplement).
- USACE Jurisdictional Determination Form Instructional Guidebook, May 30, 2007 (JD Form Guidebook).
- Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* and *Carabell v. United States* (June 5, 2007) (Rapanos Guidance).
- USACE A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States, August 2008 (OHWM Manual).
- USACE Regulatory Guidance Letter No. 07-02; Exemptions for Construction or Maintenance of Irrigation Ditches and Maintenance of Drainage Ditches Under Section 404 of the Clean Water Act, July 4, 2007 (Irrigation Ditch Guidance)

A summary of applicable federal and State regulations affecting jurisdictional waters is provided in Appendix E, Regulatory Compliance Overview. Similarly, a summary of assessment criteria used in making wetland determinations and significant nexus evaluations is provided in Appendix F, Jurisdictional Wetlands and Significant Nexus Evaluation Criteria. A glossary of terms used in preparation of this document is provided in Appendix G, Glossary of Terms.

2.2 - Pre-Survey Investigation

Prior to the field visit, an aerial photograph of the study area was compared with the Lathrop, California, U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map to identify drainage features within the project study area, as indicated from topographic changes or visible drainage patterns. The United States Department of Agriculture (USDA) Soil Survey Map was reviewed to identify all soil series that occur on within the study area.

2.3 - Field Investigation

Field investigations were conducted within the project study area by Dale Hameister, on July 9, 2010. All features were mapped onto an aerial photograph. Other tools used included a 30-meter tape measure, shovel, Munsell color chart, and digital camera.

All surveys were conducted on foot. Potential jurisdictional features were systematically inspected to record existing conditions and to determine the jurisdictional limits. The study area was assessed carefully for surface flow indicators (presence of hydrophytic vegetation, staining, cracked soil, ponding, etc.). The apparent flow regimes and corresponding hydrogeomorphic features were subsequently identified. In non-wetland jurisdictional areas, the lateral extent of USACE jurisdiction was measured at the OHWM. Where appropriate, multiple measurements were recorded at various representative locations along the length of the feature.

Potential wetland areas were assessed to the outer reach of the applicable (hydrophytic) vegetative community or (where vegetation was absent/disturbed) to the natural topographical rim of the depressional feature (whichever was greater). Features previously indicated on aerial photographs (dark/saturated areas, associated riparian vegetation, etc.) were field verified during the site visit. Plant species for each vegetative community were identified and given an indicator status as prescribed in the "National List of Plant Species That Occur in Wetlands: 1988 National Summary" (Reed 1988). All data collected were recorded on wetland data forms and evaluated using the 2006 USACE Arid West Regional Guidance (see Appendix B for wetland data forms).

Width and length measurements were entered into Geographical Information System (GIS) ArcView software to identify the location and dimensions of jurisdictional areas. The ArcView application was then used to compute federal jurisdiction in acres. Acreage computations were verified using a 200-scale aerial photograph and field data.

SECTION 3: ENVIRONMENTAL SETTING

3.1 - Location of the Property

The project site is located in the City of Manteca, San Joaquin County, California; refer to Exhibit 2-1. The project site consists of five parcels totaling 477 acres, bounded by E. Woodward Road (north), S. Woodward Avenue (west), vacant land to the east and the south; refer to Exhibit 2-2. The project site is located on the Lathrop, California, USGS 7.5-minute quadrangle, Township 2 South, Range 7 East, Unsectioned (Exhibit 1 and 2). UTM (Center Point) 651389.8 W, 4181257.5 N, (Lat/Lon: Decimal Degrees: 37.767647 N, -121.28308).

3.1.1 - Directions to the Property

From SR-120 east, exit at the Airport Way and travel south. Turn right on Woodward Ave and travel for approximately 1.5 miles; this location corresponds to the northeastern corner of the project study area.

3.1.2 - Acreage and Assessor Parcel Numbers (APNs)

The project study area encompasses approximately 477 acres and includes the following APNs in whole or in part.

Table 1: Assessor Parcel Numbers

APN	Acres
241-240-02	98.8
241-240-03	148.0
241-260-05	237.3

3.1.3 - Ownership

Baird Lands Inc.
1851 Argonne Dr.
Walnut Creek, CA 94598

Contact: Diane Wurzel
Email: cyclldy@aol.com

3.2 - Land Uses

The project site contains agricultural uses consisting of row crops and almond orchards. A dry levee that runs from S. Woodward Avenue east to Airport Way bisects the property. Approximately 300

acres lie north of the levee and the remaining 177 acres lie south of the levee. The levee is under the jurisdiction of Reclamation District 17.

The area north of the levee contains row crops, an almond orchard, and several structures. The structures are located approximately 300 feet west of the eastern project boundary and consist of several dilapidated agricultural and residential buildings, including a barn, storage shed, mobile home, and related buildings. Unpaved roads connect the structures with E. Woodward Road and the nearby fields and orchards. Irrigation ditches lie along E. Woodward Road and S. Woodward Avenue and cross the property in several other locations.

The area south of the levee contains row crops, unpaved roads, and irrigation ditches. No structures are located in this area.

3.2.1 - Existing Land Use Designations

The City of Manteca General Plan designates the project site as "Urban Reserve-Low density Residential" (UR-LDR), "Urban Reserve- Very Low Density Residential" (UR-VLDR), and "Open Space" (OS). The Manteca Zoning Ordinance designates the project site "Planned Employment Center (PEC)."

The project area is within the boundaries of the San Joaquin County Multi-Species Habitat Conservation (MSHCP) and Open Space Plan.

3.2.2 - Activities Relating to Interstate or Foreign Commerce

The surveyed area has been used for farming which may have a nexus to interstate commerce. However, within the meaning of 33 CFR 328.3(a)(3), none of the features investigated are presently used for recreation or other use by interstate or foreign travelers or used in relation to interstate or foreign commerce. Onsite resources are not used for sale of fish or shellfish. Similarly, the land is not currently used for industry or other activities operating in interstate or foreign commerce. At present, no nexus to commerce is evident.

3.3 - Topography

The project study area has been leveled for agricultural uses. Topographic features within the study area include level agricultural fields, an elevated levee, and irrigation ditches. Elevation ranges from approximately 14 feet to 22 feet above mean sea level (MSL).

3.4 - Hydrology

3.4.1 - Pertinent Hydrogeomorphic Features

The study area contains nine irrigation ditches (D1-4 and D6-10) that are used for flood irrigation of row crops and almond orchards throughout the study area. There is one irrigation ditch (D5) that forms the southern boundary of study area.

3.4.2 - Watershed Description

Watershed information is summarized in Table 2 below.

Table 2: Watershed Information

Hydrologic Information	Description	Acres	Square Miles	Percent of Watershed
Hydrologic (Cataloging) Unit	Middle San Joaquin - Lower Merced - Lower Stanislaus (18040002)	1,130,762	1,766.8	100.0
Hydrologic Area	Manteca	84,980	39.0	7.515
Hydrologic Sub-Area	"Undefined" Sub-Area (535.10)	84,980	39.0	7.515
Drainage Area (D5)	Undetermined	NA	NA	NA
Source: ESRI Hydrology Data (2005).				

3.4.3 - Water Source

Surface flows within the project study area are derived from precipitation events and from flood irrigation water, which is pumped from the downstream Walthall Slough into nine irrigation ditches (D1-4 and D6-10). There is one irrigation ditch (D5) receives irrigation water from adjacent agricultural fields and forms the southern boundary of study area.

3.4.4 - Drainage Pattern

There are no natural drainage patterns within the project study area; the area was leveled in the past for agricultural uses though the property gently slopes from east to west. Surface flows from stormwater and/or runoff from excess flood irrigation result in ponding within the irrigation ditches in the ditches north of the levee. The field south of the levee and north of D6 in was being flood irrigated during the site visit. Excess irrigation water returned to Walthall Slough through an irrigation weir and culvert. (Appendix A, Photographs 33 to 35). Several inundated areas near the edges of row crops orchards were observed during field visits. Irrigation ditch D5 that forms the southern boundary of the project site flows to the west towards Walthall Slough but ends before it connects to the slough. When D5 is full, it can be diverted into D6 via a gated weir and culvert (Appendix A, Photographs 27 to 30).

3.4.5 - Downstream Connectivity

On site jurisdictional resources have indirect connectivity via surface flood irrigation to the Walthall Slough, which has been identified by the USACE as a "Traditional Navigable Water" (TNW). Downstream connectivity is summarized in Table 3 (below).

Table 3: Distance to Downstream Resources

Downstream Resource (Name)	Type	River Miles	Aerial Miles
Walthall Slough	TNW	0.0	0.0
San Joaquin River	TNW	1.46	0.6

3.4.6 - FEMA Flood Map

The Federal Emergency Management Agency (FEMA) Flood Map for areas indicates that the areas north (above) the levee are designated as X, having an annual probability of flooding less than 0.2 percent). The areas south (below) the levee are designated as A, having an annual probability of flooding of 1 percent or greater (Exhibit 5).

3.5 - Field Conditions

3.5.1 - Seasonal Climate Variation

The northern San Joaquin Valley, including the City of Manteca, is subject to relatively strong seasonal and annual variation in temperature and precipitation. Average temperatures range from December lows of 37.5 ˚F to July highs of 94.3 ˚F (Western Regional Climate Center [WRCC] 2009).

Average annual precipitation is approximately 13.81 inches; precipitation falls as rain with most precipitation occurring between the months of November through April, peaking in January at 2.85 inches (WRCC 2009).

3.5.2 - Field Conditions at time of Field Investigation

Northern California was experiencing Severe Drought through the early part of 2009 (January through May), and was unusually moist during the spring months preceding the delineation (March 2010). Table 4 provides weather information for the 2009-2010 calendar years.

Table 4: Weather Data for 2008-2009

Date	Palmer Severity Index
July 2009	Extreme Drought
October 2009	Extreme Drought
February 2010	Severe Drought
May 2010	Unusually Moist
Source: NOAA Palmer Drought Severity Index Long-term Hydrological Conditions, (2009)	

3.6 - Soils

The NRCS/USDA Web Soil Survey (Soil Staff undated) revealed a consociation of three (3) soil series occurring within the project study area (USDA Soil Series Map, Table 6). Soil series are identified in Table 5.

Table 5: USDA Soil Series Information

Soil Series Name	Description	Source Material	Pedon/Depth	Drainage
Columbia	Loamy sand, 0-2% slopes	Alluvium from mixed sources	40-60 inches to duripan	Moderately well-drained
Delhi	Loamy sand, 0-2% slopes	Wind modified material weathered from granitic rock sources	40-60 inches to duripan	Moderately well-drained
Dello	Loamy sand, 0-2% slopes	Alluvium from granitic rock sources	40-60 inches to duripan	Poorly drained
Egbert	Mucky clay loam, partially drained, 0 to 2% slopes	Formed in alluvium from mixed sources	40-60 inches to duripan	Poorly drained
Grangeville	Fine loamy sand, partially drained, 0-2% slopes	Alluvium dominantly from granitic rock sources	40-60 inches to duripan	Somewhat poorly drained
Guard	Clay loam, drained, 0-2% slopes	Alluvium from mixed sources	40-72 inches to duripan	Poorly drained
Merritt	Silty clay loam, partially drained, 0-2% slopes	Alluvium from sedimentary rock	40-72 inches to duripan	Poorly drained
Tinnin	Loamy coarse sand, 0-2% slopes	Alluvium from granitic rock sources	>80 inches	Well drained
Source: USDA/NRCS, National Cooperative Soil Survey 01/98.				

3.7 - Vegetation

3.7.1 - Vegetation Associated with Upland Areas

Vegetation communities are classified according to "A Manual of California Vegetation" (Sawyer and Keeler-Wolf 2000). This system classifies communities based upon floristic components, which are the plant taxa making up the vegetation of a given area. The floristically- based system classifies communities at the lower units of the series or association, thereby allowing for a finer-scale description of the community and a better understanding of community function.

The majority of the study area contains no natural plant communities. The area is primarily an actively cultivated field used for row crops; although there are almond orchards present in the northwest of the project area. There are also a few rural residences at the eastern edge of the study area along Airport Way with associated irrigated pastures of a few acres or less.

Plant species observed within the study area include almond (*Prunus dulcis*), squash (*Cucurbita* sp.), corn (*Zea mays*), wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), alfalfa (*Medicago sativa*), Russian thistle (*Salsola tragus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracunculus*), coyote brush (*Baccharis pilularis*), telegraphweed (*Heterotheca grandiflora*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), prickly lettuce (*Lactuca serriola*), barley (*Hordeum* sp.), and heliotrope (*Heliotropium curassavicum*).

Aquatic Resources

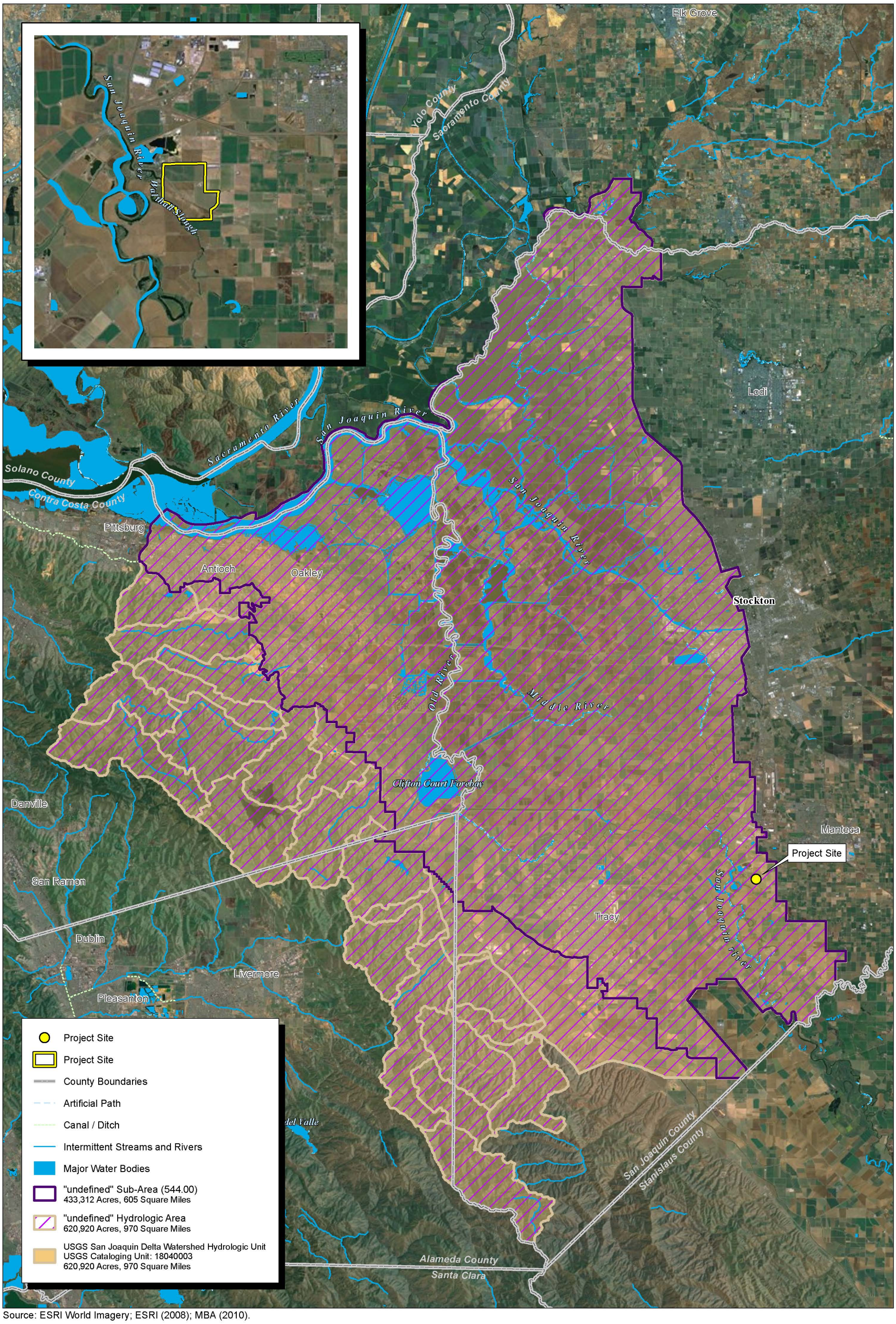
3.7.2 - Vegetation Associated with Jurisdictional Drainage Area(s)

The project area has been used extensively for agricultural purposes and does not contain any evidence of vernal pool habitat or wetlands adjacent (extending outside the OHWM of any stream (irrigation ditch). There are irrigation ditches within the project area that support a mix of upland (facultative upland, upland) and hydrophytic (facultative, facultative wet, or obligate) vegetation within the OHWM.

Vegetation found within the irrigation ditches include willow herb (*Epilobium brachycarpum*), dove weed (*Croton setigerus*), watercress (*Rorippa nasturtius-occidentalis*), prickly lettuce (*Lactuca serriola*), prickly lettuce (*Lactuca serriola*), Canadian waterweed (*Elodea canadensis*), curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium*), yellow sweet clover (*Melilotus officinalis*), and field mustard (*Brassica rapa*).

3.8 - Coastal Zone Evaluation

The project site is not within the coastal zone as defined by the California Coastal Act. As such, a Coastal Zone Management Act consistency determination is not required.



Source: ESRI World Imagery; ESRI (2008); MBA (2010).

NORTH

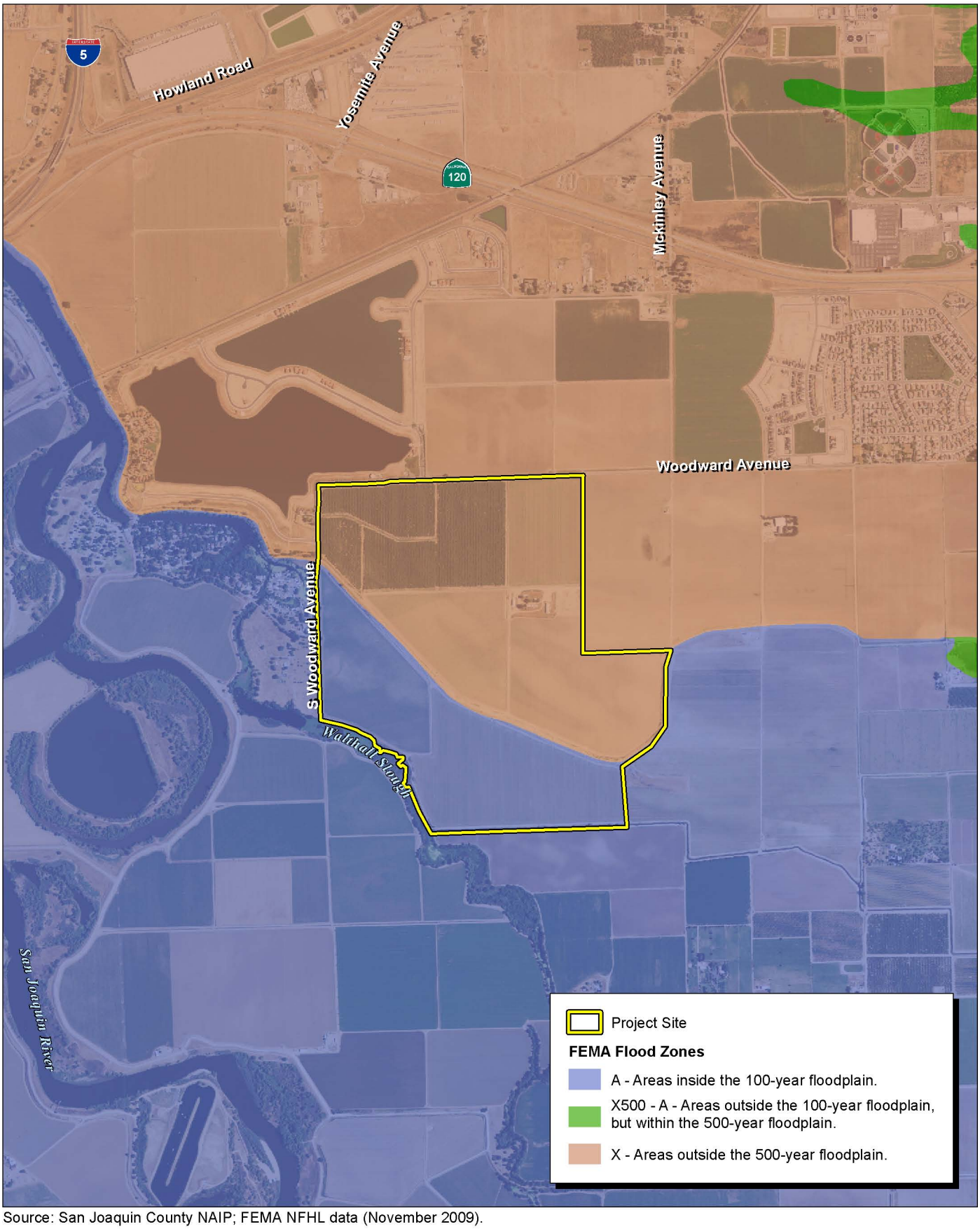
4.5 2.25 0 4.5 Miles

Michael Brandman Associates

24820005 • 09/2010 | 4_Watershed.mxd

Exhibit 4
Watershed / Drainage Map

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS



Source: San Joaquin County NAIP; FEMA NFHL data (November 2009).

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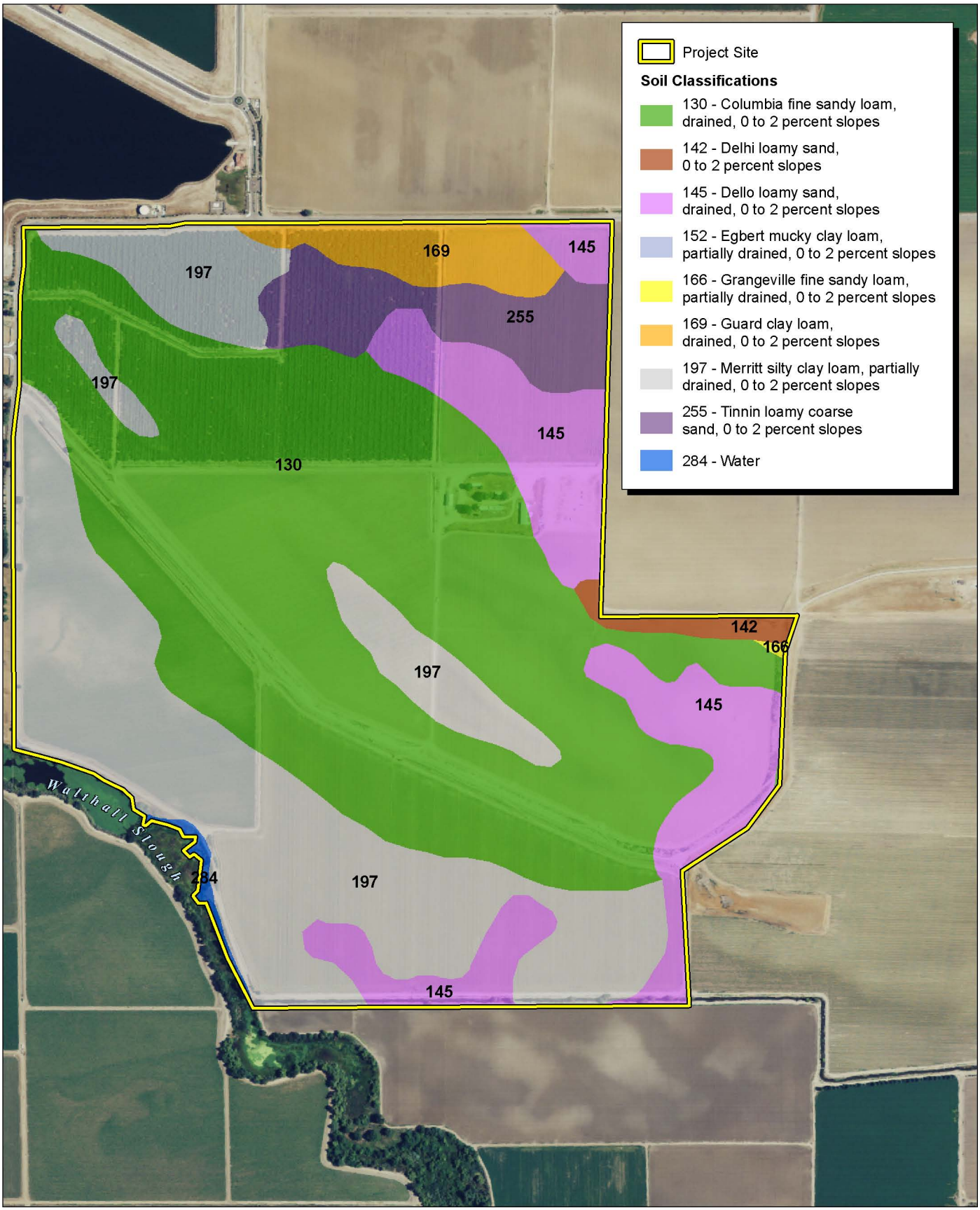
NORTH

2,000 1,000 0 2,000 Feet

Exhibit 5
FEMA Flood Zones

24820005 • 09/2010 | 5_fema.mxd

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS



Source: NAIP for San Joaquin County (2009); USDA Soils ca077 (2007).

NORTH

900 450 0 900 Feet

Michael Brandman Associates

24820005 • 09/2010 | 4_Soils.mxd

Exhibit 4
Soils Map

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS

SECTION 4: RATIONALE FOR JURISDICTIONAL DETERMINATION

Table 6 provides a summary of USACE delineated features present onsite. A delineation map is provided in

Exhibit 7. In addition, the following information is provided in the attached appendices: Site Photographs (Appendix A), OHWM forms (Appendix B), Wetland data forms (Appendix C), and Approved Jurisdictional Determination forms (Appendix D).

Table 6: Summary of USACE Delineated Features

Hydrogeomorphic Feature	Type	Length (LF)	Average Width (LF)	Area (acres)	USACE Jurisdiction (Rationale)
Irrigation Ditch D1	Channelized soft-bottom irrigation ditch created wholly in uplands.	4,161	7.7	0.75	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D2	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,959	9	0.33	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D3	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,019	6.3	0.19	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D4	Channelized soft-bottom irrigation ditch created wholly in uplands.	5,416	17.6	2.50	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D5	Channelized soft-bottom irrigation ditch created wholly in uplands.	2,838	22	1.45	Yes (Though created in uplands the drainage supports relatively permanent flows and connectivity to a TNW.
Irrigation Ditch D6	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,150	8	0.12	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D7	Channelized soft-bottom irrigation ditch created wholly in uplands.	2,057	7.5	0.29	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D8	Channelized soft-bottom irrigation ditch created wholly in uplands.	909	4	0.17	No (Lacks continuous surface connectivity to TNW)
Irrigation Ditch D9	Channelized soft-bottom irrigation ditch	1,694	5	0.16	No (Lacks continuous surface connectivity to

Hydrogeomorphic Feature	Type	Length (LF)	Average Width (LF)	Area (acres)	USACE Jurisdiction (Rationale)
	created wholly in uplands.				TNW)
Irrigation Ditch D10	Channelized soft-bottom irrigation ditch created wholly in uplands.	811	5	0.06	No (Lacks continuous surface connectivity to TNW)
Source: MBA Field Data, 08/09/2010.					

A detailed discussion of the rationale for the jurisdictional determination is provided in Section 4.1. The USACE with oversight by the Environmental Protection Agency (EPA) will make the final jurisdictional determination.

Table 7 provides a summary of CDFG delineated features present onsite. A delineation map is provided in Exhibit 8. CDFG Jurisdiction was measured to the top of bank or to the outer extent of associated riparian vegetation (including adjacent wetlands).

Table 7: Summary of CDFG Delineated Features

Hydrogeomorphic Feature	Type	Length (LF)	Average Width (LF)	Area (acres)	CDFG Jurisdiction (Rationale)
Irrigation Ditch D1	Channelized soft-bottom irrigation ditch created wholly in uplands.	4,161	22.4	1.56	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D2	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,959	2.0	0.82	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D3	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,019	18	0.43	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D4	Channelized soft-bottom irrigation ditch created wholly in uplands.	5,416	33	3.51	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D5	Channelized soft-bottom irrigation ditch created wholly	2,838	35	2.32	Yes (Perennial feature, with aquatic resources)

Hydrogeomorphic Feature	Type	Length (LF)	Average Width (LF)	Area (acres)	CDFG Jurisdiction (Rationale)
	in uplands.				
Irrigation Ditch D6	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,150	8	0.20	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D7	Channelized soft-bottom irrigation ditch created wholly in uplands.	2,057	19.5	0.90	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D8	Channelized soft-bottom irrigation ditch created wholly in uplands.	909	20	0.44	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D9	Channelized soft-bottom irrigation ditch created wholly in uplands.	1,694	20	0.75	Yes (Perennial feature, with limited aquatic resources)
Irrigation Ditch D10	Channelized soft-bottom irrigation ditch created wholly in uplands.	811	20	0.38	Yes (Perennial feature, with limited aquatic resources)
Source: MBA Field Data, 08/09/2010.					

A detailed discussion of the rationale for the jurisdictional determination is provided in Section 4.1. The USACE with oversight by the EPA will make the final jurisdictional determination.

4.1 - Irrigation Ditches (D1-4 and D 6-10)

The USACE defines an irrigation ditch as "is a man-made feature and/or an upland swale that either conveys water to an ultimate irrigation use or place of use, or that moves and/or conveys irrigation water (e.g., run-off' from irrigation) away from irrigated lands. Irrigation ditches may include the distribution system or parts thereof, consisting of manmade canals, laterals, ditches, siphons, and/or pipes, or pump systems. If a ditch carries only irrigation water, irrigation return flows, and overland flow (precipitation and/or snowmelt) that moves from an irrigated field either to or away from an area subject to irrigated agriculture (e.g., an irrigated field), that ditch would be considered an irrigation ditch, not a drainage ditch."

There is a series of irrigation ditches within the study area that are solely used to flood irrigate agricultural fields, the USACE will not assert jurisdiction over ditches (including roadside ditches) excavated wholly in and drainage only uplands and that do not carry a relatively permanent flow of

water.[1] Similarly, Subsequent to the 2001 US Supreme Court decision in *Solid Waste Agency of North Cook County v. USACE* (SWANCC), drainages and wetlands that are isolated from downstream navigable or established jurisdictional waters, may be excluded from federal jurisdiction (see discussion in Appendix E).

The water source for the irrigations ditches is pumped from the downstream Walthall Slough and pumped into the ditches for flood irrigation.

4.1.1 - Downstream Connectivity (SWANCC Determination)

The irrigation ditches (D1-4 and D6-10) are filled with water pumped from the adjacent/downstream Walthall Slough (TNW) and the water is used for flood irrigation. The features do not have flow directions and are filled for the express reason of irrigation. Excess water remains in the ditches and percolates or surface flows through an active agricultural field (growing squash at the time of the surveys) in the southwest of the project site (below the levee) and returns to Walthall Slough downstream from the pump station through a gated irrigation weir and culvert which enters the slough in thick vegetation above the water line. Walthall Slough ultimately connects to the San Joaquin River (A USACE designated TNW). There are no upstream waters that enter the irrigation ditches.

4.1.2 - Drainage Characterization

The irrigation ditches (D1-4 and D6-10) are filled with water pumped from the adjacented/downstream Walthall Slough. Several irrigation outlet pipes are located within the banks of the ditches to facilitate the flood irrigation of the adjacent fields.

4.1.3 - OHWM Determination

The irrigation ditches appears to be an artificially constructed soft-bottom conveyance, but has taken on a natural character within the defined channel. The ordinary high water mark within the drainage was determined by clear water marks on the banks of the ditches.

Plants associated with the Irrigation Drain: willow herb (UPL), tumbleweed (UPL), prickly lettuce (FAC) curly dock (FACW), yellow nutsedge (FACW), smilograss (UPL), field mustard (UPL).

4.1.4 - Adjacent Wetlands

No hydric vegetation or soils were observed outside of the OHWM of the ditches. Based on the presence of vegetation and soil samples, no adjacent wetlands were observed extending outward beyond the OHWM.

[1] Joint EPA/USACE Memorandum, June 5, 2007. Clean Water Act Jurisdiction Following the U.S. Supreme Court Decision, *Rapanos v. United States & Carabell v. United States*. (Hereafter: Rapanos Memorandum) At page 1.

4.1.5 - USACE Jurisdiction

Because the drainages are isolated from downstream navigable or established jurisdictional waters, they will not be subject to USACE jurisdiction. The waters within the ditches flows from anthropogenically controlled flows and no upstream flows enter features.

4.1.6 - CDFG Jurisdiction

CDFG was measured/delineated to the top of bank of the ditch. No adjacent riparian/wetland habitat was found to extend jurisdiction beyond the top of bank. Though the drainage is artificially constructed, it exhibits aquatic resources, which include the presence of obligate plants the potential presence for both aquatic invertebrates and vertebrates. Mosquito fish, aquatic snails, and western toad were observed. As such, the drainages will be subject to CDFG jurisdiction under Fish & Game Code 1600/1602. CDFG jurisdiction includes 8.99 acres (19,160 LF linear feet) of jurisdictional streambed.

4.2 - Irrigation Ditch (D5)

Irrigation ditch D5 which forms the southern boundary of the project site flows to the west towards Walthall Slough but ends before it connects to the slough. When D5 is full, it can be diverted north into D6 via a gated weir and culvert

The drainage is mostly comprised of bare soil but also contains black willow (OBL), watercress (OBL), doveweed (FAC), sweet yellow clover (FACU), yellow nutsedge (FACW), smilograss (UPL). Within the OHWM, the drainage also contained duckweed (OBL), and Canadian waterweed (OBL).

The drainage has an inconsistent flow regime where a definable OHWM is sometimes absent. During the July 9, 2010 site visit some flow present, but ends before the drainage reaches Walthall Slough. The source of the water was from offsite agricultural/flood irrigation activities. Source waters for D4 are from irrigation runoff from farms adjacent to the subject property to the south and east. If farming was stopped on the subject property D5 would likely remain in similar condition of hydrology, vegetation and function because of the offsite source of water.

4.2.1 - USACE Determination

Drainage D5 contains relatively permanent flows and wetland hydrology. Access was not possible to test the soils within the OHWM. There were no hydric soils outside of the OHWM. The end of D5 is approximately 55 linear feet from Walthall Slough and is within the 100-year floodplain. Although the drainage is not directly connected to downstream navigable (jurisdictional) resources, it does contain wetland indicators and is adjacent to a TNW and thus it will be subject to USACE jurisdiction.

4.2.2 - CDFG Determination

CDFG was measured/delineated to the top of bank of the ditch. No adjacent riparian/wetland habitat was found to extend jurisdiction beyond the top of bank. Though the drainage is artificially

constructed, it exhibits aquatic resources, which include the presence of obligate plants the potential presence for both aquatic invertebrates and vertebrates. Mosquito fish, aquatic snails, and evidence of crayfish were observed. The crayfish shells were found on the banks of D5 but could have been moved from Walthall Slough by raccoons, which were observed. As such, the drainages will be subject to CDFG jurisdiction under Fish & Game Code 1600/1602.



Source: NAIP for San Joaquin County (2009); ESRI (2008); MBA (2010).

NORTH

600 300 0 600

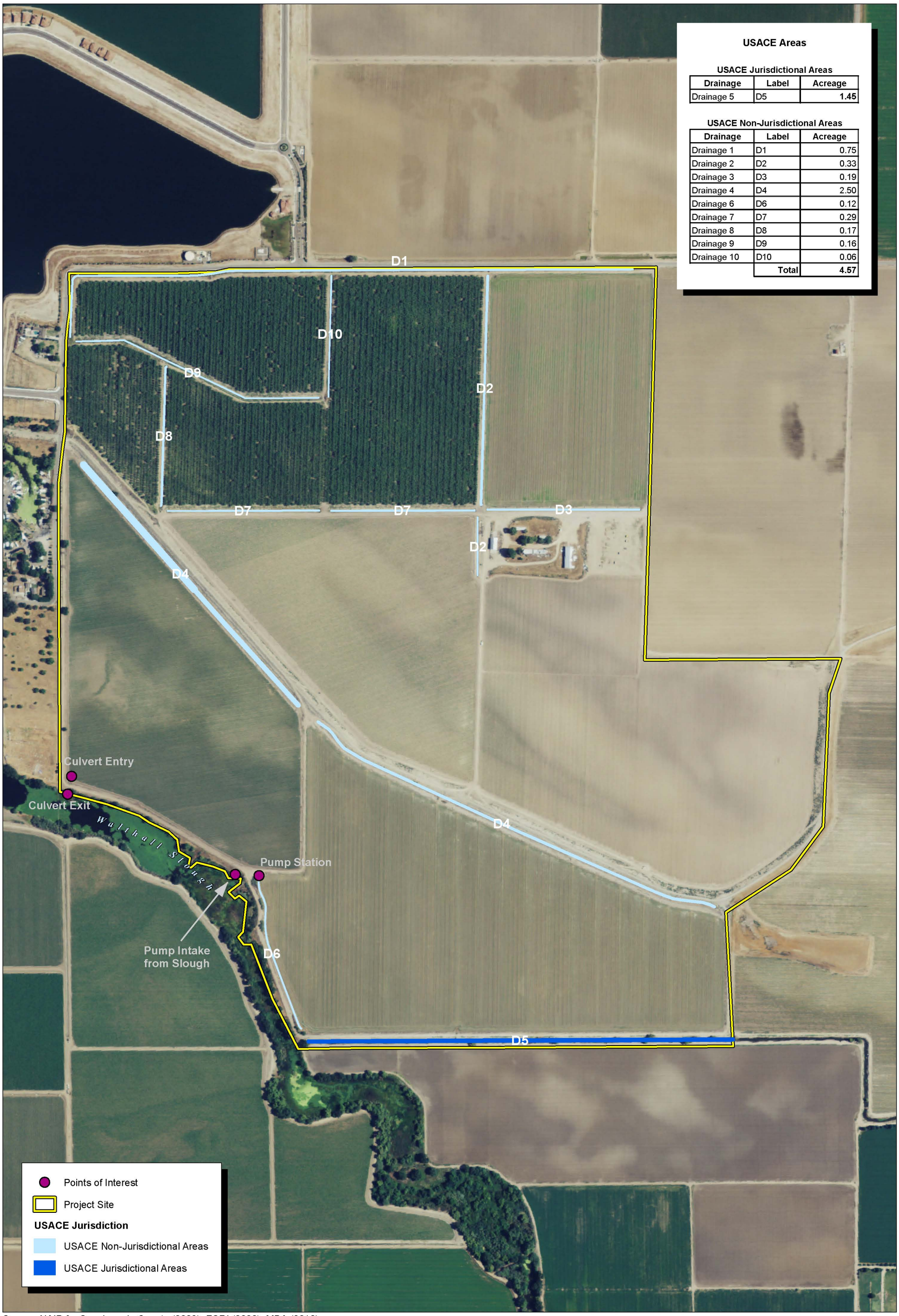
Feet

Michael Brandman Associates

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Exhibit 7
Plant Communities Map

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS



USACE Areas

USACE Jurisdictional Areas

Drainage	Label	Acreage
Drainage 5	D5	**1.45**

USACE Non-Jurisdictional Areas

Drainage	Label	Acreage
Drainage 1	D1	0.75
Drainage 2	D2	0.33
Drainage 3	D3	0.19
Drainage 4	D4	2.50
Drainage 6	D6	0.12
Drainage 7	D7	0.29
Drainage 8	D8	0.17
Drainage 9	D9	0.16
Drainage 10	D10	0.06
	Total	**4.57**

Source: NAIP for San Joaquin County (2009); ESRI (2008); MBA (2010).

NORTH

600 300 0 600 Feet

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Exhibit 8
USACE Jurisdictional Areas

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS

CDFG Jurisdictional Areas

Drainage	Label	Acreage
Drainage 1	D1	1.56
Drainage 2	D2	0.82
Drainage 3	D3	0.43
Drainage 4	D4	3.51
Drainage 5	D5	2.32
Drainage 6	D6	0.20
Drainage 7	D7	0.90
Drainage 8	D8	0.44
Drainage 9	D9	0.75
Drainage 10	D10	0.38
	Total	**11.30**



Source: NAIP for San Joaquin County (2009); ESRI (2008); MBA (2010).

NORTH

600 300 0 600

Feet

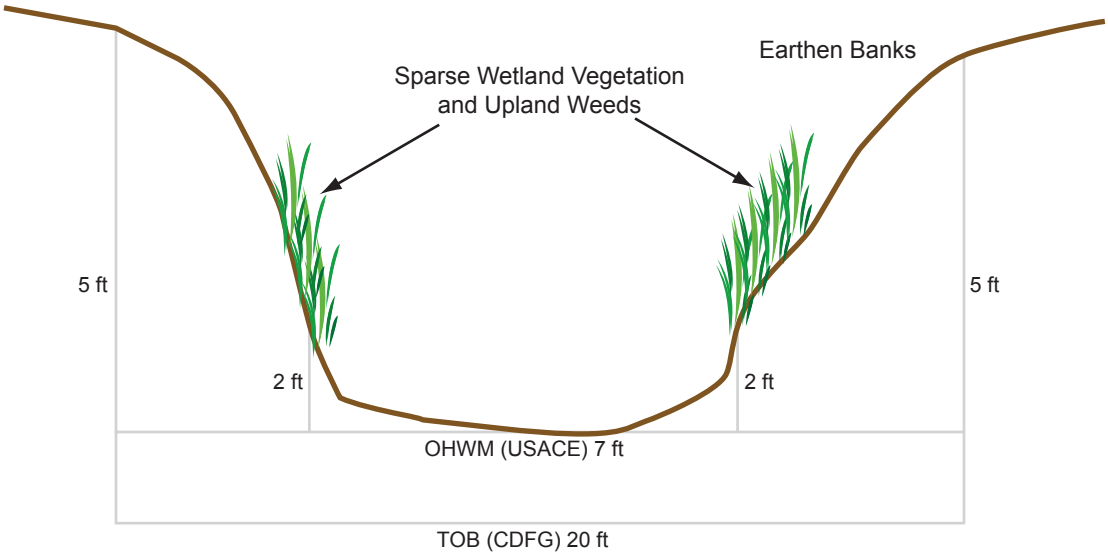
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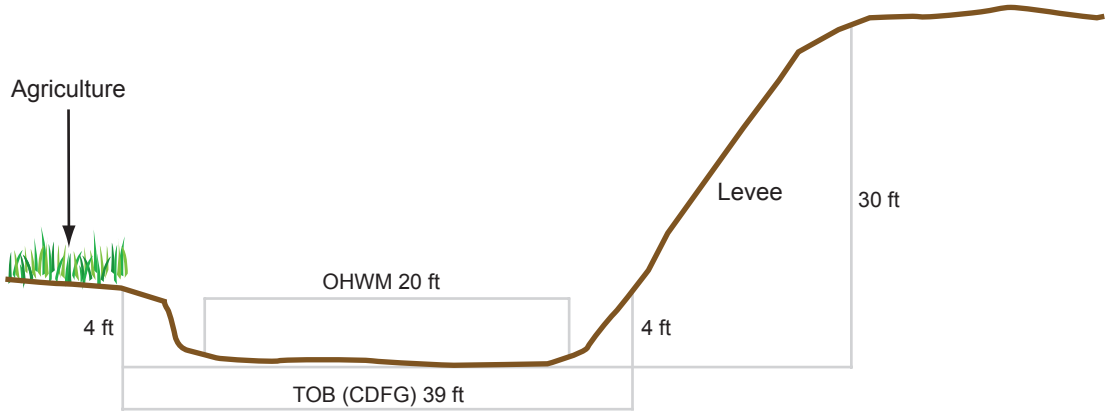
Exhibit 9
CDFG Jurisdictional Areas

CITY OF MANTECA • THE TRAILS OF MANTECA
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS

Drainages 1, 2, 3, 7, 8, 9 & 10



Drainage 4



TOB - Top of Bank
OHWM - Ordinary High Water Mark
USACE - United States Army Corps of Engineers
CDFG - California Department of Fish and Game

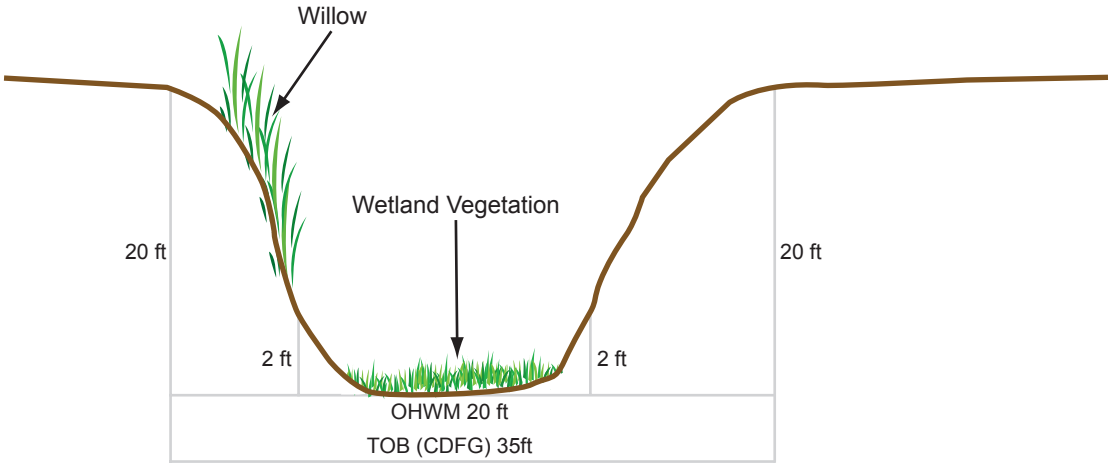
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Not To Scale

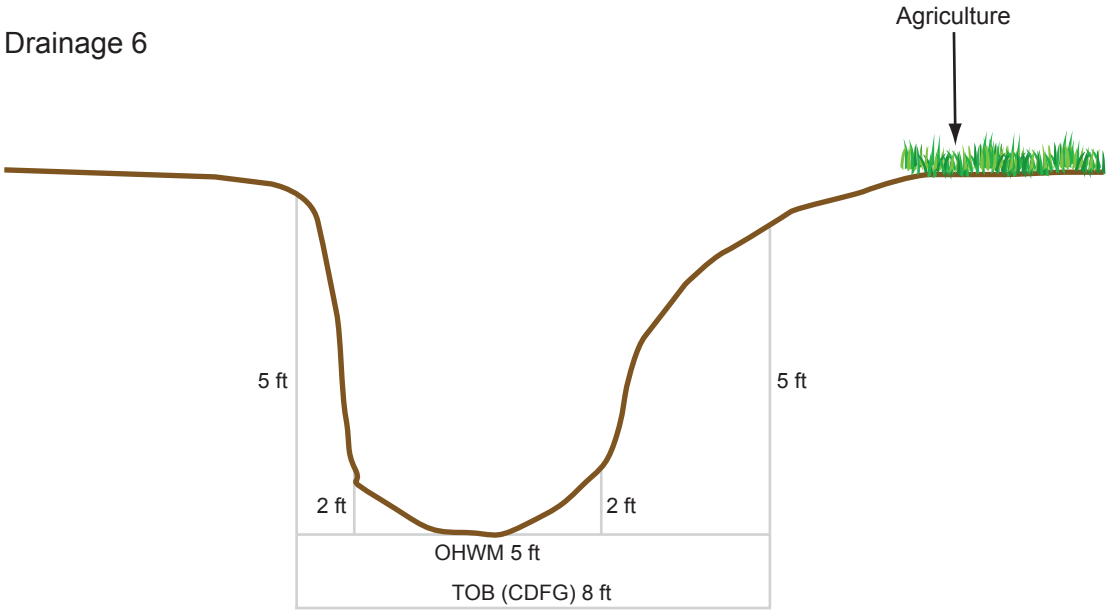
Michael Brandman Associates

Exhibit 10a
Representative Cross Sections

Drainage 5



Drainage 6



TOB - Top of Bank
OHWM - Ordinary High Water Mark
CDFG - California Department of Fish and Game

NORTH

Not To Scale

Michael Brandman Associates

Exhibit 10b
Representative Cross Sections

SECTION 5: REFERENCES

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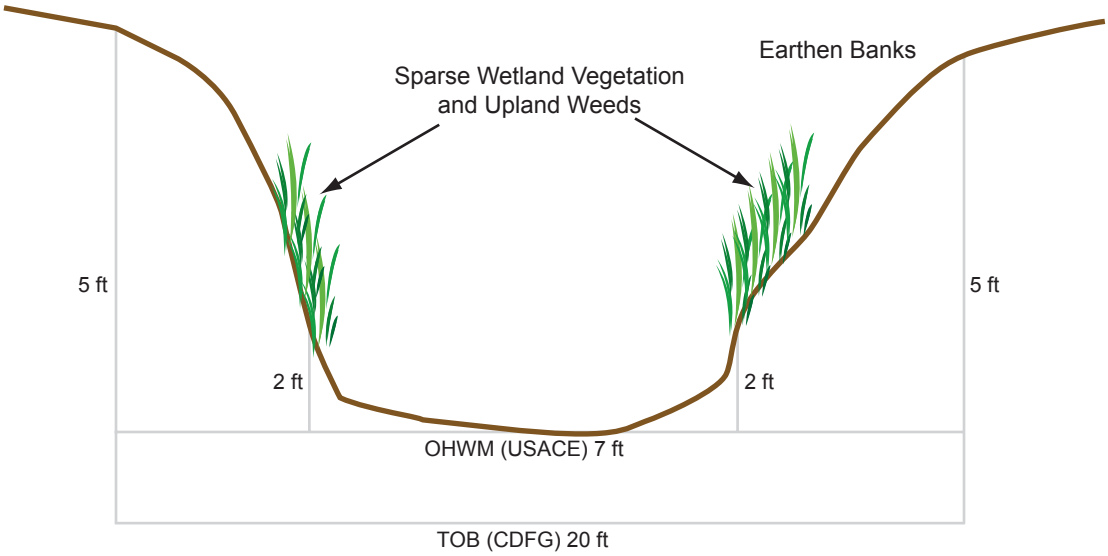
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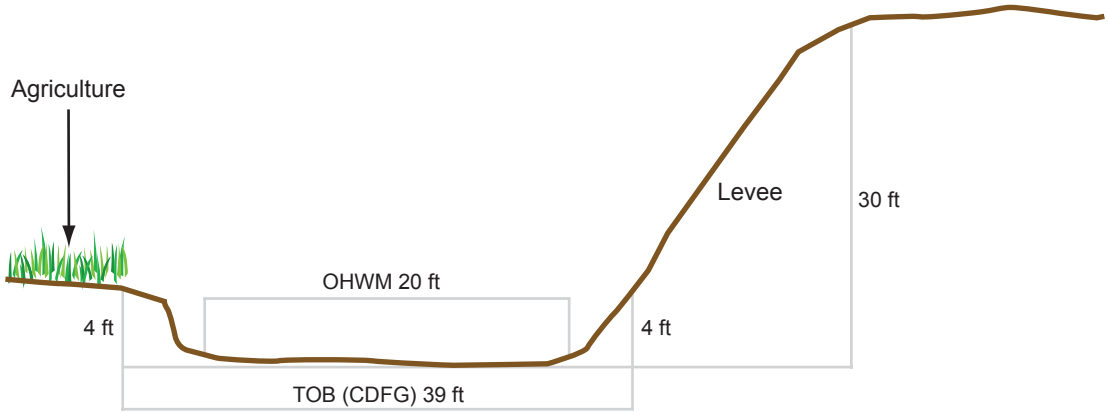
Appendix A:
Site Photographs

A-1: Photograph Location Map

Drainages 1, 2, 3, 7, 8, 9 & 10



Drainage 4



TOB - Top of Bank
OHWM - Ordinary High Water Mark

NORTH

Not To Scale

Michael Brandman Associates

Exhibit 10a
Representative Cross Sections

A-2: Site Photographs



[1] Irrigation ditch D1: (Facing west). Irrigation ditch located on the northern property boundary immediately south of Woodward Ave. The ditch when filled is pumped into the adjacent alfalfa field for flood irrigations. Source water is pumped from Walthall Slough located 0.9 miles to the southeast. There is no outlet and no flow direction.



[2] Irrigation ditch D1: (Facing east) Irrigation ditch located on the northern property boundary immediately south of Woodward Ave.

Source: Michael Brandman Associates, 2010



[3] Irrigation ditch D1: (Facing east) Irrigation ditch located on the northern property boundary immediately south of Woodward Ave.



[4] Irrigation ditch D1: (Facing west) Irrigation ditch located on the northern property boundary immediately south of Woodward Ave.

Source: Michael Brandman Associates, 2010



[5] Irrigation ditch D1: (Facing east) Irrigation ditch located on the northern property boundary immediately south of Woodward Ave.



[6] Irrigation ditch D1: (Facing east) Irrigation ditch located at the corner of South Williamson Road and Woodward Ave.

Source: Michael Brandman Associates, 2010



[7] Irrigation ditch D1: (Facing north) End of irrigation ditch located east of South Williamson Road.



[8] Irrigation ditch D2: (Facing west) Irrigation ditch located on the perpendicular Woodward Ave. The ditch when filled is pumped into the adjacent alfalfa field for flood irrigations. Source water is pumped from Walthall Slough located 0.6 miles to the southeast.

Source: Michael Brandman Associates, 2010



[9] Irrigation ditch D2: (Facing south). Irrigation ditch located on the perpendicular Woodward Ave.



[10] Irrigation ditch D2: (Facing south). Photograph showing southern end of the irrigation ditch.

Source: Michael Brandman Associates, 2010



[11] Irrigation ditch D3: (Facing east). The ditch when filled is pumped into the adjacent almond orchard and alfalfa field for flood irrigations. Source water is pumped from Walthall Slough located 0.4 miles to the south.



[12] Irrigation ditch D3: (Facing west)

Source: Michael Brandman Associates, 2010



[13] Irrigation ditch D3: (Facing east)



[14] Irrigation ditch D3: Flood irrigation weir connecting sections of D3.

Source: Michael Brandman Associates, 2010



[15] Irrigation ditch D3: (Facing east). Irrigation ditch D3 south of alfalfa field.



[16] Irrigation ditch D3: (Facing west). Irrigation ditch D3 south of alfalfa field.

Source: Michael Brandman Associates, 2010



[17] Irrigation ditch D4: (Facing east) Irrigation ditch D4. The ditch when filled is pumped into the adjacent fields for flood irrigations. Flood irrigation of squash is in progress at the time of photo. Source water is pumped from Walthall Slough located 0.3 miles to the southeast.



[18] Irrigation ditch D4: (Facing west) Irrigation ditch D4 with flood irrigation of squash in progress.

Source: Michael Brandman Associates, 2010



[19] Irrigation ditch D4: (Facing east) Irrigation ditch D4 with flood irrigation of squash in progress.



[20] Irrigation ditch D4: (Facing west) Irrigation weir filling the western section of D4 for flood irrigation.

Source: Michael Brandman Associates, 2010



[21] Irrigation ditch D4: (Facing east) Irrigation ditch D4 adjacent to alfalfa field.



[22] Irrigation ditch D4: (Facing west) Irrigation ditch D4 adjacent to alfalfa field.

Source: Michael Brandman Associates, 2010



[23] Irrigation ditch D4: (Facing north) East end of irrigation ditch D4.



[24] Irrigation ditch D5: (Facing east out of the study area) Irrigation ditch located on the southern boundary of the study area. Source water is from flood irrigation of adjacent farms to the east and south.

Source: Michael Brandman Associates, 2010



[25] Irrigation ditch D5: (Facing west) Irrigation ditch located on the southern boundary of the study area.



[26] Irrigation ditch D5: (Facing south) Photograph showing Canadian waterweed and pipe draining field south of the channel outside of the study area.

Source: Michael Brandman Associates, 2010



[27] Irrigation ditch D5: (Facing east) Irrigation ditch located on the southern boundary of the study area.



[28] Irrigation ditch D5: (Facing east) Western end of irrigation ditch D5 and adjacent to Walthall Slough (TNW). The end is separated from Walthall Slough by a dirt road and bank. Water can be diverted into D6 to the north, only when the ditch is full.

Source: Michael Brandman Associates, 2010



[29] Irrigation ditch D6: (Facing south) Culvert connecting D5 and D6.



[30] Irrigation ditch D6: (Facing north) Irrigation channel D6.

Source: Michael Brandman Associates, 2010



[31] Irrigation ditch D6: (Facing north) Irrigation channel D6.



[32] Irrigation ditch D6: (Facing east) North end of D6 and pump station.

Source: Michael Brandman Associates, 2010



[33] : (Facing north). Squash field being flood irrigated.



[34] Irrigation weir: (Facing north) Irrigation weir located in the south west of the study area that returns excess water from flood irrigation back into Walthall Slough.

Source: Michael Brandman Associates, 2010



[35] Irrigation weir: Irrigation weir that returns excess water from flood irrigation back into Walthall Slough is obscured by vegetation. The water exits above the water level of the slough.



[36] Irrigation ditch D8: (Facing west) Irrigation weir filling the western section of D4 for flood irrigation.

Source: Michael Brandman Associates, 2010



[37] Irrigation ditch D9: (Facing east) Irrigation ditch D9 within almond orchard. The ditch when filled is pumped into the almond orchard for flood irrigations. Source water is pumped from Walthall Slough located 0.9 miles to the southeast.



[38] Irrigation ditch D9: (Facing east) Irrigation ditch D9 within almond orchard.

Source: Michael Brandman Associates, 2010



[39] Irrigation ditch D9: (Facing west) Irrigation ditch D9 within almond orchard.



[40] Irrigation ditch D10: (Facing north) Irrigation ditch D10 within almond orchard. The ditch when filled is pumped into the almond orchard for flood irrigations. Source water is pumped from Walthall Slough located 0.6 miles to the southeast.

Source: Michael Brandman Associates, 2010

Appendix B:
OHWM Forms

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 12:15
Project Number:	**Town:** Manteca	**State:** CA
Stream: D1	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** At the northern boundary of project area.
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77529°N / 121.27586°W

Notes:

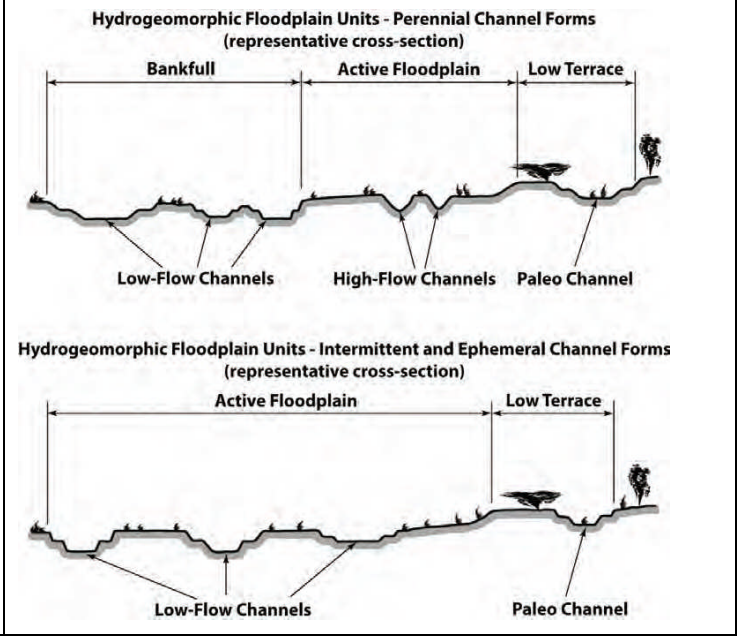
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates:
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam (10 YR 3/1)

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 20%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Piptatherum miliaceum, Rumex crispus, Cyperus esculentus, Salsola tragus

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ **Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary. Adjacent alfalfa fields

☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam - 5YR 3/3 in field.

Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: 100%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Medicago sativa

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☒ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☐ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph ☐ GPS
- ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 6:15
Project Number:	**Town:** Manteca	**State:** CA
Stream: D1	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** At the northwest boundary of the project.
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77511°N / 121.28868°W

Notes:

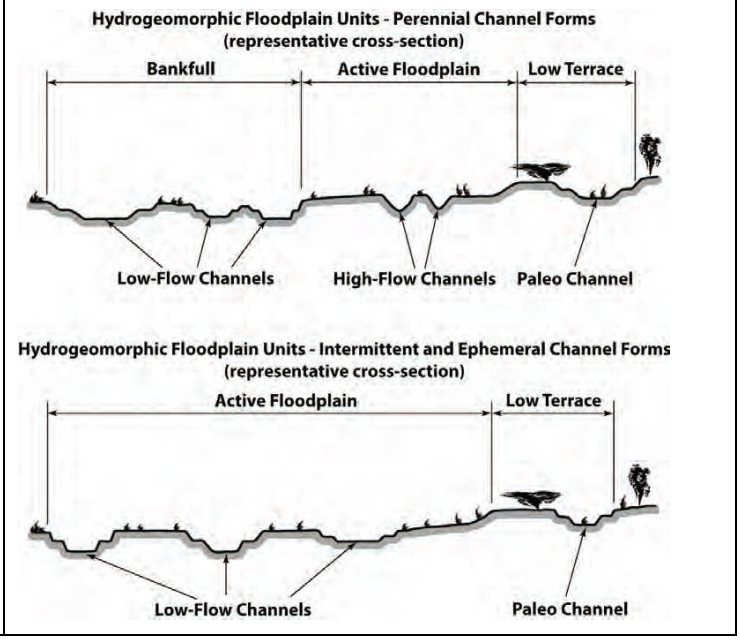
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates:
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam (10 YR 3/1)

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 80%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Piptatherum miliaceum, Rumex crispus, Salsola tragus

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ **Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary. Adjacent almond orchard

☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam -

Total veg cover: 100 % Tree: 100 % Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Prunus dulcis

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☒ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☐ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph ☐ GPS
- ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 1:30
Project Number:	**Town:** Manteca	**State:** CA
Stream: D2	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** north of farm yard
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77249°N / 121.2932°W

Notes:

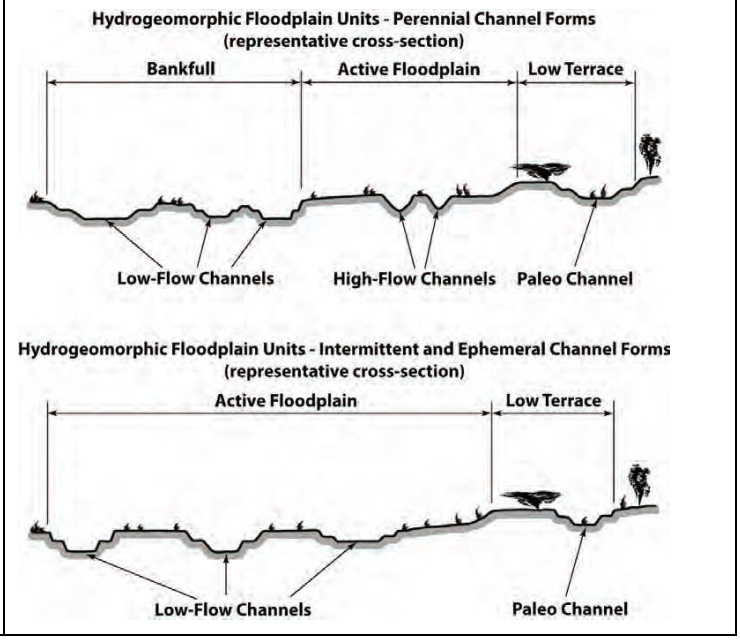
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.

☒ Locate the low-flow channel (lowest part of the channel). Record observations.

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 5%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Cyperus esculentus,Piptatherum miliaceum

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary. Adjacent alfalfa field

☐ Other: _____

☒ Continue walking the channel cross-section. Record observations below.

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam -

Total veg cover: 100 % Tree: 100 % Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Prunus dulcis

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☒ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☐ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph ☐ GPS
- ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 1:30
Project Number:	**Town:** Manteca	**State:** CA
Stream: D3	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** north of farm yard
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77081°N / 121.28269°W

Notes:

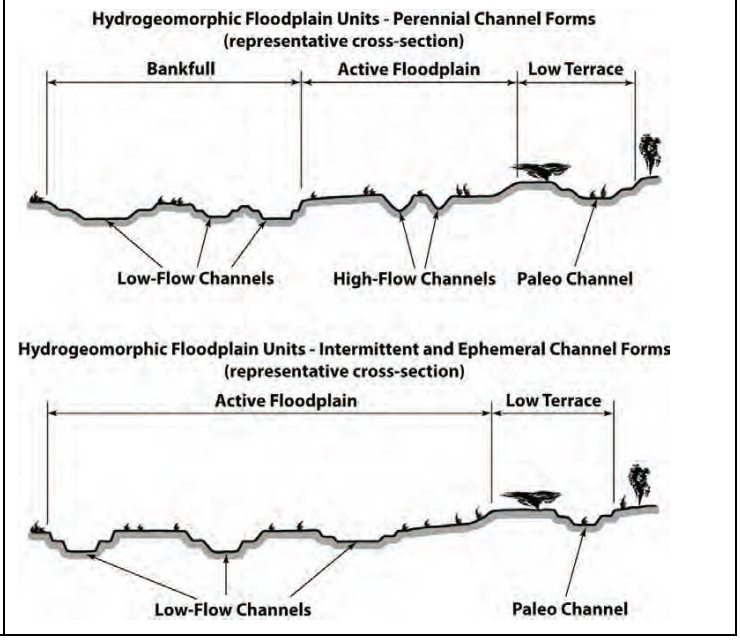
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.

☒ Locate the low-flow channel (lowest part of the channel). Record observations.

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 5%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Cyperus esculentus,Piptatherum miliaceum

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary. Adjacent alfalfa field

☐ Other: _____

☒ Continue walking the channel cross-section. Record observations below.

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam -

Total veg cover: 100 % Tree: _____ % Shrub: _____% Herb: 100%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Medicago sativa

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
☐	**Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.** Consistency of indicators used to delineate the active floodplain/low terrace boundary: Y ☐ N ☒ Change in average sediment texture Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb Y ☐ N ☐ Change in overall vegetation maturity Y ☐ N ☐ Change in dominant species present Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank Y ☐ N ☐ Drift and/or debris Y ☐ N ☐ Other: _____ Y ☐ N ☐ Other: _____
☐	**If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**
☐	**Continue walking the channel cross-section. Record characteristics of the low terrace.** Characteristics of the low terrace: Average sediment texture: _____ Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: _____ Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.** Active floodplain/low terrace boundary acquired via: ☐ Mapping on aerial photograph ☐ GPS ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 4:30
Project Number:	**Town:** Manteca	**State:** CA
Stream: D4	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** north of farm yard
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77158°N / 121.28817°W

Notes:

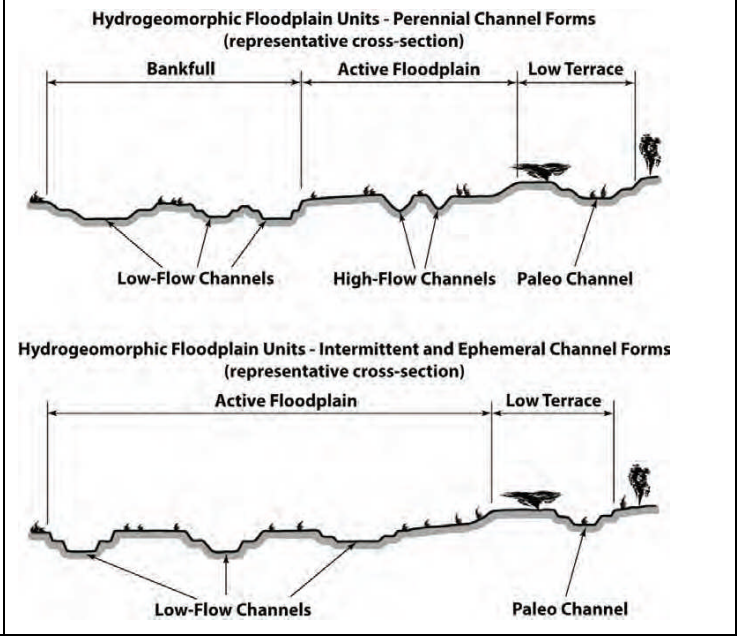
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.

☒ Locate the low-flow channel (lowest part of the channel). Record observations.

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 5%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Cyperus esculentus,Piptatherum miliaceum

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary. Adjacent squash field to the south

☒ Other: Levee to the north demarcating floodplain boundary

☒ Continue walking the channel cross-section. Record observations below.

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam -

Total veg cover: 100 % Tree: _____ % Shrub: _____% Herb: 100%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Cucurbita sp.

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
☐	**Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.** Consistency of indicators used to delineate the active floodplain/low terrace boundary: Y ☐ N ☒ Change in average sediment texture Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb Y ☐ N ☐ Change in overall vegetation maturity Y ☐ N ☐ Change in dominant species present Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank Y ☐ N ☐ Drift and/or debris Y ☐ N ☐ Other: _____ Y ☐ N ☐ Other: _____
☐	**If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**
☐	**Continue walking the channel cross-section. Record characteristics of the low terrace.** Characteristics of the low terrace: Average sediment texture: _____ Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: _____ Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.** Active floodplain/low terrace boundary acquired via: ☐ Mapping on aerial photograph ☐ GPS ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 2:30
Project Number:	**Town:** Manteca	**State:** CA
Stream: D5	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** Southern boundary of project area
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.76118°N / 121.27647°W

Notes:

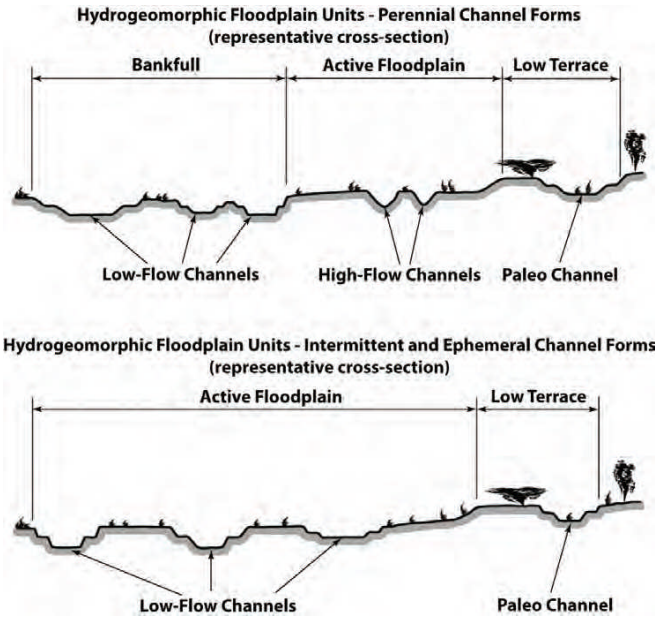
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.

☒ Locate the low-flow channel (lowest part of the channel). Record observations.

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam

Total veg cover: 25 % Tree: 10 % Shrub: 0 % Herb: 15%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Salix gooddingii, Cyperus esculentus,Piptatherum miliaceum, Melilotus officinalis

Other: ☒ Elodea canadensis within water.

☒ _____

☐ _____

☐ _____

☐ Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary. Adjacent dirt road and agricutural fields.

☐ Other: _____

☒ Continue walking the channel cross-section. Record observations below.

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam -

Total veg cover: 100 % Tree: _____ % Shrub: _____% Herb: 100%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Medicago sativa.

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☒ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☐ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph ☐ GPS
- ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 2:45
Project Number:	**Town:** Manteca	**State:** CA
Stream: D6	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** Southern boundary of project area
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.76214°N / 121.28383°W

Notes:

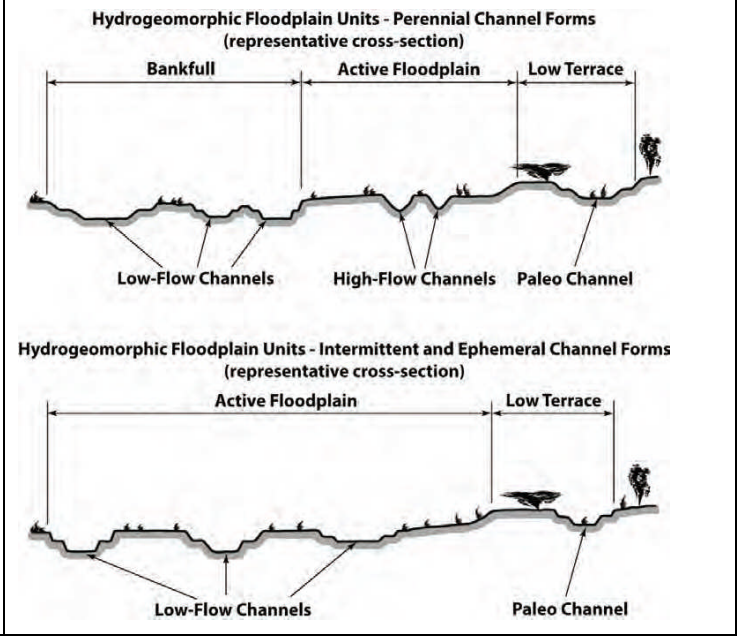
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.

☒ Locate the low-flow channel (lowest part of the channel). Record observations.

Characteristics of the low-flow channel:

Average sediment texture: Sandy Loam

Total veg cover: 15 % Tree: 5 % Shrub: 0 % Herb: 10%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Salix exigua,Piptatherum miliaceum, Xanthium strumarium

Other: ☒ Elodea canadensis within water.

☒ _____

☐ _____

☐ _____

☐ Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☒ Other: No floodplain boundary to the east. Adjacent dirt road and agricutural fields.

☒ Other: Adjacent to dirt road and then valley oak ripaian of Walthall Slough

☒ Continue walking the channel cross-section. Record observations below.

Characteristics of the active floodplain:

Average sediment texture: Sandy Loam -

Total veg cover: 100 % Tree: 60 % Shrub: _____ % Herb: 100%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Medicago sativa to east. Quercus lobata to west.

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
☐	**Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.** Consistency of indicators used to delineate the active floodplain/low terrace boundary: Y ☐ N ☒ Change in average sediment texture Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb Y ☐ N ☐ Change in overall vegetation maturity Y ☐ N ☐ Change in dominant species present Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank Y ☐ N ☐ Drift and/or debris Y ☐ N ☐ Other: _____ Y ☐ N ☐ Other: _____
☐	**If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**
☐	**Continue walking the channel cross-section. Record characteristics of the low terrace.** Characteristics of the low terrace: Average sediment texture: _____ Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: _____ Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.** Active floodplain/low terrace boundary acquired via: ☐ Mapping on aerial photograph ☐ GPS ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 5:45
Project Number:	**Town:** Manteca	**State:** CA
Stream: D7	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** Southern boundary of project area
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77078°N / 121.28466°W

Notes:

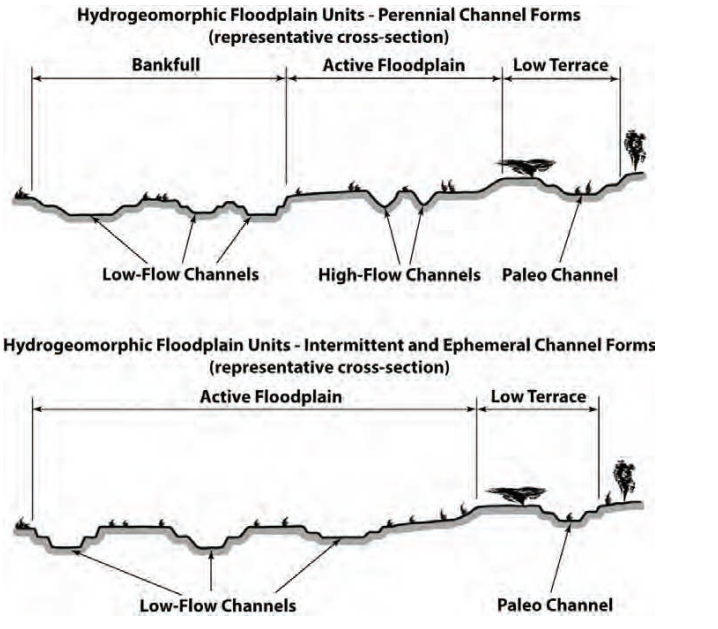
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐	**Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**
☒	**Locate the low-flow channel (lowest part of the channel). Record observations.** Characteristics of the low-flow channel: Average sediment texture: Sandy Loam Total veg cover: _____ % Tree: _____ % Shrub: 0 % Herb: 70% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: Piptatherum miliaceum, Rumex crispus, Epilobium brachycarpum Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.** Characteristics used to delineate the low-flow/active floodplain boundary: ☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☒ Other: No floodplain. Adjacent to Almond orchard ☐ Other: _____
☒	**Continue walking the channel cross-section. Record observations below.** Characteristics of the active floodplain: Average sediment texture: Sandy Loam - Total veg cover: 100 % Tree: 100 % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees) Dominant species present: Prunus dulcis Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
☐	**Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.** Consistency of indicators used to delineate the active floodplain/low terrace boundary: Y ☐ N ☒ Change in average sediment texture Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb Y ☐ N ☐ Change in overall vegetation maturity Y ☐ N ☐ Change in dominant species present Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank Y ☐ N ☐ Drift and/or debris Y ☐ N ☐ Other: _____ Y ☐ N ☐ Other: _____
☐	**If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**
☐	**Continue walking the channel cross-section. Record characteristics of the low terrace.** Characteristics of the low terrace: Average sediment texture: _____ Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: _____ Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.** Active floodplain/low terrace boundary acquired via: ☐ Mapping on aerial photograph ☐ GPS ☐ Digitized on computer ☐ Other: _____

Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 5:50
Project Number:	**Town:** Manteca	**State:** CA
Stream: D8	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** Within almond orchard
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77263°N / 121.28661°W

Notes:

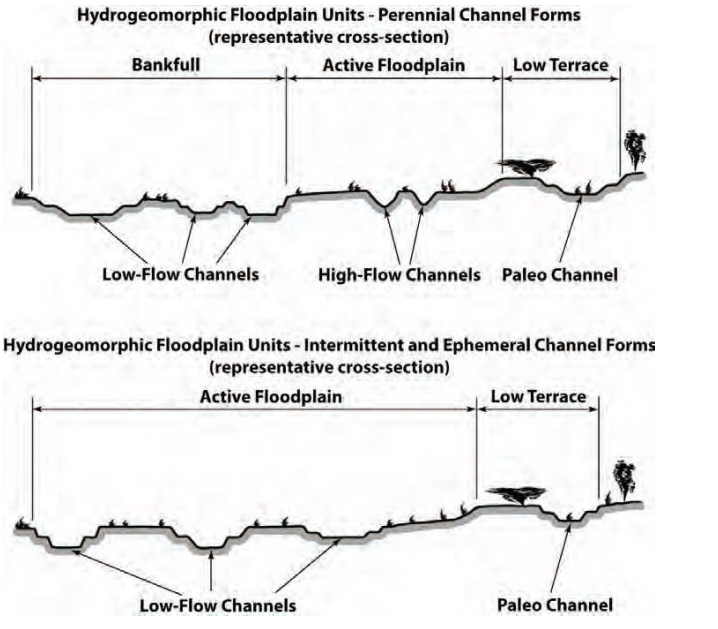
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐	**Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**
☒	**Locate the low-flow channel (lowest part of the channel). Record observations.** Characteristics of the low-flow channel: Average sediment texture: Sandy Loam Total veg cover: _____ % Tree: _____ % Shrub: 0 % Herb: 70% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: Salsola tragus, Piptatherum miliaceum, Rumex crispus, Epilobium brachycarpum Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.** Characteristics used to delineate the low-flow/active floodplain boundary: ☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☒ Other: No floodplain. Adjacent to Almond orchard ☐ Other: _____
☒	**Continue walking the channel cross-section. Record observations below.** Characteristics of the active floodplain: Average sediment texture: Sandy Loam - Total veg cover: 100 % Tree: 100 % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees) Dominant species present: Prunus dulcis Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
☐	**Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.** Consistency of indicators used to delineate the active floodplain/low terrace boundary: Y ☐ N ☒ Change in average sediment texture Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb Y ☐ N ☐ Change in overall vegetation maturity Y ☐ N ☐ Change in dominant species present Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank Y ☐ N ☐ Drift and/or debris Y ☐ N ☐ Other: _____ Y ☐ N ☐ Other: _____
☐	**If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**
☐	**Continue walking the channel cross-section. Record characteristics of the low terrace.** Characteristics of the low terrace: Average sediment texture: _____ Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: _____ Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
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Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 5:50
Project Number:	**Town:** Manteca	**State:** CA
Stream: D9	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** Within almond orchard
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77394°N / 121.28746°W

Notes:

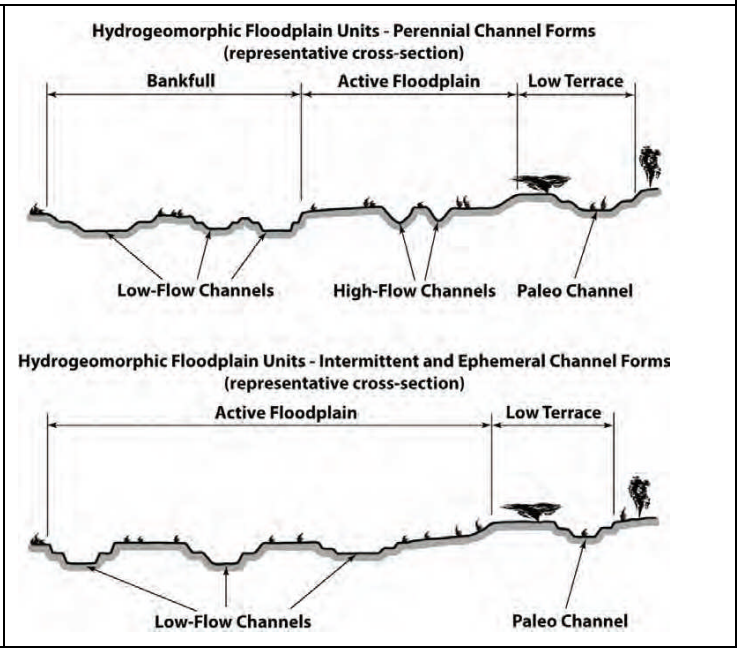
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
- ☒ Vegetation maps
- ☒ Soil Maps
- ☐ Rainfall/precipitation maps
- ☐ Existing Delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2- ,5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐	**Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**
☒	**Locate the low-flow channel (lowest part of the channel). Record observations.** Characteristics of the low-flow channel: Average sediment texture: Sandy Loam Total veg cover: _____ % Tree: _____ % Shrub: 0 % Herb: 70% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: Salsola tragus, Piptatherum miliaceum, Rumex crispus, Epilobium brachycarpum Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
☐	**Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.** Characteristics used to delineate the low-flow/active floodplain boundary: ☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☒ Other: No floodplain. Adjacent to Almond orchard ☐ Other: _____
☒	**Continue walking the channel cross-section. Record observations below.** Characteristics of the active floodplain: Average sediment texture: Sandy Loam - Total veg cover: 100 % Tree: 100 % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees) Dominant species present: Prunus dulcis Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
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Project: Trails of Manteca	**Date:** 8/9/2010	**Time:** 5:50
Project Number:	**Town:** Manteca	**State:** CA
Stream: D10	**Photo begin file#:**	**Photo end file#:**
Investigator(s): Dale Hameister		

Y ☒ N ☐ Do normal circumstances exist on the site?	**Location Details:** Within almond orchard
Y ☒ N ☐ Is the site significantly disturbed?	**Projection:** N/A **Datum:** N/A
Type: Land clearing for Agriculture/grazing	**Coordinates:** 37.77408°N / 121.28279°W

Notes:

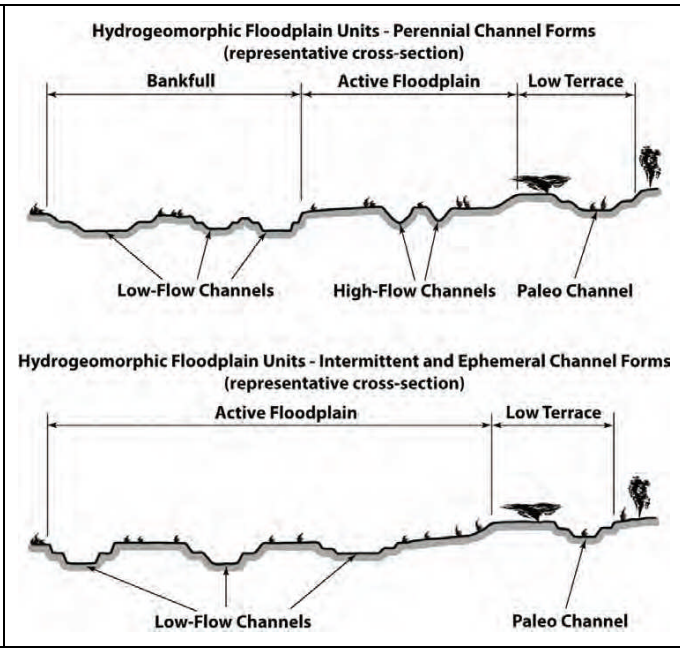
Brief site description: Flat agricutural fields with irrigation ditches

Checklist of resources (if available):

- ☒ Aerial Photography
  - Dates: 2010
- ☒ Topographic maps
  - Scale:
- ☐ Geologic Maps
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- ☐ Other Studies
- ☐ Stream gage data
  - Gage number:
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- ☐ Clinometer / level
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1/2 0.0098	0.25	Medium sand	Sand
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		Clay	Mud



☐	Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.
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☒	Continue walking the channel cross-section. Record observations below. Characteristics of the active floodplain: Average sediment texture: Sandy Loam - Total veg cover: 100 % Tree: 100 % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☒ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees) Dominant species present: Prunus dulcis Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☐	**Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.** Characteristics used to delineate the active floodplain/ low terrace boundary: ☐ Change in average sediment texture ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb ☐ Change in overall vegetation maturity ☐ Change in dominant species present ☐ Other ☐ Presence of bed and bank ☐ Drift and/or debris ☐ Other: _____ ☐ Other: _____
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☐	**If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**
☐	**Continue walking the channel cross-section. Record characteristics of the low terrace.** Characteristics of the low terrace: Average sediment texture: _____ Total veg cover: _____ % Tree: _____ % Shrub: _____% Herb: _____% Community successional stage: ☐ NA ☐ Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: _____ Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
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Appendix C:
Wetlands Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D1-1 b**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **0%**

Subregion (LRR): Lat: **37.775204 N** Long: **121.27586 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☐ Soil: ☑ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☑
Hydric Soil Present?	Yes ☐	No ☑
Wetland Hydrology Present?	Yes ☐	No ☑

Is the Sampled Area within a Wetland? Yes ☐ No ☑

Remarks:

Sampling point in adjacent alfalfa field. The soil of the banks and adjacent dirt road were too compact to sample.

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Medicago sativa**	90	Yes	UPL
2. **Bromus hordeaceus**	10	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: % Cover of Biotic Crust:

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **0.0%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = **5.00**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☐

Remarks:

SOIL

Sampling Point: **D1-1 b**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
20	5 yr 3/3	100						sandy loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☐ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? **Yes** ☐ **No** ☑ **Depth (inches):** _____

Water Table Present? **Yes** ☐ **No** ☑ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☐ **No** ☑ **Depth (inches):** _____

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D1-1**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **Jan-00**

Subregion (LRR): Lat: **37.77529 N** Long: **121.27586 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☑ Soil: ☑ or Hydrology ☑ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	**Yes** ☑	**No** ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐ **No** ☑
Hydric Soil Present?	**Yes** ☐	**No** ☑		
Wetland Hydrology Present?	**Yes** ☑	**No** ☐		

Remarks:

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Piptatherum miliaceum**	5	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	5		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: % Cover of Biotic Crust:

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **0.0%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	5 (A)		25 (B)

Prevalence Index = B/A = **5.00**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☐

Remarks:

SOIL

Sampling Point: **D1-1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
20	10 YR 3/1	100						Sandy loam	No redox in OHWM

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☑ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☑ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present?	Yes ☑	No ☐	Depth (inches):	5 to 12	
Water Table Present?	Yes ☐	No ☐	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes ☐	No ☐	Depth (inches):		

Wetland Hydrology Present? Yes ☐ No ☐

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Mosquito fish and aquatic snails were present in irrigation ditch.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D2**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **0%**

Subregion (LRR): Lat: **37.77517 N** Long: **121.27914 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☑ Soil: ☑ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	**Yes** ☑	**No** ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐ **No** ☑
Hydric Soil Present?	**Yes** ☐	**No** ☑		
Wetland Hydrology Present?	**Yes** ☑	**No** ☐		

Remarks:
Irrigation ditch constructed soley in uplands

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Piptatherum miliaceum**	5	Yes	UPL
2. **Conyza canadensis**	2	Yes	UPL
3. **Cyperus esculentus**	2	Yes	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	9		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 91 % Cover of Biotic Crust:

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **33.3%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	7	x 5 =	35
Column Totals:	9 (A)		39 (B)

Prevalence Index = B/A = **4.33**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks:

SOIL

Sampling Point: **D2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
20	10 yr 3/2	100						Loamy clay	Sample in OHWM
									Soil too compacted ouside
									of ditch

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks

Well mixed soils. No sign of redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☐ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present?	**Yes** ☑	**No** ☐	**Depth (inches):**	8 inches	
Water Table Present?	**Yes** ☐	**No** ☐	**Depth (inches):**		
Saturation Present? (includes capillary fringe)	**Yes** ☑	**No** ☐	**Depth (inches):**		

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D3**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **0%**

Subregion (LRR): Lat: **37.77090N** Long: **121.27593 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☑ Soil: ☑ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	**Yes** ☑	**No** ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐ **No** ☑
Hydric Soil Present?	**Yes** ☐	**No** ☑		
Wetland Hydrology Present?	**Yes** ☑	**No** ☐		

Remarks:
Irrigation ditch constructed soley in uplands

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Piptatherum miliaceum**	5	Yes	UPL
2. **Cyperus esculentus**	2	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	7		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 85 % Cover of Biotic Crust: 8

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **50.0%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	7 (A)		29 (B)

Prevalence Index = B/A = **4.14**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks:

SOIL

Sampling Point: **D3**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
20	5 yr 3/3	100						Loamy clay	Sample in OHWM
									Soil too compacted ouside
									of ditch

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks

Well mixed soils. No sign of redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☐ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present?	**Yes** ☑	**No** ☐	**Depth (inches):**	8 inches	
Water Table Present?	**Yes** ☐	**No** ☐	**Depth (inches):**		
Saturation Present? (includes capillary fringe)	**Yes** ☑	**No** ☐	**Depth (inches):**		

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D4**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **0%**

Subregion (LRR): Lat: **37.76553 N** Long: **121.28028 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☑ Soil: ☑ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	**Yes** ☑	**No** ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐ **No** ☑
Hydric Soil Present?	**Yes** ☐	**No** ☑		
Wetland Hydrology Present?	**Yes** ☑	**No** ☐		

Remarks:
Irrigation ditch constructed soley in uplands

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Piptatherum miliaceum**	10	Yes	UPL
2. **Cyperus esculentus**	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	15		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 85 % Cover of Biotic Crust:

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **50.0%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	15 (A)		60 (B)

Prevalence Index = B/A = **4.00**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks:

SOIL

Sampling Point: **D4**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
20	5 yr 3/3	100						sandy loam	Sample in OHWM
									Soil too compacted ouside
									of ditch

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks

Well mixed soils. No sign of redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☐ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? **Yes** ☑ **No** ☐ **Depth (inches):** 8 inches

Water Table Present? **Yes** ☐ **No** ☑ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☑ **No** ☐ **Depth (inches):** _____

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D5**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **0%**

Subregion (LRR): Lat: **37.76118 N** Long: **121.27647 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☑ Soil: ☑ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	**Yes** ☑	**No** ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐ **No** ☐
Hydric Soil Present?	**Yes** ☐	**No** ☐		
Wetland Hydrology Present?	**Yes** ☑	**No** ☐		

Remarks:
Irrigation ditch at southern boundary of study area.

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. **Salix gooddingii**	20	Yes	OBL
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Piptatherum miliaceum**	10	Yes	UPL
2. **Cyperus esculentus**	5	Yes	FACW
3. **Melilotus officinalis**	5	Yes	FACU
4. **Rorippa palustris ssp. occidentalis**	5	Yes	OBL
5. **Elodea canadensis**	5	Yes	OBL
6.			
7.			
8.			
Total Cover:	30		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 60 % Cover of Biotic Crust:

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 4 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **66.7%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	30	x 1 =	30
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	10	x 5 =	50
Column Totals:	50 (A)		110 (B)

Prevalence Index = B/A = **2.20**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks:

SOIL

Sampling Point: **D5**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
									Access was not possible
									sample within OHWM

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☐

Remarks

Well mixed soils. No sign of redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☑ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present?	Yes ☑	No ☐	Depth (inches):	10-20 inches	
Water Table Present?	Yes ☐	No ☑	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes ☑	No ☐	Depth (inches):		

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: **Trails of Manteca** City/County: **Manteca, San Joaquin** Sampling Date: **8/9/2010**

Applicant/Owner: **Baird Lands Inc.** State: **CA** Sampling Point: **D8**

Investigator(s): **Dale Hameister** Section, Township, Range: **Unsectioned, T2S, R7E**

Landform (hillslope, terrace,etc): **Level agricutural fields** Local relief (concave, conves, none): **none** Slope (%) **0%**

Subregion (LRR): Lat: **37.77263 N** Long: **121.28661 W** Datum:

Soil Map Unit Name: **USDA Soils ca077** NWI Classification:

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☑ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	**Yes** ☑	**No** ☐
Hydric Soil Present?	**Yes** ☐	**No** ☑
Wetland Hydrology Present?	**Yes** ☑	**No** ☐

Is the Sampled Area within a Wetland? **Yes** ☐ **No** ☑

Remarks:
Irrigation ditch within almond orchard

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. **Salsola tragus**	20	Yes	UPL
2. **Epilobium brachycarpum**	20	Yes	UPL
3. **Rumex crispus**	15	Yes	FACW
4. **Piptatherum miliaceum**	10	No	UPL
5.			
6.			
7.			
8.			
Total Cover:	65		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 10 % Cover of Biotic Crust:

Dominance Test worksheet:

Number of Dominant Species That are OBL FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **33.3%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	65 (A)		280 (B)

Prevalence Index = B/A = **4.31**

Hydrophytic Vegetation Indicatore:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks:

SOIL

Sampling Point: **D8**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type	Redox Features Loc	Redox Features %	Texture	Remarks
20	10 yr 3/1	100						sandy loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrixc

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depresssions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)
- ☐ Aquatic Invertebrates (B11)
- ☐ Crayfish Burows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Depostis (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? **Yes** ☑ **No** ☐ **Depth (inches):** _____

Water Table Present? **Yes** ☐ **No** ☑ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☑ **No** ☐ **Depth (inches):** _____

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D: Approved Jurisdictional Determination Forms

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: _____

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Trails of Manteca

State: **CA** County/parish/borough: **San Joaquin** City: **Manteca**
Center coordinates of site (lat/long in degree decimal format): **37.767647 N, -121.28308**.
Universal Transverse Mercator:
Name of nearest waterbody: **Walthall Slough**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Walthall Slough**
Name of watershed or Hydrologic Unit Code (HUC): San Joaquin Delta Watershed Hydrologic Unit, USGS Cataloging Unit: 18040003
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date: _____
☒ Field Determination. Date(s): **8/9/2010**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **"Are No"** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **"Are"** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☒ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: _____ linear feet: width _____ (ft) and/or _____ acres.
      Wetlands: _____ acres.

   c. **Limits (boundaries) of jurisdiction** based on:
      Elevation of established OHWM (if known): _____ Feet.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW:
Walthall Slough
Summarize rationale supporting determination:
There is an existing marina within the trailer park less than 1 mile downstream from project area.

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: _____
Drainage area: _____
Average annual rainfall: _____
Average annual snowfall: _____

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through _____ tributaries before entering TNW.

Project waters are _____ **(or less)** river miles from TNW.
Project waters are _____ **(or less)** river miles from RPW.
Project waters are _____ **(or less)** aerial (straight) miles from TNW.
Project waters are _____ **(or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]:

Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: _____
☐ Manipulated (man-altered). Explain: _____

Tributary properties with respect to top of bank (estimate):
Average width: _____feet
Average depth: _____ feet
Average side slopes: _____

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. ***Flow regime in southern potion of Drainage 2 is defined by a vegetated swale of Tree Tobacco, 75% cover.***	

☐ Other. Explain:.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. _____ Explain:

Tributary geometry: _____
Tributary gradient (approximate average slope): _____

(c) Flow:

Tributary provides for:
Estimate average number of flow events in review area/year:
Describe flow regime:

Other information on duration and volume:.

Surface flow is: _____.
Characteristics:

Subsurface flow: **Unknown**. Explain findings: N/A.
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list): _____	

☐ Discontinuous OHWM.[7] Explain: _____

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☒ High Tide Line indicated by:	☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list): _____	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain:

Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): Black willow - sparse within D5. Valley oak riparian along Walthall Slough

☐ Wetland fringe. Characteristics: _____

☐ Habitat for:

☐ Federally Listed species. Explain findings: _____

☒ Fish/spawn areas. Explain findings: Only mosquito fish were observed.

☒ Other environmentally-sensitive species. Explain findings: Habitat for Swainson's hawk (observed)

☐ Aquatic/wildlife diversity. Explain findings: _____

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: _____ acres

Wetland type: _____ Explain: .

Wetland quality: _____. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: _____ . Explain:

Surface flow is**:**

Characteristics:

Subsurface flow: _____ . Explain findings:

☐ Dye (or other) test performed:.

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: _____

☐ Ecological connection. Explain: _____

☐ Separated by berm/barrier. Explain: _____

(d) Proximity (Relationship) to TNW

Project wetlands are _____ river miles from TNW.

Project waters are _____ aerial (straight) miles from TNW.

Flow is from: _____

Estimate approximate location of wetland as within the floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): _____

☐ Vegetation type/percent cover. Explain: _____

☐ Habitat for:

☐ Federally Listed species. Explain findings: _____

☐ Fish/spawn areas. Explain findings: _____
☐ Other environmentally-sensitive species. Explain findings: _____
☐ Aquatic/wildlife diversity. Explain findings: _____

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis:
Approximately (_____) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Description (of Wetland)	Directly abuts? (Y/N)	Size (in acres)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW? _____
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW? _____
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs? _____.
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW? _____

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
☐ TNWs: _____ linear feet, width _____ (ft), Or, _____ acres.
☐ Wetlands adjacent to TNWs: _____ acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☐ Tributary waters: _____ linear feet**,** width _____ (ft).
   ☐ Other non-wetland waters: _____ acres.
   Identify type(s) of waters:
   Irrigation Ditch

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☐ Tributary waters: _____ linear feet,width: _____ (ft).
   ☒ Other non-wetland waters: **8,999** acres.
   Identify type(s) of waters: **.**

Description	Type	Linear feet width (ft)	Size (in acres)
D1-4, D6-10	Irrigation Ditches	8-40	8,999

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: _____ acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: **1.45** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: _____ acres.

7. **Impoundments of jurisdictional waters.[9]**

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
- ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: _____
- ☐ Other factors. Explain: _____

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: _____ linear feet, width _____ (ft).
- ☐ Other non-wetland waters: _____ acres.
  - Identify type(s) of waters: _____
- ☐ Wetlands: _____ acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
- ☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
- ☒ Non-wetland waters (i.e., rivers, streams): **19,160** linear feet **8-40** width (ft).
- ☐ Lakes/ponds: _____ acres.
- ☐ Other non-wetland waters: _____ acres. List type of aquatic resource: .
- ☐ Wetlands: _____ acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): _____ linear feet, width _____ (ft).
- ☐ Lakes/ponds: _____ acres.
- ☐ Other non-wetland waters: _____ acres. List type of aquatic resource: _____
- ☐ Wetlands: _____ acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: _____
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: _____
- ☐ Corps navigable waters' study: _____
- ☐ U.S. Geological Survey Hydrologic Atlas: _____
  - ☐ USGS NHD data.

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[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **Lathrop**
☐ USDA Natural Resources Conservation Service Soil Survey.
Citation: _____
☐ National wetlands inventory map(s). Cite name:_____
☐ State/Local wetland inventory map(s): _____
☒ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: _____ (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **2010**
or ☒ Other (Name & Date): **Appendix A (8-9-2010)**
☐ Previous determination(s). File no. and date of response letter: _____
☐ Applicable/supporting case law: _____
☐ Applicable/supporting scientific literature: _____
☐ Other information (please specify): Hydrologic calculations.

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Appendix E:
Regulatory Compliance Overview

REGULATORY COMPLIANCE OVERVIEW

Regulatory permitting for dredge and fill activities involves a compliance framework requiring interaction with federal, state and local agencies, often involving a diverse number of statutes and regulations.

FEDERAL STATUTES AND REGULATIONS - USACE

Clean Water Act Section 404

Pursuant to Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. Regulated activities include but are not limited to, grading, placing of riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material. In general, any activity, which proposes to carry out an activity, which will temporarily or permanently affect areas delineated as waters of the US, including wetlands, typically requires prior authorization from the USACE, pursuant to Section 404 of the Clean Water Act (CWA). Successful applications will put forth projects with a valid purpose, which generally comply with the avoidance, minimization, and mitigation ("no net loss") goals of the USACE.

Federal Jurisdiction over Waters and Wetlands

The USACE will assert jurisdiction over waters that are presently used or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. The definition of "Waters of the U.S." is set forth in the Title 33 Code of Federal Regulations (CFR) 328.3. The term "waters of the United States" means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters, which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; and
    (iii) Which are used or could be used for industrial purpose by industries in interstate commerce.
(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section. (Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States), and
(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

Subsequent to the U.S. Supreme Court decision in *Rapanos, et al v. United States* (2006) the Environmental Protection Agency (EPA) and the USACE (the agencies) issued a joint memorandum (*Clean Water Act Jurisdiction Following Rapanos v. United States*, (June 5, 2007)), which integrates the *Rapanos* standards with the process presented in 33 CFR 328.3(a).

Pursuant to the memorandum, federal jurisdiction will be asserted over the following categories of water bodies:

- (TNWs): TNW, including territorial seas;
- Wetlands adjacent to TNWs;
- (RPWS): Non- navigable tributaries of TNWs with relatively permanent water flow that are flow directly or indirectly to TNWs. "Relatively permanent" means water flowing for at least three months of the year. (Usually, perennial streams and some intermittent streams); and
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs.

In addition, the agencies will assert jurisdiction over the following categories of water bodies only if, based on fact-specific analysis, the water body is determined to have a significant nexus with a TNW:

- (Non-RPWs): Non-navigable tributaries that do not have relatively permanent water flow that flow directly or indirectly into TNWs (Usually ephemeral and some intermittent streams);
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs; and
- Wetlands adjacent to, but not directly abutting RPWs that flow directly or indirectly into TNWs.

"A significant nexus exists if the tributary, in combination with all of its adjacent wetlands has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a TNW."

The agencies will not assert jurisdiction over the following geomorphic features:

- "Swales or erosional features (e.g., gullies small washes characterized by low volume, infrequent or short duration flows)," and
- "Ditches (including roadsides ditches) excavated wholly in and draining only uplands that do not carry relatively permanent water flows."

The agencies now require that all determinations for non-navigable waters, isolated-waters and/or wetlands be evaluated by the USACE and EPA before making a final jurisdictional determination.

In the absence of wetlands, the lateral extent of federal jurisdiction over non-tidal waters of the U.S. is defined by the ordinary high water mark (OHWM). The OHWM is defined in 33 CFR 328.3, as "*that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*."

In June 2001, the USACE South *Pacific* Division issued *Guidelines for Jurisdictional Delineations for Waters of the United States in the Arid Southwest*. The purpose of this document was to aid delineators in assessing the physical characteristics of dry land drainage systems in the Arid West. With respect to jurisdictional determinations, the factors for determining waters of the U.S. include *evaluating* the flow regime geomorphic feature, and general indicators of flow. These methods are consistent with the criteria set forth in 328.3(a) and 328.3(e), but are also subject to guidance set forth in the *Rapanos* guidance, including "significant nexus determinations," as appropriate.

Subject to *Rapanos* limitations (See Appendix B), Federal Jurisdiction will extend to "adjacent" wetlands. "Adjacent" means "bordering *contiguous* or neighboring." According to the USACE *Wetlands Delineation Manual, Technical Report*, (1987) three criteria must be satisfied to classify an area as a jurisdictional wetland:

1. A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation);
2. Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and
3. Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

The USACE has established regional guidance to address specific regional variations in wetlands determinations. These regional guidance documents supplement the 1987 manual. The Interim Regional Supplement for the Arid West was published in December 2006. Similarly Draft guidance for Western Mountains, Valleys and Coast Regions" was published in April 2007. In performing its delineations, MBA applies these supplemental guidance as appropriate.

Limits on USACE Jurisdiction under the Clean Water Act

Beginning with the 2001 US Supreme Court in *Solid Waste Agency of North Cook County v. USACE* (SWANCC) case, the reach of federal jurisdiction over waters has been curtailed. Subsequent to the SWANCC decision, federal jurisdiction will not reach wholly intra-state wetlands, which are not "adjacent" to a jurisdictional stream course. Similarly, the SWANCC decision eliminated the Corps ability to regulate isolated waters based solely on the presence of migratory birds and federally listed species.

Similarly, the 2006 U.S, Supreme Court Decision in *Rapanos v. United States*, 547 U.S. 715 (Rapanos), requires that non-relatively permanent waters (n-RPWs) and their adjacent wetlands have significant chemical, physical and biological nexus to downstream navigable waters. This requirement may limit USACE jurisdiction over some ephemeral and intermittent waters that connect directly or indirectly to downstream navigable waters. Details on "significant nexus" analysis is provided in Appendix B.

Preliminary vs. Approved Jurisdictional Determinations:

In August 2008, the Army Corps issued regulatory Guidance Letter 08-02 (Hereafter, RGL-0802) which provides for the use of "Preliminary Jurisdictional Determination" (PJD) in place of the standard or "Approved Jurisdictional Determination" (AJD). RGL-08-02 alleviates some of the timing and documentation hurdles (and costs), which otherwise would be realized in preparing a "significant nexus" analysis under an AJD. By opting to prepare a PJD the applicant has made an informed decision to assume all features that "could" be jurisdictional are treated as if they "are" jurisdictional. All features treated as jurisdictional, will be so assessed when calculating impacts, no-net loss compliance and in calculating appropriate mitigation. As such, PJDs allow for maximum protection of the environment without the need for establishing "significant nexus" (in essence significant nexus is assumed).

Unlike AJDs, PJDs are not considered final administrative decisions and are therefore not appealable. However, an applicant can always decide to subsequently process an AJD for submittal.

Nationwide Permits v. Individual Permits

Nationwide permits (NWPs) are a type of general permit issued by the Chief of Engineers and are designed to expedite the regulatory process for those types of projects/activities expected to have minimal impacts on jurisdictional areas.

The nationwide permitting program is reauthorized every five years. The current NWP program became effective on March 19, 2007 and includes 49 different nationwide permit categories including "*Linear Transportation Projects*" (NWP 14), "*Residential Developments*" (NWP 29), "*Commercial and Institutional Developments*" (NWP 39) and "*Stormwater Management Facilities*" (NWP 43) among others. Each NWP establishes thresholds, which trigger the need for submitting a pre-construction notification (PCN) to the USACE and which set upper limits to accepted impacts based

on the total acreage and/or linear feet of impacts, which result from project. Exceeding these limits will require processing an Individual Permit (IP), which may involve a significantly longer processing time.

Primary General Conditions (GC) of 404 Permits

GC # 4: Migratory Bird Breeding Areas - Compliance with the Migratory Bird Treaty Act

The MBTA protects all common wild birds found in the US except the house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, and wild turkey. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs.

> The primary responsibility for complying with the Migratory Bird Treaty Act (MBTA) is that of the project proponent (permittee) and is independent of Department of the Army permitting processes (404). It should be noted, however, that the nationwide permitting program (General Condition 4) does require that breeding areas for migratory birds in waters of the United States must be avoided to the maximum extent practicable.

GC # 17: Compliance with Federal Endangered Species Act

In administering the Section 404 permitting program, the USACE is required to abide by Section 7(a)(2) of the Federal Endangered Species Act (ESA), which requires federal agencies to consult with the United States Fish and Wildlife Service (USFWS) "to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat." As a result, the presence of federally listed species must be determined prior to submittal of the Section 404 application. In the nationwide permitting program, compliance with the ESA is set forth in general condition (GC 17)

The USFWS *administers* the Federal Endangered Species Act. The ESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The ESA defines as "endangered" any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A "threatened" species is a species that is likely to become *endangered*. A "proposed" species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

Section 9 of the ESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Take can include disturbance to habitats used by a threatened or endangered species during any portion of its life history. The presence of any federally threatened or endangered species in a

project area generally imposes severe constraints on development, particularly if development would result in take of the species or its habitat. Under the regulations of the ESA, the USFWS may authorize take when it is incidental to, but not the purpose of, an otherwise lawful act.

GC # 18: Compliance with National Historic Preservation Act

In processing a Section 404 permit, the USACE is required to comply with section 106 of the National Historic Preservation Act (NHPA). Section 106 consultation is triggered when historic or archaeological *sites* are potentially affected by the proposed project. In the nationwide permitting program, compliance with the NHPA is set forth in general condition (GC 18). The USACE will initiate section 106 consultation with the appropriate state agency (SHPO in California) with federal oversight (ACHP). The process usually requires one month from the date the USACE triggers consultation with the state agency.

GC # 21: Compliance with Section 401 of the Clean Water Act

In connection with notification to the USACE under Section 404 of the Clean Water Act (CWA), pursuant to 33 CFR Part 330, a written request for Section 401 water quality certification must be submitted to the RWQCB to ensure that no degradation of water quality will result from the proposed project. Subject to CWA section 401(a)(1), the USACE cannot issue a section 404 dredge/fill permit until such time as a CWA section 401 Water Quality Certification (WQC) has been approved by the applicable RWQCB. In the nationwide permitting program, compliance with the Section 401 is set forth in general condition (GC 21).

In order to meet the requirements of the RWQCB for issuance of a 401-water quality certification, the project proponent must provide assurances that the project will not adversely affect the water quality of receiving water bodies. A written request for 401 water quality certification must be prepared and submitted to the RWQCB for review. The request will include a detailed project description, a description of *proposed* impacts, identification and discussion of beneficial uses of affected receiving waters (as described within the appropriate Basin Plan), a water quality plan identifying project-specific Best Management practices (BMPs), discussion of other approvals and certifications being obtained, a conceptual restoration plan, and a completed notification form.

CEQA Compliance: Pursuant to Title 23, Section 3856(f) of the California Code of Regulations (CCR), the *Regional* Water Quality Control Board (RWQCB) may not issue a Clean Water Act (Section 401) Water Quality Certification (WQC) for a project before being provided with (and having had ample time to review) a copy of the final CEQA documentation prepared for the project. Upon formal request for certification, water quality certification should be forthcoming within 90-120 days of completion of the CEQA process.

Fee Structure: Subject to California Code of Regulations (CCR), Title 23, §3833, a section 401 *application* must be accompanied by an initial deposit of not less than $500.00. If the initial deposit

does not cover the agency's application review costs, the RWQCB may require an additional (one-time) amount using the calculus set forth in section 2200(e), Title 23, of the California Code of Regulations.

GC # 22: Compliance with the Coastal Zone Management Act

In administering the Section 404 permitting program, the USACE is required to abide by Section 307(c)(1) of the Coastal Zone Management Act (CZMA). This requirement is set forth in General Condition No. 22 of *the* NWP (2007) program and detailed in 33 CFR 330.4(d). This condition requires the USACE to provide a consistency determination and receive state agreement prior to the authorization of activities affecting land, water, or natural resources within the coastal zone.

The California "Coastal zone" means that land and water area within the State extending seaward to the state's outer limit of jurisdiction, including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas it *extends* inland to the first major ridgeline paralleling the sea or five miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards. The coastal zone does not include the area of jurisdiction of the San Francisco Bay Conservation and Development Commission, established pursuant to Title 7.2 (commencing with Section 66600) of the Government Code, nor any area contiguous thereto, *including* any river, stream, tributary, creek, or flood control or drainage channel flowing into such area.

STATE STATUES AND REGULATIONS - RWQCB

The State of California has concurrent jurisdiction with the Federal government over §401 Water Quality Certification over jurisdictional waters and wetlands of the United States. Where isolated waters and wetlands (not subject to federal jurisdiction) are involved, the State will exert independent jurisdiction via the Porter Cologne Water Quality Act.

Porter-Cologne Water Quality Act

Section 13260(a) of the California Water Code ("Water Code" or "Porter Cologne") requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the waters of the State, file a report of waste discharge (ROWD). The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State (Defined in Water Code §13050(e)).

Typically, the State of California relies upon its authority under section 401 of the Federal Clean Water Act (CWA (33 U.S.C. §1341) to regulate discharges of dredged or fill material to California waters that are also within the jurisdiction of the USACE. Given the water quality certification (WQC) process employed under section 401, waste discharge requirements under Porter Cologne are

typically waived for those projects requiring a water quality certification. In 2001 the U.S. Supreme decision in *Sold Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* , 531 U.S. 159 (2001) ("*SWANCC*") invalidated the Army Corp's use of the "Migratory Bird Rule" to establish federal jurisdiction over isolated waters. Since 2001, the State of California has reasserted its authority under state law to assert jurisdiction over isolated waters for water quality purposes by requiring a ROWD.

Regulation of Isolated Waters

Dredging, filling, or excavation of "isolated" waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of the State Porter Cologne Water Quality Act (Water Code).

Scope of Regulation: With respect to isolated waters, discharges and/or dredging of wetlands, active channels or beds of waterbodies are regulated. Discharges to riparian or areas in proximity to a waterbody are regulated when such activity will directly or indirectly result a change to water quality. Such changes may include discharge of stormwater pollutants and runoff; change in the nature of vegetation that could affect water quality (e.g., affecting pollutant removal, stream shading or bank stability); or change to the hydrological or geomorphic characteristics of the waterbody.

Application of Regulation: Whenever the USACE issues a jurisdictional disclaimer (concurs with a finding of no federal jurisdiction), the respective RWQCB is notified of the disclaimer. Typically, the RWQCB will issue a letter notifying the project proponent that a ROWD must be filed. A ROWD must be submitted in one of two forms, depending on the anticipated impacts.

(1) General Waste Discharge Requirement (GWDR): The GWDR program is substantively set forth in SWRCB Water Quality Order No. 2004-0004-DWQ. GWDRs are generally prescribed for a category of discharges (either temporary or permanent) involving earth, rock, or similar solid materials if the discharge will not be greater than 0.2 acres and 400 linear feet (for fill or excavation) or 50 cubic yards (for dredging). The type of projects that may be covered under these General WDRs include land development, detention basins, disposal of dredged material, bank stabilization, revetment, channelization, and other similar projects. GWDRs do not apply to discharges that adversely impact, either directly or through habitat modification, any plants or animals identified as candidate, sensitive, or special status species in local or regional plans, or by the CDFG (including NCCPs), or USFWS (including HCPs). Similarly, GWDRs do not apply to discharges impacting significant historical, archaeological or paleontological resources.

Requirements: The GWDR typically requires submittal of the following items: (1) A Notice of Intent (NOI), (2) Any CEQA documents that have been prepared for the project, (3) A fee pursuant to Title 23, section 2200 of the CCR, (4) A Mitigation Plan demonstrating that the discharger will sequentially avoid, minimize, and compensate for the adverse impacts to the affected water bodies, and beneficial uses (as set forth in the applicable Basin Plan), and (5) Any other relevant information

requested by the SWRCB or RWQCB. A copy of the application must be submitted to both the applicable RWQCB and to the SWANC-ROWD, Water Quality Certification Unit in Sacramento.

Timing: Pursuant to the requirements of the California Permit Streamlining Act, RWQCB has 30 days to deem the application complete. Upon receipt of a complete submittal, the RWQCB has 45 days in which to issue a Notice of Applicability (NOA) (authorizing the activity) or a Notice of Exclusion (NOE) (denying authorization. The discharge activity is operationally authorized if no NOE is issued within the 45-day evaluation period, provided that the proposed activity is not a prohibited activity.

(2) Individual Waste Discharge Requirements (IWDR): Projects not qualifying for the GWDRs will need to satisfy individual waste discharge requirements, typically requiring submittal of 401 Water Quality Certification forms and supporting documentation as set forth by the respective RWQCB. Such submittals are subject to fees as set forth in California Code of Regulations Title 23 Section 2200(a)(2). Pursuant to the Water Code the project proponent is required to file with the appropriate Regional Water Quality Control Board (RWQCB) a Report of Waste Discharge describing the proposed discharge at least 140 days before it occurs (Water Code §§13260, 13264).

STATE STATUTES AND REGULATIONS - CDFG

Section 1600/1602 of the California Fish and Game Code

In the public interest of protection and conservation of fish and wildlife resources of the state (§1600), Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify the CDFG before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. CDFG's jurisdiction includes ephemeral, intermittent, and perennial watercourses, including dry washes, characterized by:

1 The presence of hydrophytic vegetation.
2. The location of definable bed and banks.
3. The presence of existing fish or wildlife resources.

Furthermore, CDFG jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function as part of the riparian system. Historic court cases have further extended CDFG jurisdiction to include watercourses that seemingly disappear, but re-emerge elsewhere. Under the CDFG definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional. However, CDFG does not regulate isolated wetlands; that is, those that are not associated with a river, stream, or lake.

CDFG Regulated Activities

The CDFG regulates activities that involve diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. When a project requires such activities, a Section 1602 Streambed Alteration Notification will be prepared and submitted to the CDFG for review. The request will include a detailed project description, a description of proposed impacts, a conceptual mitigation plan, and completed notification forms. Typically, CDFG will be able to complete the agreement within 60-90 days of the completion of the CEQA process.

CEQA Compliance: It should be noted that CDFG must also comply with the California Environmental Quality Act (CEQA) (Pub. Resources Code, §21000, et seq.) before it may issue a *final* Lake or Streambed Alteration Agreement. Issuance of a final Lake or Streambed Alteration Agreement occurs after the Department receives a *draft* Lake or Streambed Alteration Agreement from the applicant and the Department signs it. In many instances, the Department will receive a signed draft Lake or Streambed Alteration Agreement from an applicant before the lead agency has fully complied with CEQA. In those instances, the Department must wait for the lead agency to fully comply with CEQA before it may sign the draft Lake or Streambed Alteration Agreement, thereby making it final.

Fee Structure: Pursuant to California Code of Regulations (CCR), Title 14 §699.3, CDFG assesses a fee to cover the cost of reviewing §1602 applications. The fee calculus is based on the sum cost of the proposed activities within the streambed or riparian community.

Sensitive Plant and Wildlife Species

Sensitive species are native species that have been accorded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

California Endangered Species Act

The CDFG administers the California Endangered Species Act (CESA). The State of California considers an "endangered" species one whose prospects of survival and reproduction are in immediate jeopardy. A "threatened" species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A "rare" species is one present in such small numbers throughout its portion of its known geographic range that it may become endangered if its present environment worsens. The rare species designation applies to California native plants. State threatened and endangered species are fully protected against take, as defined above. The term "species of special concern" is an informal designation used by CDFG for some declining wildlife species that are not

state candidates for listing. This designation does not provide legal protection under CESA, but signifies that these species are recognized as sensitive by CDFG.

California Native Plant Society

The CNPS is a California resource conservation organization that has developed and inventory of California's sensitive plant species (Tibor 2001). This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered sensitive by the state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of sensitivity is based on the number and size of remaining occurrences as well as recognized threats.

Section 3503 and 3511 of the California Fish and Game Code

The CDFG administers the California Fish and Game Code. Code 3503 makes it illegal to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Code 3503.5 further protects all birds in the orders *Falconiformes* and *Strigiformes* (birds of prey, such as hawks and owls) and their eggs and nests from any form of take. Section 3511 of the Code lists fully protected bird species, where the CDFG is unable to authorize the issuance of permits or licenses to take these species.

Appendix F: Jurisdictional Wetlands and Significant Nexus Evaluation Criteria

CRITERIA FOR WETLAND DETERMINATIONS

USACE (DEFINITION OF WETLANDS)

As defined in 33 CFR part 328.3(a)(7) and as established by current case law, the USACE will currently assert jurisdiction over wetlands adjacent to waters of the U.S., except for those wetlands adjacent to other wetlands.

The term "wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support a prevalence or vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR part 328.3(b)).

Typically, the term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent (33 CFR part 328.3(c)). Similarly, the wetland must be adjacent to either a navigable in-fact water way or tributary thereof. Where "adjacency" cannot be established, the wetlands will be determined to be an "isolated" non-jurisdictional feature unless an independent nexus to interstate or foreign commerce can be established pursuant to 33 CFR part 328.3(a)(3). (Also, see SWANCC v. US, 2001).

Based on the standards established in *Rapanos v. U.S.*, the USACE will not assert jurisdiction over wetlands where: (1) the wetlands are adjacent to non-navigable tributaries that lack relatively permanent flows, or (2) wetlands are adjacent to but not abutting non-navigable tributaries with relatively permanent water, unless in both cases the relevant portion (reach) of the drainage, together with all of its wetlands, have a significant nexus to a TNW.

According to the USACE *Wetlands Delineation Manual, Technical Report* (1987), three criteria must be satisfied to classify an area as a jurisdictional wetland:

1. ***Hydrophytic Vegetation***: A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation);
2. ***Hydric Soils***: Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils), and
3. ***Wetland Hydrology***: Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

The USACE has established regional guidance to address specific regional variations in wetlands determinations. These regional guidance documents supplement the 1987 manual, The Interim Regional Supplement for the Arid West, which was published in December 2006. Similarly, Draft guidance for Western Mountains, Valleys and Coast Regions" was published in April 2007. In performing its delineations, MBA applies this supplemental guidance as appropriate.

As established in both the USACE 87 Manual and the "Arid West" regional guidance, the following criteria apply.

Hydrophytic Vegetation

Hydrophytic vegetation is defined as plant life growing in water, soil, or substrate that is at least periodically deficient in oxygen because of excessive water content. The USFWS has published the *National List of Vascular Plant Species That Occur in Wetlands*, (1996 National Summary, hereafter NLVPS) and divided plants into 5 groups based on their "wetland indicator status:"

Obligate wetland plants (OBL) that occur almost always in wetlands under natural conditions;
Facultative wetland plants (FACW) that usually occur in wetlands but occasionally are found in upland areas;
Facultative plants (FAC) that are equally likely to occur in wetlands as well as upland;
Facultative upland plants (FACU) that usually occur in upland areas but occasionally are found in wetlands; and
Upland plants (UPL) that occur almost always in upland areas under natural conditions.

Plus (+) and minus (-) values, used in identifying indicator status in the NLVPS are not applied when evaluating plants in the arid west region. In the arid west, an area is deemed to have hydrophytic vegetation when it (1) passes the dominance test; (2) has a prevalence index ≤ 3; (3) morphological adaptations are present; or (4) the area is a "problem area." (See *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: *Arid West Region*, December 2006.)

Dominance Test: An area has hydrophytic vegetation when, under normal circumstances, more than 50 percent of the composition of dominant plant species (using the 50/20 rule) from all strata are obligate wetland (OBL), facultative wetland (FACW) and/or facultative species (FAC). If the plant community passes the dominance test, then the vegetation is hydrophytic and no further vegetation analysis is required. If the plant community fails the dominance test, and indicators of hydric soil and/or wetland are absent then hydrophytic vegetation is absent unless the site meets requirements for a problematic wetland situation.

Prevalence Test: In areas failing the dominance test yet having indicators of hydric soil and wetland hydrology, the vegetation must be re-evaluated using the "prevalence index" (PI). The prevalence index takes into account all plant species in the community, not just a few dominants. The index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is a given a numeric code (OBL =1, FACW =2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (percent cover). The sum of the weighted indicator values are then divided by the sum of the percent cover values for each indicator type. Where the PI value is ≤ 3, the area is considered positive for hydrophytic vegetation. Generally, the index is a more comprehensive analysis of the hydrophytic status of the community than one based on just a few dominant species. The index is particularly useful: (1) in communities only one or two dominants;

(2) in highly diverse communities where many species may be present at roughly equal coverage; and (3) when strata differ greatly in total plant cover. The prevalence index is used on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.

Morphological Adaptations: In areas failing both the dominance test and prevalence test, yet having indicators of hydric soil and wetland hydrology, hydrophytic vegetation will still be deemed present when the morphological adaptations are present. In the arid west, the most common morphological adaptations are adventitious roots and shallow root systems developed on or near the soil surface on FACU species. If more than 50 percent of the FACU species have morphological adaptations, then these species are classified as FAC species and the dominance test and/or prevalence index are recalculated. The vegetation is hydrophytic if either test is positive.

Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. "Long enough" generally means 1 week during the growing season and soils that are saturated for this period usually support hydrophytic vegetation. The criteria for establishing the presence of hydric soils vary among different types of soils and between normal circumstances, disturbed areas, and problem areas. Due to their wetness during the growing season, hydric soils usually develop certain morphological properties that can be readily observed in the field. Prolonged anaerobic soil conditions typically lower the soil redox potential, causing a chemical reduction of some soil components, mainly iron oxides and manganese oxides. This reduction is typically reflected by the presence of iron or manganese concretions, gleying, or mottling. Other field indicators of hydric soils include the presence of sulfidic material, an aquic or peraquic moisture regime, or a spodic horizon. (All organic soils, with the exception of Folists, are classified as hydric soils.)

Wetland Hydrology

Wetland hydrology is permanent or periodic inundation, or soil saturation for a significant period during the growing season. Numerous factors influence the wetness of an area, including precipitation, stratigraphy, topography, soil permeability, and plant cover. At certain times of the year in most wetlands, and in certain types of wetlands at most times, wetland hydrology is quite evident, since surface water or saturated soils may be observed. Yet, in many instances, especially along the uppermost boundary of wetlands, hydrology is not readily apparent. Despite this limitation, hydrologic indicators can be useful for confirming that a site with hydrophytic vegetation and hydric soils still exhibits wetland hydrology. While hydrologic indicators are sometimes diagnostic of the presence of wetlands, they are generally either operationally impracticable (e.g. in the case of recorded data) or technically inaccurate (e.g., in the case of some field indicators) for delineating wetland boundaries.

The following hydrologic indicators, while not necessarily indicative of hydrologic events during the growing season or in wetlands alone, do provide evidence that inundation or soil saturation has occurred at some time: visual observation of inundation, visual observation of soil saturation, oxidized channels (rhizospheres) associated with living roots and rhizomes, water marks, drift lines, waterborne sediment deposits, water-stained leaves, surface scoured areas, morphological plant adaptations, and hydric soil characteristics.

Problem Areas and Atypical Situations

In the arid west, some wetlands may periodically lack indicators of hydrophytic vegetation, hydric soils or wetland hydrology due to normal (natural) seasonal or annual variability. Similarly, indicators in some areas may be affected by atypical situations brought about by recent human activities or unusual natural events. The Arid West Regional Guidance sets forth a number of procedures to identify and analyze problems areas. Examples of problem areas and atypical situations may include:

Problematic Vegetation:

- *Temporal Shifts in Vegetation*: plant communities in playas, venal pools, seepas, and springs change in response to seasonal climatic fluctuations. These changes may result from:
  Seasonal shifts in plant communities between normal wet/dry season
  Drought Conditions lasting more than one growing season.
- *Sparse and Patchy Vegetation*: A seasonal pond must have at least 5 percent plant cover to be considered vegetated. To be considered jurisdictional, unvegetated areas may be considered as other waters of the U.S. if they exhibit Ordinary High Water (OHW) indicators as set forth in 33 CFR 328.3
- *Riparian Areas*: Where there is high variability in wetland vegetation indicator status between the different strata. (Usually the tree stratum has wetter indicator status than other strata.)
- *Areas Affected by Grazing*:
  Managed Plant Communities: horticulture, tilling/disking.
- *Areas Affected by Fires, Floods and Other Natural Disturbances*:
  Vigor and Stress Response to Wetland Conditions: horticulture is either robust or impeded by hydric soils, and/or wetland hydrology.

Problematic Hydric Soils:

- *Moderately to Very Strong Alkaline Soils*: Redox concentrations and depletions are not always evident in soils with pH of 7.9 or higher.
- *Volcanic Ash*: Soils of volcanic origin are high in silica content and low in redoximorphic minerals such as iron, manganese, and sulfur.

- *Vegetated Sand and Gravel Bars within Flood Plains*: Flood plains may lack hydric soil indicators because seasonal flooding deposits new layers of soil material or the deposited material may lack redoximorphic minerals.
- *Recently Developed Wetlands*: may include mitigation sites, wetland management areas, unintentionally produced wetlands (flood irrigation, leaking water pipes, etc.).
- *Seasonally Ponded Soils*: depressional wetlands, usually with perched systems above a restrictive soil layer (hardpan or clay) where the saturation depth or saline conditions prohibit hydric soil indicators.
- *Soils with Relict or Induced hydric Soil Indicators*: In some areas, redoximorphic features in hydric soils were formed in the recent or distant past when conditions were substantially wetter than at present. Hydric soil indicators may persist in low land areas which were historically flooded (such as in California's Central Valley) even though the area has been drained for agricultural purposes. Alternatively, hydric soils indicators in upland areas may have formed historically from flood irrigation or like agricultural activities that no longer persist.

Problematic Wetland Hydrology:

- *Site Visits During the Dry Season*: Hydrophytic vegetation may be absent or diminished during the dry-season (when evapotranspiration exceeds precipitation). When possible the site should be visited (or re-visited) during the normal wet season.
- *Periods with Below Normal Rainfall*: Rainfall in the 3-month period prior to the site visit should be compared to historical averages from the National Water and Climate Center (NRCS). Rainfall should be between the high and low 30 percent probability values.
- *Drought Years*: Areas subject to drought conditions particularly lasting several years may affect wetland hydrology indicators. The ***Palmer Drought Severity Index (PDSI)***—known operationally as the *Palmer Drought Index (PDI)*)—attempts to measure the duration and intensity of the long-term drought-inducing circulation patterns. Long-term drought is cumulative, so the intensity of drought during the current month is dependent on the current weather patterns plus the cumulative patterns of previous months. Since weather patterns can change almost literally overnight from a long-term drought pattern to a long-term wet pattern, the PDSI (PDI) can respond fairly rapidly. PDSI values range between -6 and +6 with negative values indicating dry periods and positive values indicating wet periods:

  (-4 to -6) - Extreme Drought;
  (-3) - Severe Drought;
  (-2) - Moderate Drought; and
  (-1) - Mild Drought.

- *Years with Unusually Low Winter Snowpack*: the hydrology of areas with water-sheds in adjacent mountain regions may be affected by annual variability in the liquid equivalent of the snow pack.
- *Reference Sites*: If indicators of hydric soil and hydrophytic vegetation are present on a site that lacks wetland hydrology indicators, the site may be considered to be a wetland if the landscape setting, topography, soils, and vegetation are substantially the same as those on nearby reference areas.
- *Hydrology Tools*: A collection of methods can be used to determine whether wetland hydrology is present on a potential wetland site that lacks indicators due to disturbances or other reasons (particularly in agricultural areas).
- *Long-term Hydrological Monitoring*: Areas may be monitored over long periods of time.

CALIFORNIA DEPARTMENT OF FISH & GAME: (DEFINITION OF WETLANDS)

The California Wildlife Protection Act as codified in the Fish & Game code defines "wetlands" as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools." (Fish & Game Code §2785(g))

COASTAL ZONE: (DEFINITION OF WETLANDS)

Jurisdictional assessments in the California coastal zone must also evaluate potential wetland areas using the criteria established in the California Coastal Act and set forth in the California Code of Regulations.

The California "Coastal zone" means that land and water area within the State extending seaward to the state's outer limit of jurisdiction, including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or five miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards. The coastal zone does not include the area of jurisdiction of the San Francisco Bay Conservation and Development Commission, established pursuant to Title 7.2 (commencing with Section 66600) of the Government Code, nor any area contiguous thereto, including any river, stream, tributary, creek, or flood control or drainage channel flowing into such area.

The California Coast Act section 30121 defines the term "wetland" as, "Lands within the coastal zone which be covered periodically or permanently with shallow water and includes saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mud flats, and fens."

The Coastal Act is administered in the State by the California Coastal Commission (CCC). Coastal Commission regulations (California Code of Regulations Title 14 [14 CCR]) establish a "one parameter definition" that only requires evidence of a single parameter to establish wetland conditions:

> *Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentration of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some during each year and their location within, or adjacent to vegetated wetland or deepwater habitats.* (14 CCR 13577)

The Commission's one parameter definition is similar to the USFWS wetlands classification system, which states that wetlands must have one or more of the following three attributes: (1) at least periodically the land supports predominantly hydrophytes; (2) the substrate is predominantly un-drained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION JURISDICTION (DEFINITION OF WETLANDS)

Within the area of San Francisco Bay Conservation and Development Commission (BCDC) CCC jurisdictional criteria does not apply, however USACE wetland determination criteria will apply.

It is also noted that the primary State law governing the BCDC, the McAteer-Petris Act, does not define wetlands but does outline the BCDC's jurisdiction respective of wetlands.

> *Managed wetlands consisting of all areas which have been diked off from the bay and have been maintained during the three years immediately preceding the effective date of the amendment of this section during the 1969 Regular Session of the Legislature as a duck hunting preserve, game refuge or for agriculture*. (Gov. Code §66610(b))

USACE - SIGNIFICANT NEXUS DETERMINATION:

Once it has been determined that a resource exhibits surface connectivity to downstream jurisdictional (navigable) waters the feature may then need to be assessed under the "Significant Nexus" rule. (Also see "*Rapanos*" in Appendix A).

A significant nexus determination is required when the following water bodies are present: (1) Non-navigable tributaries that do not have relatively permanent water flow that flow directly or indirectly into TNWs (usually ephemeral and some intermittent streams); (2) Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs; or (3) Wetlands adjacent to, but not directly abutting RPWs that flow directly or indirectly into TNWs.

The determination begins by first identifying the relative reach of the applicable tributary. With respect to "significant nexus determinations," the "relevant reach" will include all tributary waters of the same order. Typically this will include the tributary and all adjacent wetlands reaching downstream from the project site to the confluence with the next tributary, and upstream to any a similar confluence.

To have a significant nexus a tributary and its adjacent wetlands must have more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. A significant nexus determination requires evaluation of hydrological and ecological factors, which may contribute to the maintenance of water quality, aquatic life, commerce, navigation, recreation, and public health in the TNW.

- Hydrological Factors:
  - Volume, duration, and frequency of flow: including consideration of certain characteristics of the tributary, including historic records of flow, flood predictions, gauge data and personal observations (OHWM, Shelving, water staining, sediment sorting and scouring);
  - Proximity to the TNW: If a tributary is too far from the TNW it's remoteness is more likely to make the impact on the TNW speculative;
  - Contextual hydrological factors: including (1) size of the watershed, (2) average annual rainfall, and (3) average annual snow pack, and
  - The presence of tributary or wetland within the flood plain: It should be noted, however that a significant nexus determination cannot be based solely on presence of the water body within or outside the flood plain.

- Ecological Factors:
  - The ability of the tributary and its adjacent wetlands (if any) to carry pollutants and flood waters to TNW;

The Ability of the tributary and its adjacent wetlands (if any) to provide aquatic habitat that supports biota of a TNW;

The ability of adjacent wetlands to trap and filter pollutants or store flood water, and

The ability to maintain water quality.

Appendix G:
Glossary of Terms

GLOSSARY OF TERMS

Term	Source	Page	Definition
Abutting	6	69	Wetlands that are not separated from the tributary by an upland feature such as a berm or dike.
Adjacent	7	N/A	Bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."
Aerial Miles	6	53	The straight line (linear) distance between water bodies.
Aggradation	10	69	An increase in the channel bed elevation through deposition of sediment.
Arroyo	10	69	Entrenched ephemeral streams with vertical walls that form in desert environments.
Assemblage	10	69	A collection of individual plant species.
Avulsion	10	69	The rapid diversion of flow from one channel into another due to blockage of the channel by sediment or debris.
Base flow	10		In hydrologic terms, stream flow which results from precipitation that infiltrates into the soil and eventually moves through the soil to the stream channel. This is also referred to as ground water flow, or dry-weather flow.
Best Management Practices (BMPs)	4	11196	Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.
Calcrete	10	69	Conglomerate consisting of surficial sand and gravel cemented into a hard mass by calcium carbonate.
Caliche rubble	10	69	Fragments of a sedimentary rock formed by evaporation and precipitation of calcite ($CaCO_3$) in soil, sediments, or preexisting rock.
Clean Water Act (CWA) of 1972	N/A	N/A	Also known as the Federal Water Pollution Control Act (FWPCA) 33U.S.C.A §§1251 to 1387 (alternatively cited as §§101 - 607). The primary goal as defined in §1251(a) is "*to restore and maintain the chemical, physical, and biological integrity of the Nation's waters*." Jurisdiction to regulate "waters of the United States," vested under this Act include: §303 (Water Quality Standards and implementation Plans), §311 (Spill Program and *Oil Pollution Act*), §401 (State Water Quality Certification), §402 (National Pollutant Discharge Elimination System - NPDES), §404 (Permits for dredge or fill material).
Clean Water Act (CWA) §303	N/A	N/A	Section 303 Water Quality Standards Program: Under this program, State and authorized Indian Tribes establish water quality standards for navigable waters to "*protect the public health or welfare*" and "*enhance the quality of water*," "*taking*

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Clean Water Act (CWA) §303 (cont.)	N/A	N/A	*into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agriculture, industrial, and other purposes, and also taking into consideration their use and value for navigation.*"
Clean Water Act (CWA) §311	N/A	N/A	Section 311 Spill Program and the Oil Production Act (OPA): Under this program, the CWA addresses pollution from both oil and hazardous substance releases. Together with the Oil Pollution Act, it provides EPA and the U.S. Coast Guard with the authority to establish a program for preventing, preparing for, and responding to, spills that occur in navigable waters of the United States.
Clean Water Act (CWA) §401	N/A	N/A	Section 401 State Water-Quality Certification: Provides that no Federal permit or license for activities that might result in a discharge to navigable waters may be issued unless a CWA Section 401 water quality certification is obtained from or waived by States or authorized Tribes.
Clean Water Act (CWA) §402	N/A	N/A	Section 402 National Pollutant Discharge Elimination Program (NPDES): This program established a permitting system to regulate point source discharges of pollutants (other than dredged or fill material) into waters of the United States.
Clean Water Act (CWA) §404	N/A	N/A	Section 404 Dredged and Fill Material Permit Program: This program established a permitting system to regulate discharges of dredged or fill material into waters of the United States.
Clonal Species	10	69	A group of genetically identical individuals growing in a given location, all originating vegetatively (not sexually) from a single ancestor
Compensatory Mitigation	4	11196	The restoration, establishment (creation), enhancement, or reservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved.
Currently Serviceable	4	11196	Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
Debris Flow	10	69	A moving mass of rock fragments, soil, and mud where more than 50 percent of the particles are larger than sand-sized.
Desert pavement	10	69	Tightly interlocking gravel at the surface formed after years of surface exposure in the absence of active streamflow over the surface
Desert varnish	10	69	A thin, dark, shiny film, composed of iron oxide with traces of manganese oxide and silica, formed on the surface of pebbles, boulders, and rock outcrops in desert regions after long exposure.
Discharge	4	11196	The term "discharge'' means any discharge of dredged or fill material and any activity that causes or results in such a discharge.

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Diurnal Tide Level	9	N/A	The arithmetic mean of mean higher high water and mean lower low water.
Divide	10	69	High ground that forms the boundary of a watershed.
Drift	10	70	Organic debris oriented to flow direction(s) (larger than small twigs).
Effective discharge	10	70	Discharge that is capable of carrying a large proportion of sediment over time.
Enhancement	4	11196	The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
Ephemeral Stream	4	11196	An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
Establishment (Creation)	4	11196	The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.
Facultative Plants (FAC)	1	14	Plants with a similar likelihood (estimated probability of 33 percent to 67 percent) of occurring in both wetlands and non-wetlands.
Facultative Wetland Plants (FACW)	1	14	Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in non-wetlands.
Facultative Upland Plants (FACU)	1	14	Plants that occur sometimes (estimated probability 1 percent to <33 percent) in wetlands, but occur more often (estimated probability >67 percent to 99 percent) in non-wetlands.
Flashy discharge pattern	10	70	Periods of no flow or low-magnitude, high-frequency events separated by short-duration, high-magnitude, low-frequency events.
Floodplain	10	70	That portion of a drainage basin (see watershed), adjacent to the channel, that is covered by sediments deposited during overbank flood flow.
Great Diurnal Range (GT)	9	N/A	The difference in height between mean higher high water and mean lower low water.
Greenwich High Water Interval (HWI)	9	N/A	The average interval (in hours) between the moon's transit over the Greenwich meridian and the following high water at a location.

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Greenwich Low Water Interval (LWI)	9	N/A	The average interval (in hours) between the moon's transit over the Greenwich meridian and the following low water at a location.
Headcut	10	70	An abrupt vertical drop in the bed of a stream channel that is an active erosion feature.
Herbaceous	10	70	Pertaining to plants with little or no woody tissue.
High tide line (HTL)	7	N/A	The term "high tide line" means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.
Historic Property	4	11196	Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the National Register criteria (36 CFR part 60).
Hydraulic parameters	10	70	Slope, roughness, channel geometry, discharge, velocity, turbulence, fluid properties, sediment size, etc.
Hydraulic roughness	10	70	Channel boundary characteristic contributing to energy losses, commonly described by Manning's roughness coefficient (n).
Hydric soil	10	70	A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.
Hydrological Units	8	1-3	As prescribed by the USGS, refers to the four levels of subdivisions, used for the collection and organization of hydrological data. The hierarchy of hydrological units include (1) Regions, (2) Subregions, (3) Accounting Units, and (4) Cataloging Units. The identifying codes associated with these units are "hydrological unit codes."
Hydrological Units - "Regions"	8	3	The first level of USGS hydrological classification, which divides the Nation into 21 Major geographic areas. These geographic areas (hydrologic areas based on surface topography) contain either the drainage area of a major river, or the combined drainage areas of a series of rivers. Most of

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
			California is located within region "18." Notable exceptions include the Tahoe basin ("Great Basin Region 16") and the Colorado River ("Lower Colorado Region 15"). All smaller hydrological units with the region begin with the region number (18).
Hydrological Units - "Subregions"	8	3	The second level of USGS hydrological classification, divides the 21 regions into 222 subregions (nationally). A subregion includes the area drained by a river system a reach of a river and its tributaries in that reach, a closed basin(s), or a group of streams forming a coastal drainage area. Within Region 18, the state of California includes 10 sub-regions.
Hydrological Units - "Accounting Units"	8	3	The third level of USGS hydrological classification, subdivides many of the subregions in accounting units. These 352 hydrologic accounting units nest within, or are equivalent to, the subregions. The accounting units are used by the Geological Survey for designing and managing the National Water Data Network. Within Region 18, the state of California includes 16 Accounting Units.
Hydrological Units - "Cataloging Units"	8	3	The fourth level of USGS hydrological classification is the cataloging unit, the smallest element in the hierarchy of hydrologic units. A cataloging unit is a geographic area representing part of all of a surface drainage basin, a combination of drainage basins, or a distinct hydrological feature. There are 2,150 cataloging units in the United States. Within Region 18, the state of California includes 135 cataloging units.
Hydrologic regime	10	70	Characteristic pattern of precipitation, runoff, infiltration, and evaporation affecting a water body.
Hydromesic	10	70	Physiographic class; soil retains water for long periods of time, will drain.
Hyper-concentrated flow	10	71	Suspension flow with large suspended sediment concentrations (i.e., greater than 1 to 3 percent).
Independent utility	4	11196	A test to determine what constitutes a single and complete project in the USACE regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.
Intermittent stream	4	11196	An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Litter	10	71	Organic debris oriented to flow direction(s) (small twigs and leaves).
Loss of Waters of the United States	4	11196	Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a water body, or change the use of a water body. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an Nationwide Permit (NWP); it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.
Mean Diurnal High Water Inequality (DLQ)	9	N/A	The difference in height of the two low waters of each tidal day for a mixed or semidiurnal tide.
Mean Diurnal High Water Inequality (DHQ)	9	N/A	The difference in height of the two high waters of each tidal day for a mixed or semidiurnal tide.
Mean Lower Low Water (MLLW)	9	N/A	The average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent datum of the National Tidal Datum Epoch.
Mean Low Water (MLW)	9	N/A	The average of all the low water heights observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent data of the National Tidal Datum Epoch.
Mean Higher High Water (MHHW)	9	N/A	The average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent data of the National Tidal Datum Epoch.
Mean High Water (MHW)	9	N/A	The average of all the high water heights observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent data of the National Tidal Datum Epoch.

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Mean Range of Tide (MN)	9	N/A	The difference in height between mean high water and mean low water.
Mean Sea Level (MSL)	9	N/A	The arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; e.g. monthly mean sea level and yearly mean sea level.
Mean Tide Level (MTL)	9	N/A	The arithmetic mean of mean high water and mean low water.
Non-tidal wetland	4	11196	A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).
National Tidal Datum Epoch	9	N/A	The specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values (e.g., mean lower low water, etc.) for tidal data. It is necessary for standardization because of periodic and apparent secular trends in sea level. The present NTDE is 1983 through 2001 and is actively considered for revision every 20-25 years. Tidal data in certain regions with anomalous sea level changes (Alaska, Gulf of Mexico) are calculated on a Modified 5-Year Epoch.
Obligate Wetland Plants (OBL)	1	14	Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1 percent) in non-wetlands.
Obligate Upland Plants (UPL)	1	14	Plants that occur rarely (estimated probability <1 percent) in wetlands, but occur almost always (estimated probability >99 percent) in non-wetlands under natural conditions.
Open Water	4	11196	For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of ``open waters'' include rivers, streams, lakes, and ponds.
Ordinary High Water Mark	7	N/A	The term *"ordinary high water mark"* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.
Ordinary High Water Mark	4	11196	An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Perennial Stream	4	11197	A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
Pioneer Species	10	71	A species that colonizes a previously uncolonized area.
Practicable	4	11197	Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
Pre-construction notification	4	11197	A request submitted by the project proponent to the USACE for confirmation that a particular activity is authorized by a NWP. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a NWP, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by a NWP.
Preservation	4	11197	The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.
Rating curve	10	71	A curve that illustrates the relationship between depth (stage) and the amount of flow (discharge) in a channel.
Reach	10	71	Segment of a stream channel.
Re-establishment	4	11197	The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.
Rehabilitation	4	11197	The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
Relatively Permanent Water (RPW)	5,	5,69	In the context of CWA jurisdiction post-*Rapanos*, a water body is "relatively permanent" if it flows year-round or its flow is continuous at least "seasonally," (typically 3 months). Wetlands adjacent to a "relatively permanent" tributary are also jurisdictional if those wetlands directly abut such a tributary.

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Relevant Reach	6	40	With respect to "significant nexus determinations," the "relevant reach" will include all tributary waters of the same order. Typically this will include the tributary and all adjacent wetlands reaching downstream from the project site to the confluence with the next tributary or upstream to a similar confluence.
Restoration	4	11197	The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.
Riffle and pool complex	4	11197	Riffle and pool complexes are special aquatic sites under CWA Section 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. Pools are characterized by a slower stream velocity, a streaming flow, a smooth surface, and a finer substrate.
Riparian area	4	11197	Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects water bodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20, in the NWP.)
River Miles	6	53	The flowing distance between the water bodies in question. Typically not a straight line; rather, the measurement is based on how far the water will travel from water body A to water body B. For example, the water in a meandering tributary will flow further than water flowing in a channelized tributary provided the two water bodies are the same distance apart in the landscape.
Ruderals	10	71	Disturbance-adapted herbaceous plant.
Scour	10	71	Soil and debris movement.
Sheetflood	10	71	Sheet of unconfined floodwater moving down a slope; a relatively low-frequency, high-magnitude event.
Sheetflow	10	71	Overland flow occurring in a continuous sheet; a relatively high-frequency, low-magnitude event.
Shellfish seeding	4	11197	The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
			appropriate materials placed into waters for shellfish habitat.
Shift-adjusted rating curve	10	71	A curve that reflects changes (shifts) in the rating for a gage. Ratings may change due to erosion or deposition within the streambed or growth of riparian vegetation.
Significant Nexus	5	40	In the context of CWA jurisdiction post-*Rapanos*, a water body is considered to have a "significant nexus" with a traditional navigable water if its flow characteristics and functions in combination with the ecological and hydrological functions performed by all wetlands adjacent to such a tributary, affect the chemical, physical, and biological integrity of a downstream traditional navigable water.
Single and complete project	4	11197	The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single water body) at a specific location. For linear projects crossing a single water body several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate water bodies, and crossings of such features cannot be considered separately.
Station Datum	9	N/A	A fixed base elevation at a tide station to which all water level measurements are referred. The datum is unique to each station and is established at a lower elevation than the water is ever expected to reach. It is referenced to the primary benchmark at the station and is held constant regardless of changes to the water level gauge or tide staff. The datum of tabulation is most often at the zero of the first tide staff installed.
Stormwater management	4	11197	Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.
Stormwater management facilities	4	11197	Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.
Stream bed	4	11197	The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the ordinary high water marks, are not considered part of the streambed.

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
Stream channelization	4	11197	The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.
Stream Order	N/A	N/A	A method of numbering streams as part of a drainage basin network. The smallest unbranched mapped tributary is called first order, the stream receiving the tributary is called second order, and so on.
Stream power	10	71	The rate of doing work, or a measure of the energy available for moving rock, sediment, or woody or other debris in a stream channel, as determined by discharge, water surface slope, and the specific weight of water.
Structure	4	11197	An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.
Succession	10	41	Changes in the composition or structure of an ecological community.
Tidal waters	7	N/A	The term "tidal waters" means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.
Tidal wetland	7	N/A	A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channel-ward of the high tide line, which is defined at 33 CFR 328.3(d).
Traditional Navigable Waters (TNW)	6	68	A "traditional navigable water" includes all the "navigable waters of the United States," defines in 33 CFR §329, and by numerous decisions of the Federal courts, plus all other waters that are navigable-in-fact. Pursuant to 33 CFR §329: Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events that impede or destroy navigable capacity. The USACE is currently drafting new regulations defining TNWs.
Transmission	10	72	Loss of discharge due to infiltration of flow into the channel

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
loss			bed and banks.
Tributary	6	69	A "tributary," as defined in the *Rapanos* guidance document, means a natural, man-altered, or man-made water body that carries directly or indirectly into a traditional navigable water. For the purposes of determining significant nexus with a traditional navigable water, a "tributary" is the entire reach of the stream that is of the same order (i.e., from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point such tributary enters a higher order stream).
Upland Plants (UPL)	1	14	Plants that occur rarely (estimated probability <1 percent) in wetlands, but occur almost always (estimated probability >99 percent) in non-wetlands under natural conditions.
Vegetated shallows	4	11197	Vegetated shallows are special aquatic sites under CWA Section 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as sea grasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.
Wash	10	72	Broad gravelly dry bed of an intermittent stream.
Waterbody	4	11197	For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent—meaning bordering, contiguous, or neighboring—to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.
Watershed (Drainage basin)	10	72	An area of land that drains to a single outlet and is separated from other watersheds by a divide.
Waters of The United States	7	N/A	The term "waters of the United States" means: (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

GLOSSARY OF TERMS (cont.)

Term	Source	Page	Definition
			(iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as waters of the United States under the definition; (5) Tributaries of waters identified in paragraphs (a)(1)-(4) of this section; (6) The territorial seas; (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section, (Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA [other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition] are not waters of the United States.) and (8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA.
Wetlands	1,2,7	N/A	The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The criteria for determining wetlands is set forth in the USACE Wetlands Delineation Manual (1987) and relevant Regional Supplements (Arid West, December 2006)
Xeric	10	72	Relating or adapted to an extremely dry habitat.

Sources:

1. USACE Wetlands Delineation Manual, January 1987
2. USACE Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest, June 2001
3. USACE Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, December 2006
4. FEDERAL REGISTER: Department of Defense; Department of the Army, Corps of Engineers, Re-issuance of Nationwide Permits; Notice, March 12, 2007
5. EPA/USACE Joint Memorandum: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States, (June 5, 2007)
6. USACE Jurisdictional Delineation Form Instructional Guidebook, May 30, 2007
7. Code of Federal Regulations (CFR): 33 CFR 328.3 Definitions of Waters of the United States and/or 33 CPR 329 Definitions of Navigable Waters of the United States.
8. USGS Hydrologic Unit Maps, U.S. Geological Survey Water-Supply Paper 2294 (1994), by Paul R. Seaber, F. Paul Kapinos, and George L Knapp.
9. Center for Operational Oceanographic Products and Services.
10. USACE, A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States, August 2008

D.2 - CNDDB Search Results

DEPARTMENT OF FISH AND GAME

Quad is (Lathrop (3712173) or Manteca (3712172))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	FederalListingStatus	StateListingStatus	GlobalRank	StateRank	CNPSList	OtherStatus	Habitat
Agelaius tricolor	tricolored blackbird	ABPBXB0020	427	None	None	G2G3	S2		ABC_WLBCC-Watch List of Birds of Conservation Concern | BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_EN-Endangered | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh | Marsh and swamp | Swamp | Wetland
Ambystoma californiense	California tiger salamander	AAAAA01180	1049	Threatened	Threatened	G2G3	S2S3		DFG_SSC-Species of Special Concern | IUCN_VU-Vulnerable	Cismontane woodland | Meadow and seep | Riparian woodland | Valley and foothill grassland | Vernal pool | Wetland
Athene cunicularia	burrowing owl	ABNSB10010	1244	None	None	G4	S2		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley and foothill grassland
Buteo swainsoni	Swainson's hawk	ABNKC19070	1681	None	Threatened	G5	S2		ABC_WLBCC-Watch List of Birds of Conservation Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Great Basin grassland | Riparian forest | Riparian woodland | Valley and foothill grassland
Cirsium crassicaule	slough thistle	PDAST2E0U0	19	None	None	G2	S2.2	1B.1	BLM_S-Sensitive	Chenopod scrub | Freshwater marsh | Marsh and swamp | Riparian scrub | Wetland
Eryngium racemosum	Delta button-celery	PDAPI0Z0S0	26	None	Endangered	G2Q	S2.1	1B.1		Riparian scrub | Wetland
Lytta moesta	moestan blister beetle	IICOL4C020	12	None	None	G2	S2			Valley and foothill grassland
Sylvilagus bachmani riparius	riparian brush rabbit	AMAEB01021	4	Endangered	Endangered	G5T1	S1			Riparian forest
Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	126	None	None	G2	S2	1B.2		Brackish marsh | Freshwater marsh | Marsh and

ScientificName	CommonName	ElementCode	OccCount	FederalListingStatus	StateListingStatus	GlobalRank	StateRank	CNPSList	OtherStatus	Habitat
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	PDAST9F031	9	None	None	G4T3	S1.1	2.1		swamp | Wetland Marsh and swamp | Meadow and seep | Riparian forest | Vernal pool | Wetland
Xanthocephalus xanthocephalus	yellow-headed blackbird	ABPBXB3010	9	None	None	G5	S3S4		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Marsh and swamp | Wetland

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Appendix E:
Cultural Resources Supporting Data

E.1 - Archaeological Resources Assessment



June 10, 2005

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Vice President of Land Acquisition
Shea Homes
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RE: Archaeological Resources Assessment for Feasibility Study
Approximately 480 Acres in Area between Woodward Avenue and Walthall Slough
(APNs 241-240-02; -03; 241-040-04; -05 and 241-260-05)
City of Manteca, San Joaquin County

Dear Mr. Henry,

Please let this letter stand as Basin Research Associates' archaeological resources assessment for the above project located in the City of Manteca, San Joaquin County. The report provides the results of: (1) an archival records search by the California Historical Resources Information System, Central California Information Center, CSU Stanislaus, Turlock; (2) a review of pertinent literature, maps and archival records on file at Basin Research Associates; (3) a field inventory; and, (4) presents conclusions and management recommendations. This assessment was undertaken to provide information to Shea Homes for pre-planning studies and for environmental compliance requirements for cultural resources in the City of Manteca and San Joaquin County.

PROJECT LOCATION

The project, located in the southern portion of San Joaquin County in the southwestern portion of Manteca, San Joaquin County, includes five adjoining parcels totaling approximately 480 acres (APNs 241-240-02; -03; 241-040-04; -05 and 241-260-05) and located at 2368, 20601 and 20611 Woodward Avenue. The area is occupied by five buildings/structures, one trailer home, an almond orchard, row crops, an irrigation system, farming equipment, above ground storage tanks with modern trash present. The project is within the Southwest Manteca Area Specific Plan (SWMSP) of the City of Manteca.

The irregularly shaped project is south of State Route 120 and east of Weatherbee Lake. The intersection of Woodward Avenue and Williamson Road is located about midpoint on the western boundary of the project. Woodard Avenue forms the northern and northeastern boundary of the project; Walthall Slough forms the southwestern boundary of the project (Shea Homes 2005;

USGS Lathrop, Calif. 1996; T 2S, R 6E part Sections 11 and 14) [Figs. 1-2].

REGULATORY BACKGROUND

The regulatory framework that mandates consideration of cultural resources in project planning includes federal, state, and local governments. Cultural resources include prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional and/or cultural importance to various groups. Cultural resources may be determined significant or potentially significant in terms of national, state, or local criteria either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of a specific project.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires a review to determine if the project will have a significant effect on archaeological sites or properties of historic or cultural significance to a community or ethnic group eligible for inclusion in the California Register of Historic Resources (CRHR). The CRHR (Section 5024.1) is a listing of those properties that are to be protected from substantial adverse change, and it includes properties that are listed, or have been formally determined to be eligible for listing in, the NRHP, State Historical Landmarks, and eligible Points of Historical Interest. A historical resource may be listed in the CRHR if it meets one or more of the following criteria:

- it is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- it is associated with the lives of persons important to local, California, or national history;
- it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- it has yielded or has the potential to yield information important in the prehistory or history of the local area, California, or the nation.

Historical Resources

Public Resources Code (PRC) Section 21084.1 stipulates that any resource listed in, or eligible for listing in, the CRHR is presumed to be historically or culturally significant. Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under PRC Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not. A resource that is not listed in or determined to be eligible for listing in the CRHR, not included in a local register or historic resources, or not deemed significant in a historical resource survey may nonetheless be historically significant (PRC Section 21084.1). This provision is intended to give the Lead Agency discretion to determine that a resource of historic significance exists where none had been identified before and to apply the requirements of PRC Section 21084.1 to properties that have not previously been formally recognized as historic.

CEQA equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment (PRC Section 21084.1) and defines substantial adverse

change as demolition, destruction, relocation, or alteration that would impair historical significance (PRC Section 5020.1).

Archaeological Resources

Where a project may adversely affect a unique archaeological resource, PRC Section 21083.2 requires the Lead Agency to treat that effect as a significant environmental effect. When an archaeological resource is listed in or is eligible to be listed in the CRHR, PRC Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. PRC Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

Other California Laws and Regulations

Other state-level requirements for cultural resources management appear in the California PRC Chapter 1.7, Section 5097.5 "Archaeological, Paleontological, and Historical Sites," and Chapter 1.75 beginning at Section 5097.9 "Native American Historical, Cultural, and Sacred Sites" for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and sections 5097.94 and 5097.98 of the PRC, and falls within the jurisdiction of the NAHC.

City of Manteca

The *Manteca General Plan* 2023 has several goals and policies concerning archaeological and historic resources (see Resources Conservation in the *Manteca General Plan*):

Goals

- Goal RC-11 - Preserve and enhance Manteca's archaeological and historic resources for their aesthetic, educational and cultural values.

- Goal RC-12 - Protect Manteca's Native American heritage.

Policies

- RC-P-35 - The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without consulting the California Archaeological Inventory at Stanislaus State University (Note: now known as the Central California Information Center of the California Historical Resources Information System at California State University, Stanislaus, Turlock), conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendation of a qualified archaeologist. City implementation of this policy shall be guided by the California Environmental Quality Act (CEQA) and the National Historic Preservation Act (NHPA).

- RC-P-36 – The city shall refer development proposals that may adversely impact archaeological sites to the California Archaeologist Inventory, Stanislaus State University.

- RC-P-37 – The City shall set as a high priority the protections and enhancement of Manteca's historically and architecturally significant buildings.

- RC-P-38 - The City shall work with property owners seeking registration of historical structures as State Historic Landmarks or listing on the Federal Register of Historic Sites.

- RC-P-39 - The City shall prepare and adopt a Historical Preservation Ordinance.

- RC-P-40 - The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved intact, the City shall seek to preserve the building facades.

Implementation

- RC-I-38 - Require a records search for any proposed development project, to determine whether a site contains known archaeological, historic, or cultural resources and/or to determine the potential for discovery of additional cultural resources. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.

- RC-I-39 - Require that sponsors of proposed development projects on sites where probable cause for discovery of archaeological resources (as indicated by records search and where resources have been discovered in the vicinity of the project) retain a consulting archaeologist to survey the project site. If unique resources, as defined by California State law, are found, a qualified archaeologist or historian shall be called to evaluate the find and to recommend proper action. Require a monitoring plan for the project to ensure that mitigation measures are implemented.

- RC-I-40 - When feasible, incorporate significant archaeological sites into open space areas.

- RC-I-41 - The City should continue its inventory of all historic sites throughout the City. The inventory should contain a narrative of the significant facts regarding the historic events or persons associated with the site, and pictures of the site.

- RC-I-42 - - The City should maintain an archive of historic information, including photographs, publications, oral histories and other materials.

- RC-I-43 – The historic archives will be compiled according to location in the City, and will be maintained in a safe environment to protect it over time.

- RC-I-44 – The City should develop policies and the means to make the information available to the public for viewing and research.

- RC-I-45 - All City permits for reconstruction, modification of existing buildings will

require submittal of a photograph of the existing structure or site. The intent is to create a record of the buildings in the City over time. A photograph will also be required for vacant sites that will be modified with new construction of new buildings or other above ground improvements.

- RC-I-46 Encourage the placement of monument or plaques that recognize and celebrate historic sites, structures, and events.

- RC-I-47 - The City shall adopt and implement a historic building code, as authorized by state law.

- RC-I-48 - If human remains are discovered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to their origin and disposition pursuant to Public Resource Code Section 5097.98. If the coroner determines that no investigation of the cause of death is required, and if the remains are of Native American origin, the coroner will notify the Native American Heritage Commission [NAHC], which in turn will inform a most likely descendent [MLD]. The descendent will then recommend to the landowner appropriate disposition of the remains and any grave goods.

EXISTING CONDITIONS

The project location is used for agriculture. Five buildings/structures, one trailer home, an almond orchard, row crops, an irrigation system, farming equipment, above ground storage tanks with modern trash are present.

RESEARCH SOURCES CONSULTED

SOURCES CONSULTED

A prehistoric and historic site record and literature search was conducted by the California Historical Resources Information System, Central California Information Center (CHRIS/CCIC), CSU Stanislaus, Turlock (File No. 5766L dated May 25, 2005). Reference material at the CCIC and on file at Basin Research Associates, San Leandro was also reviewed[1] as was the Manteca *General Plan 2023* and the *DRAFT Southwest Manteca Specific Plan* of July, 2004.

The Native American Heritage Commission (NAHC) was also contacted for a search of the *Sacred Lands Inventory* on file with the Commission (Busby 2005). The review was negative (Pilas-Treadway 2005).

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1. Specialized listings consulted include the *Historic Properties Directory* for San Joaquin County (CAL/OHP 2005) with the most recent updates of the National Register of Historic Places, California Historical Landmarks, and California Points of Historical Interest as well as other evaluations of properties reviewed by the State of California Office of Historic Preservation. Other sources consulted include: the *California History Plan* (CAL/OHP 1973); *California Inventory of Historic Resources* (CAL/OHP 1976); *Five Views: An Ethnic Sites Survey for California* (CAL/OHP 1988); and other local and regional surveys/inventories, lists and historic maps (see REFERENCES CITED AND CONSULTED).

No local historical societies were contacted regarding a review of local landmarks, potential historic sites or structures.

SUMMARY CONTEXT

NATIVE AMERICAN

Prehistoric

The northern San Joaquin Valley and Delta regions have been the focus of archaeological research since the early 20th century with investigations continuing up to the present. The general area was occupied as early as 8,000-12,000 years ago with settlement centered around marshes, rivers, and lakes. The complexity of the archaeological record has resulted in the development of local sequences with specific cultural traits and chronologies. The three general patterns postulated for the prehistoric lifeway from approximately 3000 B.C. to contact consist of the Windmiller Pattern [Late Horizon] (ca. 2600 B.C. to 1000 B.C. (?)); the Berkeley Pattern [Middle Horizon] (ca. 1000 B.C. [Stockton area] to A.D. 1000 (?)); and, the Augustine Pattern [Late Horizon] (ca. A.D. 1000 to contact). These patterns differ in terms of primary subsistence activities and increasing social stratification (Moratto 1984:207-211). As noted by Wallace (1978:463), "Despite certain disadvantages, such as the periodic flooding of the bottomlands, intense summer heat, and the ever-present annoyance of mosquitoes, the lower San Joaquin provided a favorable environment for aboriginal habitation." Nonetheless, the area south of the Stockton District of the San Joaquin Valley, is one of the least-known archaeological areas in California (Moratto 1984:215). For a general discussion on the prehistory of the region and adjacent counties see Napton (1981), Moratto (1984), Moratto and Jackson (1990), and Windmiller (2002a).

Ethnographic

The project area appears to have been located within Northern Valley Yokuts territory. Following Wallace (1978), the tribal name of the group who occupied the east side of the San Joaquin River from the vicinity of Manteca to just below the mouth of the Merced River is unknown or uncertain. Villages noted in the literature are limited to *Cuyen*, *Mayem*, *Bozenats*,[2] *Taitones*, *Aplagamne*[3] after Viader's two expeditions of 1810 (Cook 1955:67; Wallace 1978:462, Fig. 1, 470).[4]

Latta assigns the general study area[5] to the *Apelumne* Yokuts, the last village/villages noted by Wallace (1978). Latta also notes that this was the group that ". . . should be credited with killing, Lindsey, first settler at Stockton - in a tule house near McCloud Lagoon" (Latta 1977:97, #7;

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2. "probably the name of a chief"

3. both the *Bozenats* and *Taitones* "may be larger unit, including more than one village."

4. See Schenck (1926:131, Fig. 1, 135-136) for the locations of the villages mentioned in early Spanish reports. None were located close to the project.

5. The Stockton Sand Plains, Escalon, Manteca, French Camp, and Lathrop

Napton 1993:8).[6]

Yokuts subsistence relied on hunting and gathering, most especially salmon and acorns, but also on fowling and the consumption of tule roots. The aboriginal inhabitants of the San Joaquin Valley were transformed from hunters and gatherers into agricultural laborers who lived at the missions including Mission San Jose, Santa Clara, Soledad, San Juan Bautista and San Antonio and worked with former neighboring groups such as the Costanoan and Esselen. Either Mission San Jose to the west or Mission San Juan Bautista to the south, both founded in 1797, would have been the closest missions (Cook 1955:67; Levy 1978:486; Wallace 1978:462, Fig. 1 with Beck and Haase 1974:#20, 464).

A pestilence swept through the San Joaquin Valley in fall of 1832 and by summer of 1833, the villages in the valley from the Sacramento valley south to the Kings River were depopulated. By the late 1870s, observers noted that, *"The most hostile disposed Indians were those of the Calaveras River."* As a result of introduced diseases, the impact of missionization, and displacement[7] by gold seekers, little is known of the aboriginal inhabitants of the lower or northern San Joaquin Valley (Thompson and West 1879:11-12; Schenck 1926:131; Bennyhoff 1977:127-128, 132, 137, 158, Maps 2-3 after various; Wallace 1978:462 Fig. 1, 463, 469; see also Kroeber 1908:377; Kroeber 1925:485-486).

HISTORIC PERIOD
Hispanic Era

The Spanish philosophy of government in northwestern New Spain was directed at the founding of presidios, missions, and secular towns with the land held by the Crown (1769-1821), while the later Mexican Period (1822-1846) policy stressed the individual ownership of land. After the secularization of the missions by Mexico in 1834, the vast tracts of mission lands were granted to individual citizens (Hart 1987).

The routes of the early explorers, even though they cannot be determined with total accuracy, had a profound effect on the indigenous populations in central California. The San Joaquin Valley was subject to a number of expeditions. Padre Juan Crespi with Captain Pedro Fages in March 1772 were the first EuroAmericans to see the San Joaquin River and named it the *San Francisco*. Jose Joaquin Moraga probably reached the vicinity of the mouth of the Calaveras River near present day Stockton in September 1776. The 1796 Hermenegildo Sal expedition apparently went into the Stockton area and the *Rió de la Pasión* (Calaveras River; Schenck 1926:126; Cook:1960:241-242, 282). In 1806, Gabriel Moraga and Padre Muñoz party proceeded from San Juan Bautista through the San Joaquin Valley and turned back at the *Rió de la Pasión* (Cook 1960:247-250). This expedition named the river *San Joaquin* with portions of the river variously named until ca. 1810. Moraga was also the first European to discover and name the Stanislaus River in 1806, *Rió de Nuestra Señora de Guadalupe*. In 1810, Jose Viader, accompanied by Gabriel Moraga, traveled along the west side the San Joaquin River to as far south as the Merced

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6. Windmiller (2002a:9-10 and 2003a:8-9) does not state the tribe/tribelet affiliation.

7. Into the early 1900s Knights Ferry on the Stanislaus River, about 28 miles southeast of Stockton, was the principal Indian settlement in the northern San Joaquin Valley (Bennyhoff 1977:135).

River and also traveled through the area watered by the Stanislaus River in the pursuit of runaway Native Americans. In October 1811 Father Ramon Abella (and Sergeant Sanchez) explored the lower portions of the Sacramento and San Joaquin rivers (Schenck 1926:125-129; Cook 1960:260-263, 287; Hoover et al. 1966:539; Beck and Haase 1974:#20-22; Gudde 1998:337, 373-374).

After control of California passed from Spain to Mexico in 1822, military expeditions into the interior of central California focused on recovering stolen animals and punishing hostile Indians (Beck and Haase 1974:#22).

As early as the 1820s, Anglo-American mountain men followed many of routes of Spanish explorers through the San Joaquin Valley in the general project area. Mountain men are important in the history of the west as the precursors of Anglo-American settlement. They first explored, trapped and traded and later "regularized" trails and escorted others who would eventually settle these areas. These early interlopers included Jedediah Strong Smith in 1827 (near Mossdale), the Ewing-Young expedition in 1832-1833,[8] and Joseph Reddeford Walker and his group in 1833. Later, on March 30, 1844, John C. Fremont ferried the Stanislaus River and camped nearby.

From 1832 through 1845, French Camp, located 4 miles south of what was to become Stockton and about 6.0-6.5 miles north of the project, was notable as the southernmost regular camp of the Hudson's Bay Company. The site became the terminus of the Oregon Trail, in use from 1832 to 1845, when the trappers abruptly departed the region (Schenck 1926:130-131; Hoover et al. 1966:368-369; Beck and Haase 1974:#43; Hart 1987:360, 479-480, 546, 573; Schell 1995:9).

During the Mexican Period (1821 to 1848), the project situated in ungranted lands, south of *El Rancho del Campo de los Franceses*[9] and east of *Rancho El Pescadero* (Pico and Naglee) and *Rancho El Pescadero* (Grimes), both situated on the west side of the San Joaquin River (Thompson and West 1879:Map Number Three; Beck and Haase 1974:#32; USGS 1915; Windmiller 2002b). The *Rancho El Pescadero* (Grimes) was granted to Valentin Higuera and Rafael Feliz in November 1843 and patented to Hiram & Francis Grimes in January 1858 (Perez 1996:81).

American Era

In the mid-to-late 19th century, most of the rancho and pueblo lands and some of the ungranted land in California were subdivided as the result of population growth, the American takeover, and the confirmation of property titles. The initial population boom in California was associated with the Gold Rush (1848), followed later by the construction of the transcontinental railroad (1869). Later, the development of the refrigerator railroad car (ca. 1880s), used for the transport of agricultural produce to distant markets, had a major impact. Still later, European immigration and the subsequent development of agriculture and ranching and associated food processing industries had an impact on population growth in the area.

San Joaquin County, one of the original 27 counties, was created in 1850 with Stockton as the

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8. A member of this expedition commented on the numerous Indian villages and the devastated depopulation.

9. This former rancho includes present-day Stockton and French Camp.

county seat. The agricultural land use pattern within the study area and environs and dependence on transportation systems - trails/roads, ferries, bridges, and the railroad - has persisted to date. Travel was facilitated by ferries along the San Joaquin and Stanislaus rivers in the 1850s and 1860s and roads, especially to French Camp and later Stockton (e.g., Cibbes 1850; Hoover et al. 1966:367, 271, 376; Hart 1987).

The first Anglo-European settlement was located at French Camp, about 4.0 miles south of Stockton. French-Canadian trappers of the Hudson's Bay Company set up camp at this location in 1832 and departed abruptly in 1845. Richard P. Hammond plated the townsite in 1850 as Castoria for Charles David Weber, but the name French Camp has persisted to date. French Camp Road was an important winter road and, as a result, French Camp was an important staging and freighting center in the early 1850s (see also Hispanic Period above).

In 1847, Weber laid out the town of Tuleburg north of French Camp on the south side of the Laguna, now known as the Stockton Channel. After the discovery of gold at Coloma in 1848, Weber decided to create a town and supply center for the miners traveling to the Mother Lode mines. The town was resurveyed and renamed Stockton, after Commodore Robert F. Stockton, in the spring of 1849. The city soon became the largest transportation, commercial, industrial, economic, and social center in the northern San Joaquin Valley. Later with the decline of gold mining, the introduction of agriculture and the coming of the railroads, Stockton was still the focal point of the San Joaquin Valley. The Port of Stockton, opened in 1933, was the first inland seaport in California and also facilitated growth (e.g., Hammond 1849; Goddard 1857 [Castoria]; Thompson and West 1879:Map Number two; Hoover et al. 1966:269, 369-371; Hart 1987:444, 503, 535; Patera 1991:78 [French Camp], 206 [Stockton], Shebl 1993:63-64, 166-169; Hillman and Covello 1985:6, 19).

In the late 1840s into the 1850s, the San Joaquin Valley had a limited number of roads, ferries, and cities. The first known sailing launch from San Francisco down the San Joaquin River landed at what is now known as Mossdale fall 1846. It carried about 20 Mormon pioneers who founded the New Hope Agricultural Project [later known as Stanislaus City] in Stanislaus. "The first Landing Place of Sailing Launch Comet" is California State Landmark #437 (CAL/OHP 1990:210).

The first ferry on the San Joaquin River was established in 1848 by John Doak and Jacob Bonsell where the "Old Sutter's Fort-San Jose Trail" and later a route to the mines crossed the river. In 1852 Doak sold to Hiram Scott and later same year Bonsell died. Bonsell's widow married James A. Shephard. It was known as Shepherd's Ferry until 1856 when it was purchased by William T. Moss. The ferry was located at about where the SP (now Union Pacific) and the highway from Tracy to Manteca cross at present-day Mossdale (Hoover et al. 1966:376-77; Owens 1991:T 2S R 6E Mossdale site).

Cibbes 1850 *Map of San Joaquin River* shows French Camp, three roads north from the Stanislaus River and Stanislaus City and a number of ferries along the Stanislaus River.

Goddard's 1857 *Map of the State of California* shows only the road to French Camp from Clark's [ferry] on the south side of the Stanislaus River.

The 1851-1869 Government Land Office (GLO) survey plat for GLO T 2S R 6E shows the project as located east of "Rancho El Pescadero, Hiram Grimes et al." on the west side of San Joaquin

River. The project and vicinity consisted of "Swamp and Overflowed Land" (e.g., GLO T 2S R 6E, part Sections 2, 11, 14, 23, labeled). As a result, the two closest buildings to the project - "Visher's House" and "Wilber's Hoh [house]" –were within in Sections 1 and 2, north/northwest of the project in "Level 2nd rate land." At the time, "Bousell's Ho." was present on the west side of the San Joaquin River in the SW 1/4 of Section 3 within the *Rancho El Pescadero* (Grimes).

Whitcher's 1857 plat of *Rancho El Pescadero* finally confirmed to Hiram Grimes et al. shows the "Bonsell's Ferry" just below "Poso del Pescadero" [*El Paso del Pecadero*] which was located in the vicinity of present-day Mossdale at the northeast corner of the rancho. An "Abandoned Ferry" was further to the south of the project vicinity along the San Joaquin in Section 22 of T 2S R 6E. Small fields, a house, San Joaquin City, the Lewis Ferry and [?], the Tuolumne River, etc. are also shown further south along the San Joaquin River within this elongated rancho.

In 1879, the project area was located in Castoria Township, south of Lathrop, in an agricultural area dotted with ranches. At Lathrop,[10] the Central Pacific Railroad split - one track [line not named] ran about south to Bantas and Tracy in the W 1/2 of Section 36 of T 1S R 6E and the other, the Visalia Branch to Ripon ran through the NE 1/4 of Section 31 of T 1S R 7E. The nearest features in 1879 consisted of "Moss's Ferry" on the San Joaquin River in the NW 1/4 of the SW 1/4 of Section 1 of T 2S R 6E and the farmstead of "J. [John W. Thompson" who owned 400 acres near Walthall Slough in the SE 1/4 of Section 14, south of the project; the 341 acre farmstead of "J.M. Barber" in the SE 1/4 of Section 12; and, the farmstead of "D. Houser" in the NE 1/4 of Section 13 (Thompson and West 1879:102, 105, 136, Plates LXIII, XLIV and Map 3).

In 1894, large ranches dominated what was to be Manteca and the surrounding area. Irrigation was crucially important. Joshua and Wright Cowell completed the Tulloch Ditch, a 47-mile canal from the Stanislaus River in 1896. Manteca[11] was named in 1904 or 1905 by the Central Pacific (on the former Visalia Branch of the Central Pacific) supposedly after a local creamery. Manteca replaced the shipping point/station on the rail line known as "Cowell," named for Joshua Cowell who provided the railroad right-of-way in 1870. Cowell was located at the junction of two wagon roads, the north-south road to Stockton and an east-west road now known as Yosemite Avenue (State Highway 120). This junction was also the site of a skimming station for raw milk and was followed by other small enterprises and ca. 1905-1911 the emergence of a downtown along Yosemite Avenue. The Manteca post office was established September 14, 1908. By 1914, a modern creamery had been constructed and replaced the "skimming station." Grain farming was supplanted by dairying and orchard and nut crops and resulted in the subdivision of large ranches into parcels of 10/20 to 40 acres[12] in the Manteca area. After the introduction of irrigation, Manteca flourished, especially with melon crops. The stockyards relied on beet pulp from sugar processing for feed. Manteca has functioned as major transportation hub, a market, and food-processing center and as the residential community of the region (Chavez 1981:5; Hillman and

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10. Lathrop, a railroad junction ca. 1.8 mile north of the project (10.0 miles south of Stockton and three miles north of Mossdale) was named for Jane Lathrop Stanford, wife of Leland Stanford. The Lathrop post office was established February 27, 1871, discontinued June 21, 1875 and re-established July 23, 1875 (Patera 1991:115).

11. Spanish for lard, fat, pomatum, butter, oily substance of cocoa and other fruits (Cuyás 1972).

12. Napoli (2002) p. 3 as 20-40 acre parcels and p. 5, Fig. 3 10-40 acre parcels

Covello 1985:53-68; Hart 1987:302; Patera 1991:127; Gudde 1998:226; Napoli 2002:3-6; SSJID 1999; Baloian et al. 2004:10).

In 1909, the South San Joaquin Irrigation District (SSJID) was established to provide a reliable and economical source of irrigation water for agriculture.[13] The SSJID covers approximately 72,000 acres and secures water from the Stanislaus River (about 18 miles northeast of Oakdale). The district includes Escalon, Ripon, and Manteca. Most of the earthen canals were built between 1910 and the mid-1920s. The first water delivery was in spring 1914 and by the end of 1914 the system could irrigate every 40-acre parcel in the area. The unlined canals leached water into the sandy soils and were replaced by concrete-lined or pipes. In addition to the 26-mile long Main Distribution Canal, there are 120 miles of open ditch and 320 miles of underground pipeline (Adams 1929:Plate XIX; SSJID 1999; Napoli 2002:3-6 [SSJID as started construction 1909, first delivery 1913]; Napoli 2003:3; Baloian et al. 2004:10, 16).

Available historic maps indicate that Walthall Slough within the project area was in existence by 1879 and the levee through the project by 1912 (Thompson and West 1879:Map Number Three) USGS 1915 [surveyed 1912], USGS 1996). None of the irrigation features identified in the SWMSP or General Plan are within in or adjacent to the project. No buildings were present in or adjacent to the project in 1912. A total of four buildings in the project were identified as constructed before 1952 (Napoli 2003:Fig. 1). Three of these structures are among the seven shown on the 1996 USGS topographic map in a cluster north of the levee; one structure constructed prior to 1952 is shown as south of the levee.

Mossdale on the San Joaquin River, located about 1.25 miles northwest of the project, is the closest feature to the project in the study area. Mossdale is the site of the historic ford known as *El Paso del Pecadero* and is also the location of California State Landmark #437 "The first Landing Place of Sailing Launch Comet" dating to 1846. Furthermore, it had the first ferry on the San Joaquin River, established in 1848 by John Doak[14] and Jacob Bonsell. The ferry was purchased by Hiram Scott in 1852 and after James A. Shephard married Bonsell's widow it was known as Shepherd's Ferry. J. William T. Moss, namesake of Mossdale, owned the ferry from 1856-1869 and over 10,000 acres in the surrounding area. Mossdale is also the location of "California State Landmark #780-7 First Transcontinental Railroad - Site of Completion of Pacific Railroad" which commenced service on September 8, 1869.[15] The small town of Mossdale on the east bank of the river developed, taking advantage of the intersection of State Highway 120 and U.S. 50 (the Lincoln Highway). The Mossdale post office was established March 29, 1911, but operated only until October 31, 1911. In the 1920s, Mossdale had a dairy operation employing 100 near the west bank of the river (Whitcher 1857; Thompson and West 1879:Map Number Three; USGS 1915; Hoover et al. 1966:376-77; CAL/OHP 1990:210, 212; Owens 1991:T2S R6E Mossdale site; Hillman and Covello 1985:221-223; Patera 1991:142; Napton 1993:12; Schell

13. After the passage of the Wright Irrigation Law (Act) in 1887 and as amended and known as the Wright Bridgeford Irrigation Law. This act, sponsored by C.C. Wright, a state senator from Modesto, permitted riverland owners to unrestricted stream use with the right to create irrigation districts to divert river water to dry lands for flood control and water conservation (Hart 1987:566-567; SSJID 1999).

14. Reportedly, Doak crossed the River with an entourage of 300 men and several wagons.

15. This bridge was replaced in 1890/1895 and again in 1942.

1995:215).

Weatherbee Lake, is just west of the project opposite Woodward Avenue at the junction of the San Joaquin River and Walthall Slough. The Lake is named for George Wetherbee [*sic*], owner of the area between Bronzan Road and the "Lake" who farmed until 1918. The subdivision of approximately 50 summer homes at Weatherbee Lake was established in 1933 by Joe Donato (Napton 1993:13; Schell 1995:215-216; USGS 1996).

The *Manteca General Plan 2023* and SWMSP background reports by Windmiller and Napoli (2002, 2003) provide additional detailed information about Manteca and the project area.

ARCHAEOLOGICAL FIELD INVENTORY

Basin Research Associates' archaeologists Mr. Christopher Canzonieri (M.A.) and Ms. Christine Marshall (M.Sc.) conducted a field inventory of the proposed 500-acre project area on May 25-27, 2005. This survey relied on north/south transects spaced at no more than 30-meter intervals with random interval transects as necessary in areas not allowing standard transect intervals. The backdirt from all animal burrows was inspected for the presence/absence of cultural materials. Surface visibility varied from approximately 5 to 100 percent.

A levee, trending northwest to southeast, roughly 35 feet wide and ca. 15 feet high with an approximate 2.5:1 slope and gravel road, bisects the project from just east of Weatherbee Lake southeasterly.[16] The levee road, access roads, irrigation ditches/canals, fields and orchards in the project area were all inspected for the presence/absence of cultural resources. The southern third of the project between the levee and Walthall Slough was surveyed first continuing northwest, east and then south on the north side of the levee. The vegetation along Walthall Slough and all other canals, and ditches was extremely dense with a visibility less than five percent(e.g., mustard, "volunteer" corn, thistles, trees, grasses, etc.). The survey of the area south of the levee was limited due to recently planted tomatoes and associated irrigation. The soil consisted of a loose silty sand with mica flecks (10YR 5/3 brown-dry / dark grayish brown 10YR 4/2-wet). An almond orchard is located in the northwest corner of the project, immediately south of Woodward Avenue and east of S. Williamson Road. Visibility within the orchard was excellent, 75-95 percent with only moderate grass covering the rows between the trees. The soil was a sandy silt (10YR 6/1 gray-dry / 10YR 4/1 dark gray-wet). The field immediately north of the levee and south of the structure compound was being plowed during the survey resulting in 100 percent visibility. The soil consisted of loose silty sand (10YR 6/2 light brownish gray-dry / 10YR 4/2 dark grayish brown-wet). The field immediately to the northwest was not surveyed due to recently planted tomatoes and associated irrigation.

The cluster of five structures, plus one mobile trailer/home at 2368 E. Woodward Avenue (APN 241-260-05) was surveyed last.[17] Access to this slightly elevated mound in the approximate

16. Note the project south of the levee flooded in January 1997. These floods damaged an 800-homes, required the evacuation of 2,000, and caused property losses of $100 million (*Manteca Bulletin* 2005; Fred, [?last name], agricultural field supervisor?), personal communication).

17. Seven structures are shown on the 1996 USGS quadrangle map in this area. Following Napoli (2003:Fig. 1) three of these structures were constructed prior to 1952.

middle of the east side of project is provided by a dirt access road south from Woodward Avenue. Various agricultural equipment, vehicles, debris and water tanks and limited introduced landscaping including trees are scattered throughout the structure complex. The soil observed around the structures consists of light brownish gray firm silty sand (10YR 6/2-dry).

Ms. Diane Wurzel, President of Baird Land, Inc., stated that her grandfather Ernest Baird, Sr. had purchased the property in late 1930s or 1940s (Terrasearch 2005). The buildings, from east to west, include:

Building A - Hay Storage. A large open structure approximately 130 feet long by 60 feet long on the east side of the building cluster. The building has a low-pitch corrugated aluminum gable roof supported by 20 painted wood posts (10 on each side/possibly reused telephone post) that are approximately 30 feet high. The hay is stored on a compacted dirt floor.

Building B - Garage/Sheds. This structure is composed of four conjoining corrugated metal buildings. Three of the structures have lean-to style roofs; one has a low-pitched gable style roof. Building B1 measures approximately 10 feet long by 10 feet wide, Building B2 measures approximately 15 feet long by 20 feet wide. Building B3, a garage with to large doors and wooden uprights and a poured concrete floor measures approximately 55 feet long by 30 feet wide. Building B4, a corrugated metal garage with wooden uprights and a packed earth floor has five bays open to the north and measures approximately 90 feet long by 30 feet wide.

Building C - Prefabricated House (possible doublewide trailer). The prefabricated residence with vertical wood siding is north of Building B. This building is capped by a low-pitch asphalt shingle gable roof and has a small entry porch, two doors, and eight aluminum windows. The structure measures 45 feet long by 25 feet wide.

Building D - Large Corrugated Metal Building (warehouse?). A large metal corrugated building is on the west side of the complex and is currently used for the storage of agricultural chemicals and equipment. This corrugated metal building has a gable roof and wood framing and is open at the north and south ends. The approximately 70 feet long by 40 feet wide building also has three standard doors (one on the west, east, and north side); and 10 windows (nine on the west side and one on the east side). The building sits offset on a concrete pad approximately 140 feet long, 40 feet wide, and 4.5-5.0-inches thick.

Building E - Residence. An abandoned wood building, possibly used for agricultural worker housing, is present on the north/northwest side of the building cluster. The building was probably constructed before 1952 This four-room building measures 80 feet long by 18.5 feet wide and is elevated about 2 feet off the ground on wood supports. The horizontal wood exterior shiplap siding is approximately 5.5-inches wide. The north and south walls are 8.6 feet high while the east and west walls are 11.5 feet high to the peak of the corrugated metal gable roof. There are seven windows on the south side of the house and eight windows on the north side; all are 36-inches high by 33-inches wide. There are three doors: one each at the east and the west end and on the south side of the house. The four rooms consist of an entryway and bathroom in the middle; followed by a possible family room; a possible bedroom to the east; and a kitchen to the west with a metal chimney/vent in the northwest corner. The interior includes drywall and decorative shiplap-joints in the kitchen. The

drywall is peeling, the ceiling is collapsing, and there is a significant amount of trash in the house.

Summary

Five structures, plus one mobile trailer/home are present at 2368 E. Woodward Avenue in the project. Three of these buildings were identified using USGS topographic maps as constructed before 1952 (Napoli 2003:Fig. 1).

No buildings/structures were observed south of the levee although one structure constructed prior to 1952 is shown on the 1996 USGS topographic map in the same location.

No indicators of prehistoric or significant historic era cultural material was observed during the survey conducted for the project.

FINDINGS

The intent of this report is to identify historic properties which may be listed, determined or potentially eligible for inclusion on the California Register of Historical Resources (CRHR)[18] within the project.

RECORDS SEARCH RESULTS

Reports

Six reports on file with the CHRIS/CCIC (File. No. 5766L) include the project or area adjacent and were negative for the project and adjacent areas.

The *Cultural Resources Evaluation for the Manteca Wastewater Project* report was negative for the small portion located along the northern half of the eastern project boundary (Chavez 1981) [CCIC Report SJO 729].

The *Cultural Resource Investigation of the Proposed Weston Ranch Levee Improvement Project* includes the levee from Weatherbee Lake through the project (Napton 1988). The records search, background review (including reclamation and construction of levees),[19] and

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18. A historical resource may be listed in the California Register of Historical Resources (CRHR) if it meets one or more of the following criteria: "(1) it is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; (2) it is associated with the lives of persons important to local, California or national history; (3) it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or (4) it has yielded or has the potential to yield information important in the prehistory or history of the local area, California or the nation." Automatic listings include properties listed in the National Register of Historic Places, determined eligible for the National Register either by the Keeper of the National Register or through a consensus determination on a project review, or State Historical Landmarks from number 770 onward. In addition Points of Interest nominated from January 1998 onward will be jointly listed as Points and in the California Register. Landmarks prior to 770 and Points of Historical Interest may be listed through an action of the State Historical Resources Commission (CAL/OHP ca. 1999, 2001a-c).

19. No date for the initial construction of levee through the project is provided. The project is just southeast of the

field survey were negative. Historic features in Mossdale area include the Southern Pacific Railroad crossing of the San Joaquin River [CCIC Report SJO 786].

The *Sacramento-San Joaquin Delta, California Historical Resources Overview* (Owens 1991) includes an extensive historical background and inventory of historical resources arranged by township, range and section. No resources are identified in the project [CHRIS/CCIC Report SJO 816].

A Preliminary Cultural Resources Investigation of the South Manteca Area Plan, 7,800 Acres in San Joaquin County (Napton 1993) provides a natural and cultural setting; a research design; the methods and goals of sensitivity investigations; a negative literature and records review and field inspection; and short discussion of both prehistoric and historic locations. The *Map of Primary Sensitive Areas* places the west part of project near the San Joaquin River and CA-SJo-165/H in area of prehistoric sensitivity area. Napton cites various authors noting ". . . that many Central Valley archaeological sites are almost entirely buried; the bulk of the anthropic deposits extending underground and offering little or no surface indication of their existence." (Napton 1993:22) [CHRIS/CCIC Report SJO 1900].

City of Manteca - General Plan 2023 includes a *Background Report on Archaeological Resources* (Windmiller 2002a), a *Background Report on Historical Resources* (Napoli 2002), and an *Appendix: Records Search Results Archaeological and Historic Resources* (Windmiller 2002b). These reports provide an overview of the study area and summarize recorded and potential archaeological sites. Recorded sites in the *Plan* include a Native American village site; segments of the Tidewater-Southern Railroad; a segment of the Western Pacific Railroad main line; segments on the Southern San Joaquin Irrigation District (part of Canal T and drainage canal, Canal R, and a drainage canal with no designation provided); the East Union Cemetery; the Kaiser Permanente Magnesium Plant; and, a number of buildings in Manteca. Potential sites include: 25 early ranches, French Camp Road, the Visalia Branch of the Central Pacific Railroad, the site of Moss's Ferry, schools (Windmiller 2002b) [CCIC Report SJO 4786].

Southwest Manteca Area Specific Plan Background Reports - Archaeological Resources, Historical Resources, Records Search Results (Windmiller and Napoli 2003). These reports are similar to those of the General Plan and provide an overview of the Southwest Manteca study area and summarize recorded and potential archaeological sites. They also include the original CCIC records search results for the Manteca General Plan (Greathouse and Hards 2001). The locations of buildings constructed before 1952 are mapped (Napoli 2003:5, Fig. 1). The records search appendix includes background about Mossdale, the community closest to the Specific Plan area. In addition, three surveys which included the Specific Plan area are reviewed (Chavez 1981; Napton 1988; Napton 1993). No previously recorded archaeological resources, historic era buildings, ranches, or bridges were identified in the Specific Plan Area. In addition, no cultural resources known to have value to local cultural groups (ethnic and

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Stewart Tract which was reclaimed in 1870-1880 (Chan 1986:166-167). Walthall Slough was present by 1879 (Thompson and West 1879:Map 3). Both the 1987 and 1996 USGS Lathrop topographic quadrangle map indicate that the levee has been rebuilt since 1952.

other) had been reported to the CCIC [CCIC Report SJ0 4901].

Native American Resources

- No prehistoric sites have been recorded, reported, or identified in or adjacent to the project.

The nearest recorded archaeological site, CA-SJo-165/H (P-39-000282), a major Yokuts village with a prehistoric, protohistoric and later EuroAmerican component, is approximately 0.5 miles northwest of the project on the east bank of the San Joaquin River or possibly a slough on the edge of the river. This approximately 200 x 220 meter diameter mound was composed of sandy stratified midden estimated at 2+ meters deep. The site included Native American burials and cremations, a variety of artifacts (e.g., small serrated obsidian and large stemmed projectile points; clamshell beads, steatite beads, and glass beads; manos, metates, bowl mortars; a steatite "jar"; and, introduced plants including tobacco and Jimson weed. The site appears to have been occupied form 3500 B.P. to possibly as late as the 1830s and is "thought" to have been abandoned as result of "malarial outbreak" (e.g., Napton 1993:8). The EuroAmerican component included a house built in 1870 and a variety of ranching structures and features.[20] Reportedly, this site was completely destroyed in 1972 (Johnson and Fosgate 1971/form; Aiken 1983:411).

- No known ethnographic or contemporary Native American resources, including villages, known trails, sacred places, traditional or contemporary use areas, have been identified in or adjacent to the project.

Historic Era Resources

- No historic era resources including landings, ferries, bridges, schools, have been identified in or adjacent to the project (e.g., Napton 1993:23 and other sources).

The *Southwest Manteca Area Specific Plan* places three buildings dating prior to 1952 in the eastern portion of project area and another structure dating prior to 1952 as south of the existing levee (Napoli 2003:5, Fig. 1). The three buildings, part of the complex present at 2368 E. Woodward Avenue (APN 241-260-05), appear to be still present while the building south of the levee is no longer extant.

LISTED CULTURAL RESOURCES

- No historic properties listed on local, regional, state and federal inventories and/or registers are located in or adjacent to the project area. No eligible, pending or known historic properties have been identified as a result of research conducted for the project.

FIELD REVIEW

- No indicators of prehistoric or significant historic era cultural material was observed during the field survey conducted May 25-27, 2005.

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20. Windmiller (2002:3, Table 1/Appendix Records Search Results) as "overlain by a historic settlement site."

Seven structures are shown on the 1996 USGS topographic map in a cluster north of the levee (2368 E. Woodward Avenue; APN 241-260-05). Five structures plus a mobile trailer/home are still present. Buildings A-E consist of: a Hay Storage building, a Garage/Sheds, a Prefabricated House (possible doublewide trailer), a Large Corrugated Metal Building, and an abandoned wooden Residence (possibly former field worker housing).

- Even though three of these buildings were identified as constructed before 1952 (Napoli 2003:Fig. 1), none of five structures appear to satisfy California Register of Historical Resources (CRHR) criteria 1-4, either individually or as a group.

UNKNOWN CULTURAL RESOURCES IN THE STUDY AREA

The research suggests a moderate archaeological sensitivity based on the few locations of recorded prehistoric and historic archaeological sites within a mile of the project area and archaeological compliance studies completed for the project areas. There appears to be a locally low potential for inadvertent discoveries of buried archaeological deposits during subsurface construction within the project location. Any archaeological deposits exposed during subsurface construction could contain potentially significant buried prehistoric and/or historic cultural materials, including Native American human remains. Disturbance could result in the loss of integrity of the cultural deposit and subsequent loss of scientific information, which would be a potentially significant impact.

IMPACTS

The CEQA Guidelines indicate that a project will have a significant impact on cultural resources if it:

- causes a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA guidelines;
- causes a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA guidelines; and/or
- disturbs any human remains, including those interred outside of formal cemeteries.

Ground-disturbing construction activities have the potential to directly impact potential cultural resources in the project area by disturbing both surface and subsurface soils. Subsurface and surface disturbance could result in the loss of integrity of cultural deposits, loss of information, and the alteration of a site setting. There is also the potential for inadvertent discoveries of buried archaeological materials during construction, although the small number of recorded sites in the general area suggests a low potential. These impacts will be reduced to less than significant with implementation of the mitigation measures listed in *Mitigation Measures*.

MITIGATION MEASURES

Mitigation measures are provided in the event that significant or potentially significant unknown

prehistoric or historic cultural resources[21] are discovered during construction. Significant and potentially significant impacts to cultural resources will be reduced to a less-than-significant level with the adoption of the following mitigation measures which are consistent with the Southwest Manteca Specific Plan (SWMSP).

- Prior to the initiation of construction or ground-disturbing activities, the project proponent will inform all construction personnel who will be undertaking ground disturbing excavation of the potential for exposing subsurface archaeological resources and to recognize possible buried cultural resources. The project proponent will inform all construction personnel of the procedures that will be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains and their treatment.

- If any significant cultural materials are exposed during construction operations such operations shall stop within 50 feet of the find and a qualified archaeologist or historian shall be called to evaluate the find and to recommend proper action. The Archaeologist shall review, identify and evaluate any finds exposed during construction and develop a treatment plan if the cultural materials are found to be significant according to CEQA. Appropriate mitigation of the cultural resources may include monitoring of further construction and/or systematic excavation of the resources. Any artifacts or samples collected during monitoring or mitigation phases shall be catalogued, analyzed and

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21. Significant prehistoric cultural resources may include:

a. Human bone - either isolated or intact burials.

b. Habitation (occupation or ceremonial structures as interpreted from rock rings/features, distinct ground depressions, differences in compaction (e.g., house floors).

c. Artifacts including chipped stone objects such as projectile points and bifaces; groundstone artifacts such as manos, metates, mortars, pestles, grinding stones, pitted hammerstones; and, shell and bone artifacts including ornaments and beads.

d. Various features and samples including hearths (fire-cracked rock; baked and vitrified clay), artifact caches, faunal and shellfish remains (which permit dietary reconstruction), distinctive changes in soil stratigraphy indicative of prehistoric activities.

e. Isolated artifacts

Historic cultural materials may include finds from the late 19th through early 20th centuries. Objects and features associated with the Historic Period can include.

a. Structural remains or portions of foundations (bricks, cobbles/boulders, stacked fieldstone, postholes, etc.).

b. Trash pits, privies, wells and associated artifacts.

c. Isolated artifacts or isolated clusters of manufactured artifacts (e.g., glass bottles, metal cans, manufactured wood items, etc.).

d. Human remains.

In addition, cultural materials including both artifacts and structures that can be attributed to Hispanic, Asian and other ethnic or racial groups are potentially significant. Such features or clusters of artifacts and samples include remains of structures, trash pits, and privies.

evaluated along with associated documentation in a professional manner consistent with current archaeological standards. A professional report shall be prepared in accordance with current archaeological standards.

- The discovery of Native American burials shalll be handled in accordance with state law and the direction of the county coroner as per Section 7050.5 of the California Health and Safety Code.

CLOSING REMARKS

If I can provide any additional information or be of further service please don't hesitate to contact me. Thank you for retaining our firm for the project.

Sincerely,
BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby Ph.D., R.P.A.
Principal

CIB/j
Enclosures

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Abbreviations

n.d. no date
v.d. various dates
N.P. no publisher noted
n.p. no place of publisher noted

Note: The abbreviated phrase "CHRIS/CCIC, CSU Stanislaus, Turlock" is used for material on file at the California Historical Resources Information System, Central California Information Center, California State University, Stanislaus at Turlock and CHRIS/NWIC is used for the Northwest Information Center, California State University Sonoma at Rohnert Park.

ATTACHMENTS

LIST OF FIGURES

FIGURE 1 GENERAL PROJECT LOCATION

FIGURE 2 PROJECT LOCATION (USGS Lathrop, Calif. 1996 and Vernalis, Calif. 1991)

FIGURE 3 PROJECT AREA (keyhole.com Aerial Photograph)

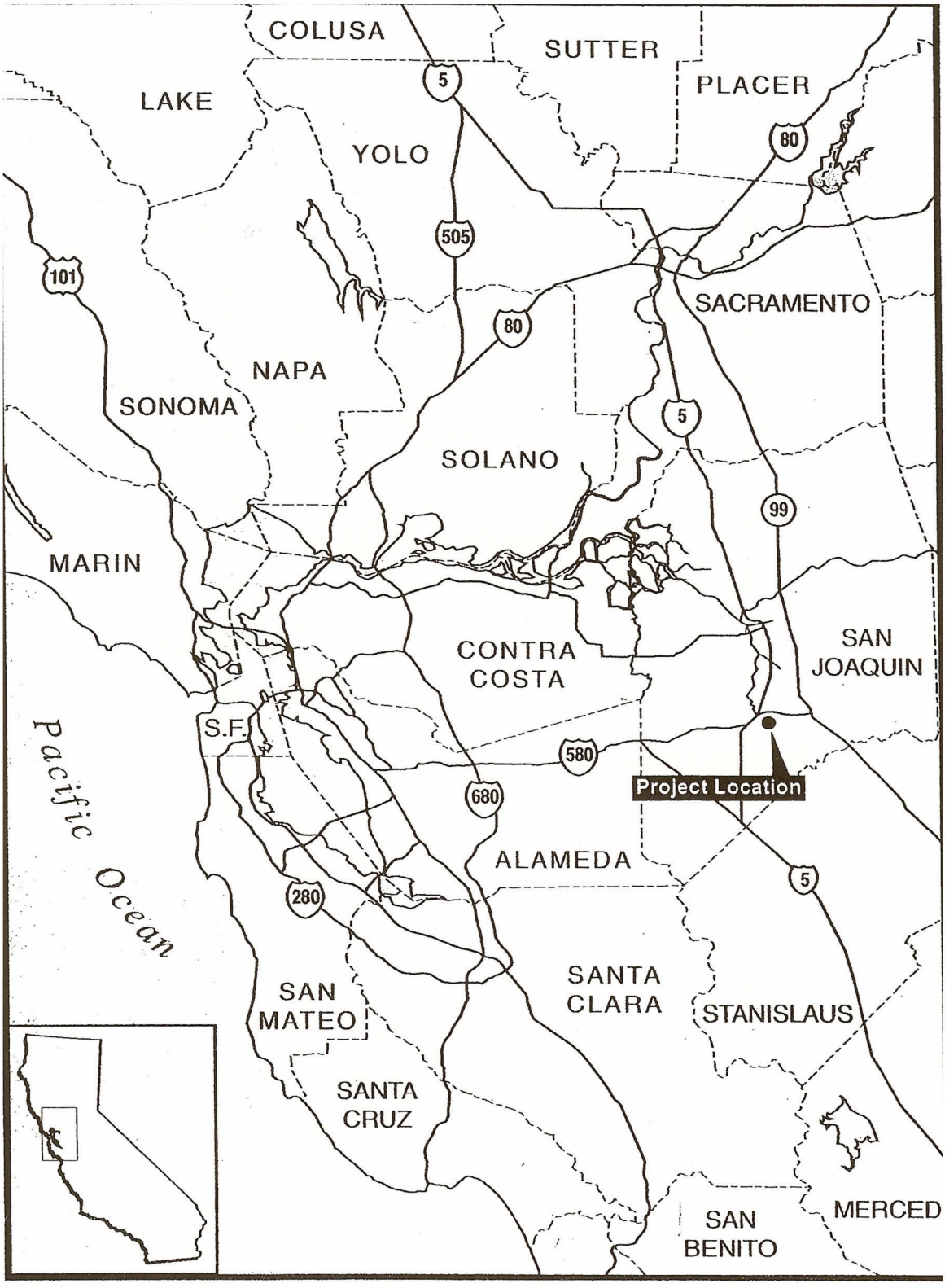


Figure 1: General Project Location

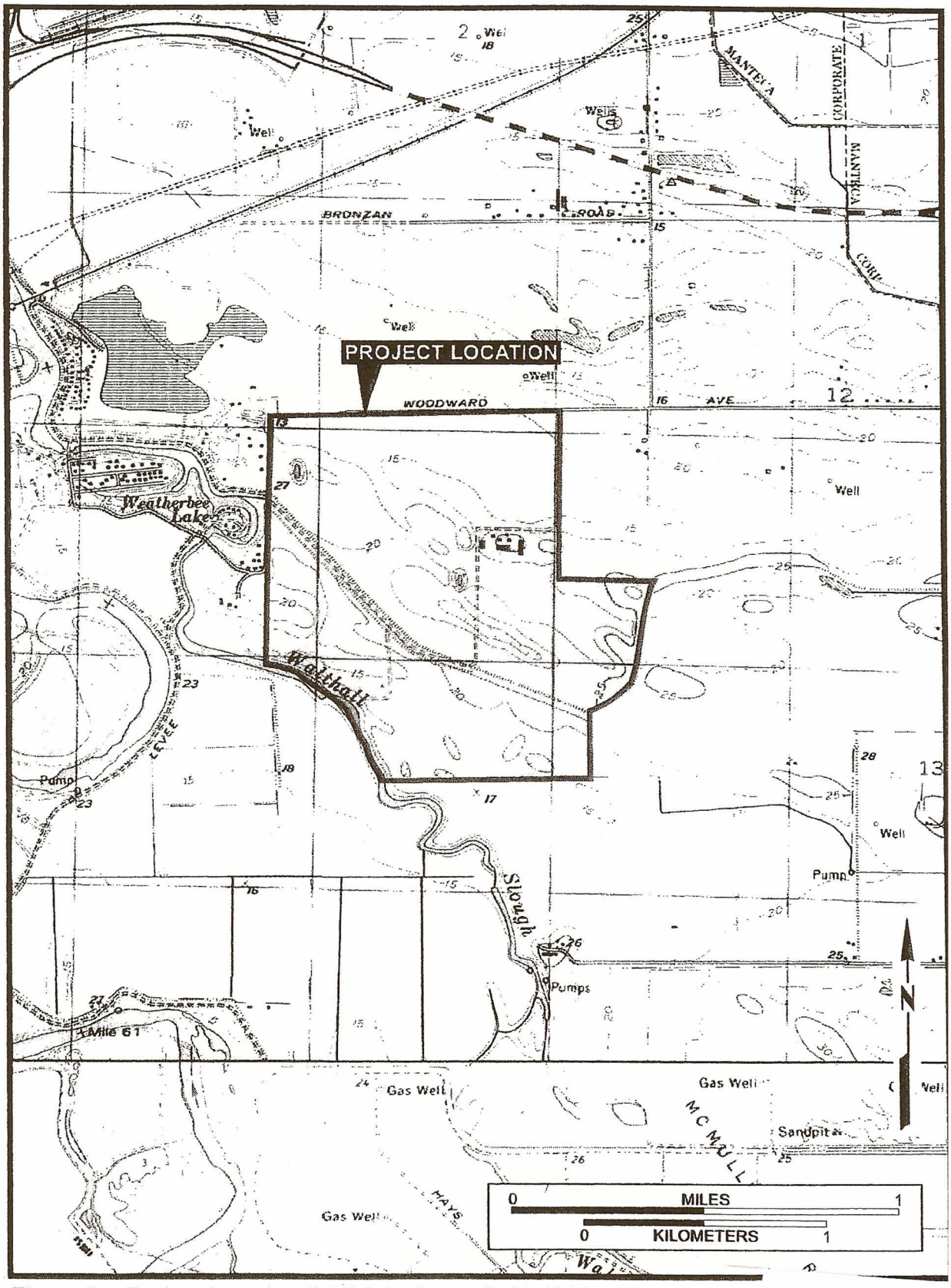


Figure 2: Project Location (USGS Lathrop, Calif. 1996 and Vernalis, C

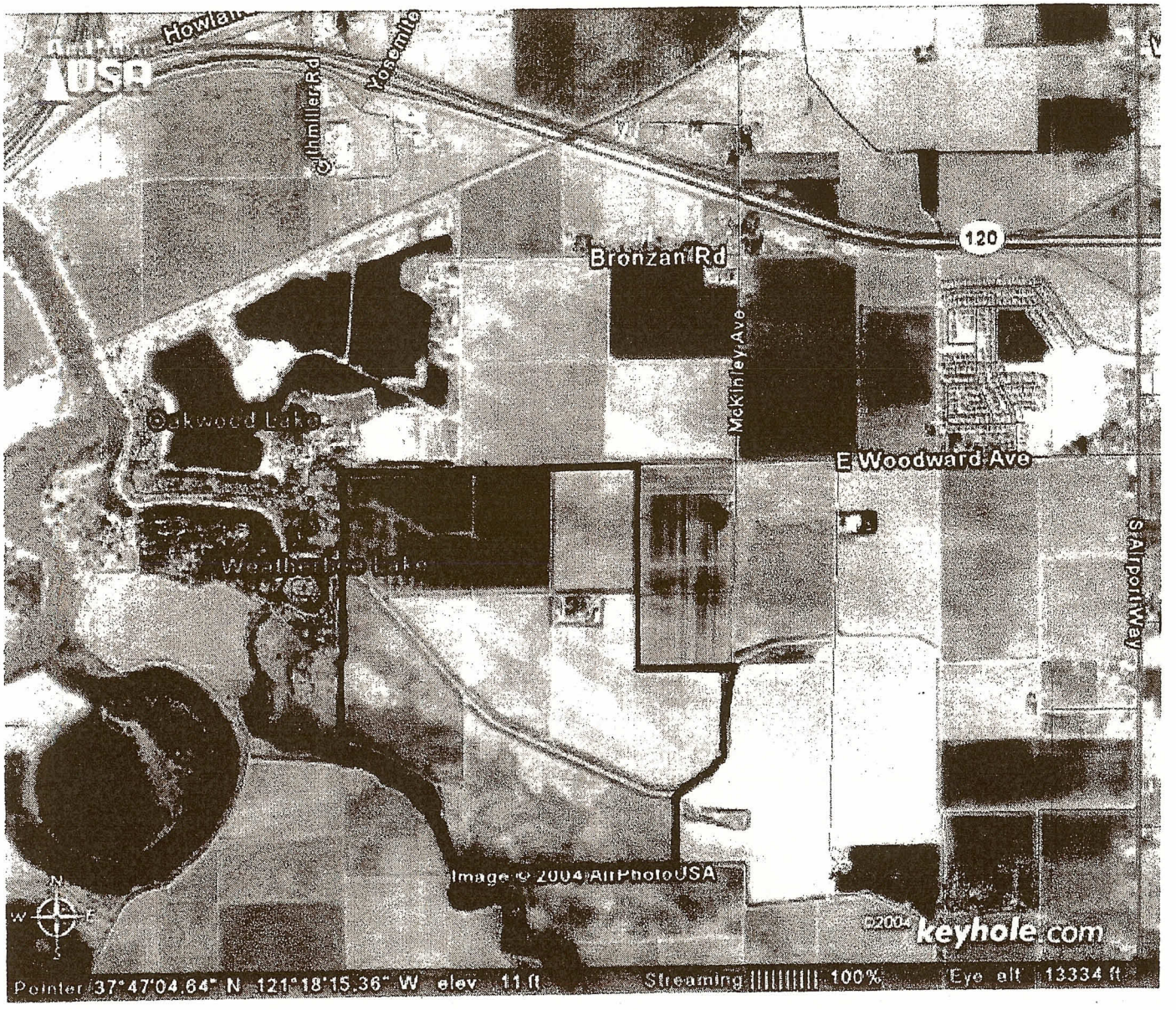

AllPhotoUSA
Howlan
Thmiller Rd
Yosemite
Bronzan Rd
120
McKinley Ave
Oakwood Lake
E Woodward Ave
Wealthy Lake
S Airport Way
Image © 2004 AllPhotoUSA
©2004 keyhole.com
Pointer 37°47'04.64" N 121°18'15.36" W elev 11 ft
Streaming 100%
Eye alt 13334 ft

Figure 3

E.2 - Primary Record Form

State of California — The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI #

PRIMARY RECORD

Trinomial _____

NRHP Status Code Other

Listings
Review Code Reviewer Date

Page 1 **of** 2 ***Resource Name or #:** Manteca1

P1. Other Identifier:

*__P2. Location:__ ☐ **Not for Publication** X **Unrestricted**

***a. County** San Joaquin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Lathrop **Date** 1996 **T** 2S; **R** 6E; **of Sec** 11 and 14; Mt Diablo **B.M.**

c. Address 2368 E. Woodward Avenue City Manteca Zip 95337

d. UTM: (Give more than one for large and/or linear resources) Zone __, _____ mE/ _____ mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

Structures are located 0.40 mile west of the intersection of McKinley Avenue and Woodward Avenue and approximately 0.34 mile south of Woodward Avenue, Manteca.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Site consists of 5 buildings situated in a small cluster;brief descriptions follow.

Building A – Hay Storage A large open structure approximately 130 feet long by 60 feet long on the east side of the building cluster. The building has a low-pitch corrugated aluminum gable roof supported by 20 painted wood posts that are approximately 30 feet high.

Building B – Garage/Sheds Structure is composed of four conjoining corrugated metal buildings. The buildings vary in size but all seem to be used for storage or as garages.

Building C – Prefabricated House (possible doublewide trailer) Residence with vertical wood siding, a low-pitch asphalt shingle gable roof with a small entry porch and eight aluminum windows.

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



Building D – Large Corrugated Metal Building (warehouse?) Measuring approximately 70 feet x 40 feet, this structure has a gable roof and wood framing and is open at the north and south ends.

Building E – Residence An abandoned wood building, possibly used for agricultural worker housing. This four-room building measures ~80 feet x 18.5 feet and is elevated approximately 2 feet off the ground on wood supports.

None of buildings appeared to meet any of the four criteria for listing on the California Register of Historical Resources(CRHR)individually or collectively, nor did they appear to meet any criteria for local listings.

***P3b. Resource Attributes:** (List attributes and codes) HP2

***P4.Resources Present:** XBuilding XStructure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo:Overview of buildings, facing south. Access onto property was denied during field survey so descriptions are based on a survey conducted by Basin Research in 2005 (Archaeological Resources Assessment for Feasibility Study) and were field checked with binoculars during this 2010 survey.

***P6.Date Constructed/Age and Source:** X Historic ☐ Prehistoric ☐ Both ***P7.Owner and Address:** Unknown

***P8. Recorded by:** Carrie D. Wills, MA RPA; Michael Brandman Associates, 2633 Camino Ramon, San Ramon, CA 94583
***P9. Date Recorded:** August 9, 2010
***P10.Survey Type:** (Describe) Reconnaissance ***P11. Report Citation**: (Cite survey report and other sources, or enter "none.") City of Manteca, Trails of Manteca Project September 2010; Michael Brandman Associates
***Attachments:** X NONE ☐Location Map ☐Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):



Additional photograph of buildings and structures; facing south

Appendix F:
Geotechnical Investigation

PRELIMINARY
GEOTECHNICAL INVESTIGATION
on
PROPOSED TRAILS OF MANTECA
Manteca, California
for
Weatherbee Properties, LLC

By

TERRASEARCH, inc.

Project No. 11515.G
29 May 2007

Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
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IIGER06045.0M

Environmental • Geotechnical • Special Inspections • Materials Testing
TERRASEARCH INC.
SERVING NORTHERN CALIFORNIA SINCE 1969

Project No. 11515.G
29 May 2007

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Ms. Arlene Utal
Weatherbee Properties, LLC
3000 Danville Boulevard, Suite F #545
Alamo, California 94507

Subject: Proposed Trails of Manteca
APNs: 241-260-05; 241-040-04; -05; 241-240-02 and -03
20601, 20611, and 2368 East Woodward Avenue
Manteca, California
PRELIMINARY GEOTECHNICAL INVESTIGATION

Dear Ms. Utal:

In accordance with your authorization, ***TERRASEARCH, inc.*** has investigated the geotechnical conditions at the subject site located in Manteca, California.

The accompanying report presents the results of our preliminary field investigation. Previously, we performed a preliminary geotechnical investigation for the site. Some data from this previous study have been used to prepare this report. Our recent findings in conjunction with our previous work indicate that development of the site for residential housing is feasible. This report contains general geotechnical recommendations for use in planning. A design level investigation would be needed at a later date.

Should you have any questions relating to the contents of this report or should additional information be required, please contact our office at your convenience.

Reviewed By:

Very truly yours,
TERRASEARCH, inc.

REGISTERED PROFESSIONAL ENGINEER
SIMON MAKDESSI
NO. 2548
Exp. 6-30-2007
GEOTECHNICAL
STATE OF CALIFORNIA

Simon Makdessi, P.E., G.E.
Vice President

Kamran Ghiassi, Ph.D., P.E.
Senior Engineer

Copies: 6 to addressee

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GEOTECHNICAL INVESTIGATION

Purpose and Scope

The purpose of this investigation was to evaluate the geotechnical conditions at the site of the proposed residential development located on 20601, 20611, and 2368 East Woodward Avenue (The Trails of Manteca) in Manteca, California. Based on the results of the investigation, preliminary criteria were established for the grading of the site, design of foundations for the proposed structures, pavement, and the construction of other related facilities on the property.

Our scope of services included the following:

a) Evaluation of the geologic and seismic setting of the site;
b) Field reconnaissance by the Soil Engineer;
c) Review of available geotechnical report;
d) Analysis of the data and formulation of preliminary conclusions and recommendations; and
e) Preparation of this written report.

Proposed Development

Based on discussions with you and a review of the Alternative D of the Trail of Manteca Conceptual Site Plan submittal dated March 14, 2007, the proposed The Trails of Manteca development generally consists of five separate parcels totaling approximately 480 acres (formerly Baird Property) within a larger 1,400 acre parcel. TERRASEARCH, inc. has conducted a preliminary geotechnical investigation report for the 480 acre Baird Property and we have reviewed a levee evaluation report by ENGEO for River Run, approximately 6 miles north of the proposed development. We understand that you plan developing approximately 480 acres of land for residential neighborhoods of varying densities, parks, roads and miscellaneous open

spaces, detention basins and associated infrastructure improvements. We also understand that approximately 180 acres of the land will be dedicated to flood plain/levee.

Site Location and Description

The subject property consists of a total of approximately 480 acres of agricultural land located in the north-central portion of San Joaquin County in the southwestern of portion Manteca, California. The property is bounded to the north by East Woodward Avenue, to the west by South Woodward Avenue, the existing residences, and Weatherbee Lake, to the southwest by the Walthall Slough, to the south and to the east by several open lots.

The site is currently being used for agricultural purposes. The subject site is occupied by five structures, one trailer home, an almond orchard, row crops, irrigation system, and above ground storage tanks. An abandoned PG&E natural gas steel pipeline is present in the eastern and north eastern areas of the site. An existing levee diagonally bisects the site in an approximate north-west to south-east direction. The area of the proposed development is planned to be north of this levee and comprises approximately 275 acres.

Based on the most recent USGS historical topographic (1987), the topography at the subject site is approximately 15-feet above mean sea level (msl) on the north-northwestern portion, while ranging from 20 feet to 25 feet above msl on the south-southwestern and eastern portions, respectively. Weatherbee Lake is situated immediately west and the San Joaquin River is mapped approximately 3,500 feet west of the site. Drainage appears to follow the local topography from southeast toward to the northwest, along the local topography.

This description of the site is based on a reconnaissance by the Soil Engineer.

Aerial Photographic Site Features

The history of the site was deduced from examination of historical aerial photographs, and historical topographic maps. A Sanborn Map and City Directory search were also conducted for the subject site. No Sanborn Fire Insurance Maps were available for the subject site or its

surrounding. No City Directory was available for the subject site (Haines Criss-Cross Directory).

TERRASEARCH, inc. has examined seven (7) aerial photographs and six (6) historical topographic maps of the subject site and vicinity, which were provided by Pacific Aerial Surveys and EDR. Data for the photographs are tabulated below:

AERIAL PHOTOGRAPHS EXAMINED

Flight Date	Approximate Scale	Identification Number
05-01-1968	1:30000	AV844-32-07, 08
04-26-1985	1:63360	AV2600-18-20, 21
05-05-1989	1:63360	**AV-3600-18-31, 32**
07-24-1992	1:12000	AV-4230-0156-50; AV-4230-0157-49
08-06-1996	1:12000	AV-5202-12-45; AV-5202-13-42
09-22-1999	1:12000	AV-6100-156-51; AV-6100-157-53
09-09-2002	1:24000	AV-8244-8-26

Aerial photographs indicated few changes at the subject site over the past 34 years (1968 to 2002). In 1968, the subject site was located within an agricultural district of San Joaquin County and surrounded by similar agricultural properties. Irrigation ditches and a levee road trending northwest to southeast were observed on the site. Parcels APNs 241-040-04 & -05 (20601 and 20611 South Woodward Avenue) appeared vacant and was covered with isolated trees. A driveway was observed east of 20601 South Woodward Avenue. An object similar to a structure and the current pumping station were observed on the above mentioned parcels. A total of six structures consisted of four barns and one residence (current residence) and an out building were observed east of the residence at 2368 East Woodward Avenue. Weatherbee Lake and residences were located to the west, Walt Hall Slough and vacant land were observed to the south, vacant land and ranches were observed to the east, Woodward Avenue and vacant land bounded the site to the north. San Joaquin River was observed to the west and railroad tracks were situated farther north of the site. No changes were observed on the site in 1985. However, a residential development and lake were observed immediately northwest, across Woodward

Avenue. State Highway 120 and 205 were situated north and northwest of the site. Seasonal crops were observed on the site in 1989. Ranches and other agricultural development increased in the surround area and around Weatherbee Lake. By 1992, row crops were observed on the site. A parking lot was constructed northwest across Woodward Avenue and orchards were observed to the southeast. The subject site remained unchanged in 1996 and 1999. Orchards were observed on the northwestern portion of the subject site in the aerial photos of 2002. A total of seven structures (barns, residence and outbuildings) were present at 2368 East Woodward Avenue. Irrigation ditches were observed on the site and dense trees were observed on the western portion of the site, near Weatherbee Lake.

Review of the Available Reports

Terrasearch, Inc. prepared a preliminary geotechnical investigation, Phase I and Phase II Environmental Site Assessment reports for the site in 2005. We reviewed these reports as part of our scope of work and some data from this previous study have been used to prepare this report.

Evaluation of the Existing Levee

In an effort to evaluate the condition of the existing levee, we contacted Mr. Chris Nodeks of the Reclamation District #17. Mr. Nodeks told us that a report was prepared by Kleinfelder Inc. on the stability of the existing levee. Kleinfelder performed five soil borings in 1989 to maximum depths ranging from 30 to 40 feet below the top of the levee along the Walthall Slough bordering the site. According to soil samples from these borings, the levee and foundation consisted of loose to medium dense fine grained, silty sand to maximum depths of exploration. Groundwater was encountered at about 13 to 18 feet below the top of the levee.

According to the Kleinfelder report, the computed factor of safety against sliding for the soil conditions and configurations shown on Plate B-5 (not available to us) varies from 2.0 to 3.8. Based on the main text of the Kleinfelder report, it appears that levees on either side of the Walthall Slough bordering the subject project are statically stable with a factor of safety greater than 1.4 and 1.2 for long-term and rapid drawdown conditions, respectively (as required by U.S. Army Corps of Engineers (COE) Design and Construction Manual, EM 1110-2-1913, 2000).

The COE design manual requires stability evaluation of each levee under earthquake loading. We did not find any stability analysis under earthquake loading condition.

Geologic Setting

The subject site is within the Coast Ranges geomorphic province, a belt of sedimentary, volcanic, and metamorphic rocks, which extend from southern California to Oregon. The structural geology of the Coast Ranges is complex and dominated by transpressive stress (combined transform and compressional) concentrated along faults within the San Andreas Fault system. On the eastern portion of the San Francisco Bay, bedrock geology consists of sedimentary and metamorphic rocks ranging from Cretaceous through Quaternary periods (up to 144 million years to present).

The subject site is located in the southwestern portion of Manteca in the eastern portion of the greater San Francisco Bay Region, California. According to the Geologic Map of California by Charles W. Jennings (1977), published by California Department of Conservation, Division of Mines and Geology, the material underlying the subject site are consisted of Quaternary, Pleistocene-Holocene (Q) consolidated and semi-consolidated alluvium, lake, playa and terrace deposits.

The Great Valley 7 Blind Thrust Fault Zone is located approximately 18-kilometers (km) west of the subject site. Blind thrust faults are not regulated through the Alquist-Priolo (AP) Earthquake Fault Zones Act (CGS, 1994); however are regulated through the Seismic Hazards Act (CGS, 1997). This site is not located within an Alquist-Priolo Earthquake Zone, nor is located within a Seismic Hazard Zone (CDMG, 1997).

The site is not located within an AP zone, but is located within a Seismic Hazard Zone (DMG, 1997). Other faults located within a 50 km radius of the site are shown on Table 1, based on the EQFAULT computer program by Thomas Blake.

Table 1
Earthquake Fault Zone Data

Fault Name	Fault Type	Distance (km)	Fault Magnitude (M_w)
Great Valley 7	Blind Thrust	17	6.7
Greenville	Strike-Slip	33	6.9
Great Valley 8	Blind Thrust	39	6.7
Mount Diablo	Blind Thrust	47	6.7
Great Valley 5	Blind Thrust	53	6.7

Seismic Considerations

Damage to structures related to fault movement may be divided into two categories:

a) Primary deformation such as displacement of a structure located directly on a fault and violent ground shaking; and

b) Secondary failure such as lurch cracking, landsliding, liquefaction, and differential compaction.

Surface faulting or ground rupture tends to occur along lines of previous faulting. Since previously identified fault lines are not within the site or project toward the site, the possibility of surface fault rupture is negligible within the subject property.

Ground shaking is a complex concept related to velocity, amplitude, and duration of earthquake vibrations. Damage from ground shaking is caused by the transmission of earthquake vibrations from the ground to the structure. The most destructive effects of an earthquake are usually seen where the ground is unstable and structures are poorly designed and constructed. Maximum acceleration in soil is based on the attenuation relationships formulated by Sadigh and Chang (1997) and Abrahamson and Silva (1997). FRISKSP computer program by Blake (2004) was used to calculate site-specific probabilistic peak ground accelerations (PGA) for the site. FRISKSP is a computer program for the probabilistic estimation of seismic hazard using three-dimensional faults as earthquake sources.

Using a 10% probability of exceedance within 50 years with maximum-horizontal ground acceleration was calculated for the site at 0.25g. This calculation considered all active earthquake fault zones within a 100-kilometer radius of the site and a return period of 475 years.

The secondary hazards of liquefaction, lateral spreading, differential compaction and ground lurching are likely due to the nature of the subsurface materials. The site will experience strong ground shaking if a large earthquake occurs along the Great Valley Fault (Segment 7).

The property is situated on flat land; therefore the secondary risk of landsliding is not probable. Since the subject site is not located near the ocean or on a lakefront, the secondary hazards of tsunamis and seiches are not probable.

Subsurface Conditions

Based on our previous work at the site, the site is underlain by loose to dense clayey sand and sand, extending to the maximum depth of exploration ranging from 31.5 to 41.5 feet. A 7-foot thick firm silty clay was encountered in B-1 at about 9 feet below the existing ground surface.

Free water was not encountered during drilling within the depths explored due to rotary wash drilling method. However, free water encountered in one of the monitoring wells (MW-4) installed during this investigation at about 8 feet below the existing ground surface. Free water was also encountered during the Phase II environmental site assessment performed by Terrasearch Inc. The depth to groundwater varies between about 6 to 18 feet. However, fluctuations in the groundwater level can occur due to variations in seasonal rainfall and urbanization of the subject property and surrounding area.

The classifications of the soil encountered in the borings were based on a visual classification in the field by the project engineer. A more thorough description and stratification of the soils encountered along with the results of the laboratory tests are presented on the respective, “Logs of the Test Borings”, Appendix A. The approximate locations of these borings are shown on Figure 2, “Site Plan”, Appendix A.

UBC Earthquake Design Criteria

The 1997 Uniform Building Code (UBC) Chapter 16, Division IV Earthquake Design requires that structures be designed using certain earthquake design criteria. The criteria are based in part on the seismic zone, soil profile and the proximity of the site to active seismic sources (faults). During an earthquake event, structures located very close to active faults can be subjected to near source energy motions that may be damaging to structures, if the effects of these energy motions are not considered in the structural design. The UBC indicates that the types of seismic sources (active faults) that generate near source (N_a and N_v) greater than 1.0 are classified as Type A or Type B. The nearest Type A or Type B active fault to the site is the Great Valley Fault (Segment 7), which is located approximately 17 km southwest of the subject site and is categorized as a Type B fault.

Based on the geotechnical data in the referenced report and the selection of criteria of the 1997 UBC, Chapter 16, Division IV, Earthquake Design, a summary of the earthquake design criteria for use in the design of the proposed structures is as follows:

Seismic Zone	=	3
Soil Profile Type	=	S_D
Near Source Factor N_a	=	1.0
Near Source Factor N_v	=	1.0

Liquefaction Potential Evaluation

Soils most susceptible to liquefaction are loose, clean, saturated, uniformly graded, fine to medium-grained sands. In addition, loose silty sands, non-plastic silts, and in some cases low plasticity clayey sands may also experience liquefaction during strong ground shaking. In general, liquefaction can result in settlement of the layer; sand boil formation; lateral spreading; buoyancy of below-grade facilities; and bearing failures or reduced foundation support. Under earthquake stresses, these soils become “quick”, or a temporary reduction of strength resulting from a buildup of excess pore water pressure, especially during cyclic loading, such as those induced by earthquakes and become incapable of supporting the weight of the overlying soils or structures. The data used for evaluating liquefaction potential of the subsurface soils consisted of: the penetration resistance, the soil classification, the relative density of materials, and the

groundwater level. This subsurface investigation indicated that loose to medium dense sands of varying fines content exists as a layer of up to 25-feet thick. Late Pleistocene and Holocene alluvial deposits generally are considered to have high susceptibility to the liquefaction potential. We have estimated volumetric strain of liquefiable and non-liquefiable sandy soils using Ishihara & Yoshimine (1992) empirical method based on the performance of liquefied sites in previous earthquakes. In April 2007, Professor Leslie Youd, a leading researcher in the field of liquefaction and lateral spreading evaluation, presented a revised method of liquefaction and lateral spreading evaluation. We will apply this recently presented method to re-evaluate liquefaction-induced settlement and lateral spreading for the subject property. Based on the results of our evaluation, it is estimated that the loose to medium dense sandy soils at the site could experience some vertical strain. The silty clay layer which was encountered in B-1 was not considered to be potentially liquefiable according to the recent liquefaction criteria for fine materials. Based on the estimated thicknesses of the sandy soils, the estimated seismically-induced areal settlement of the site would range from approximately 1 to 1½ inches. Since there is no non-liquefiable cap above the liquefiable layer, it is likely that sand boils may occur if the groundwater is high and during ground shaking. Minor ground damage in the form of cracks may develop in localized areas, particularly where differential settlements due to liquefaction occur.

Lateral spreading is also another phenomenon which could occur during a seismic event. Lateral spread is a type of ground failure associated with movement of an overlying surficial soil mass along a shear zone associated with a liquefiable sediment. Two types of lateral spread may occur these being 1) lateral spread toward a free face wherein the shear/liquefiable zone is exposed on or near the free face, and 2) lateral spread down gentle ground slopes where a free face is not present. In both cases the shear/liquefiable zone has to be continuous. The magnitude of lateral spreading depends on many factors, including distance to the free face, site geometry, earthquake magnitude, properties of the liquefiable layer and overlying layer and the continuity/discontinuity of potentially liquefiable soil layers.

The continuity/discontinuity of potentially liquefiable soil layers is a key consideration in evaluating the potential for lateral spreading. For significant lateral spreading to occur, a continuous layer of potentially liquefiable soil extending for a considerable distance (on the order of several hundred feet) with corrected blow count of less than 15 would be required.

Based on our limited work and due to presence of the material with corrected blow count of 15 or higher at about 5 to 15 feet, and assuming the slough is less than 15 feet in depth from the adjacent ground surface, we judge that the potential for lateral spreading within the site from the Walthall Slough to be low. Once the layout of the proposed structures is known, the estimated lateral displacement can be calculated.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

General

1. From a geotechnical point of view, construction of the proposed residential development on the site is feasible provided the recommendations presented in this report are incorporated into the project plans and specifications. This study did not assess contamination of on-site soils and water. We understand that a detail Phase II environmental site assessment will be prepared by Terrasearch, Inc.

2. The most prominent geotechnical features of the site are the presence of loose to medium dense soils near surface. Appendices of the Kleinfelder report were missing from our copy, from the body of the report; it does not appear that liquefaction potential of the levee and foundation were evaluated. According to federal guidelines for dam safety 2005, triggering of liquefaction of the materials underlying the foundation and levee should be performed using recent liquefaction evaluation procedure. If liquefaction would be triggered by the evaluation earthquake, a conventional slope stability evaluation using post-earthquake properties and conditions should be made to determine whether instability would result. Hence, slope stability evaluation using post-earthquake properties and conditions should be performed.

3. This report contains general preliminary recommendations for grading, foundations and pavement due to limited exploration program performed at this phase of the study and the results are intended to provide information for due diligence and project planning.

4. The extent of grading is currently not known, however, we preliminarily understand that some fill up to 5 feet thick may be needed in areas. Due to the presence of loose sands, the placement of fill plus a structure will create settlement. The degree of settlement will depend on the load imposed. We will provide settlement estimates during the design level investigation. Any settlement would be essentially complete soon after construction. The design of foundations and slope of gravity utilities will need to take into account the estimated settlements.

5. As indicated earlier, the depth to groundwater varies from 6 to 18 feet. The underground contractor must be made aware of this to determine if the construction of any utilities will be affected. Provisions for dewatering and trench support must be included in areas where trenches will extend to below the water table.

Site Preparation

6. Prior to any grading, demolition of the site should be completed. Demolition should include the complete removal of all surface and subsurface structures. If any of the following are encountered: concrete, septic tanks, gas and oil tanks, storm inlets, foundations, asphalt, machinery, equipment, debris, and trash, these should also be removed with the exception of items specified by the owner for salvage. The owner should specify the saving or removal of shrubs or trees on the site. Removal of the underground fuel tank (if any) must be in accordance with the federal and state regulations. In addition, all known underground structures must be located on the grading plans so that proper removal may be carried out. **It is vital that *TERRASEARCH, inc.* intermittently observe the removal of subsurface structures and be notified in ample time to ensure that no subsurface structures are covered and that the root systems from grubbing operations are completely removed. If *TERRASEARCH, inc.* is not contacted to observe the demolition and removal of subsurface structures, then further backhoe investigation will need to be performed prior to the commencement of mass grading. If hazardous materials are encountered during the demolition or site grading process, it is the owners responsibility to notify the responsible public agencies which may include but not limited to San Joaquin County Health Services Department, Regional Water Quality Control Board, and City of Manteca Building Department.**

7. It is recommended that any excavations greater than one foot deep created during demolition in planned fill areas be left open for backfill during mass grading. If such excavations are covered or filled with loose material, then the areas will need to be subexcavated during mass grading and properly backfilled under our observation.

8. Excavations made by the removal of any structure or the existing fill should be backfilled under the observation of the Soil Engineer in accordance with the requirements for engineered fill. Any existing undocumented loose fills, or soil deemed soft or unsuitable by the Soil Engineer, exposed by the demolition operations, shall be excavated and removed as required by the Soil Engineer during grading. Any resulting excavations should be properly backfilled with engineered fill under the observation of the Soil Engineer. If any excavations are loosely backfilled without our observation and these excavations are not located and backfilled with engineered compacted fill during grading, future settlement of the loose backfill will occur and may cause damage to structures and improvements.

Grading

9. The grading requirements presented herein are an integral part of the grading specifications presented in Appendix C and should be considered as such.

10. Grading activities during the rainy season will be hampered by excessive moisture. Grading activities may be performed during the rainy season, however, achieving proper compaction may be difficult due to excessive moisture; and delays may occur. In addition, measures to control potential erosion may need to be provided. Grading performed during the dry months will minimize the occurrence of the above problems.

11. Old foundations can be ground and the resulting aggregate used as a recycled Aggregate Base Product. If any loose soils are encountered, all of the loose soils must be removed or properly compacted. Stripping of organic matter in the agricultural area at the site may be required. The depth and type of stripping will be evaluated by the Soil Engineer just prior to the commencement of grading activities. The resulting exposed soils after stripping should be observed by the Geotechnical Engineer before subsequent construction is performed. Stripping materials that contains organic material and debris may be hauled off the site or used for landscaping purposes, as designated by the landscape architect or can be mixed with on-site soil subject to the approval by the Soil Engineer.

12. Following stripping and/or removal of any loose soil, the top 8 inches of exposed ground for fill areas should be scarified and compacted to a minimum degree of relative compaction of 90% at 2 percent above optimum moisture content as determined by ASTM D1557-91 Laboratory Test Procedure. After recompacting the subgrade, the site may be brought to the desired finished grades by placing engineered fill in lifts of 8 inches in uncompacted thickness and compacting to the relative compaction requirements in accordance with the aforementioned test procedure. The near-surface soils encountered during our investigation would be suitable, from a geotechnical perspective, for use as engineered fill when placed and compacted at the recommended moisture content. The criteria for suitability of the soils are presented in the following paragraph.

13. Should import material be used to establish the proper grading for the proposed development, the import material should be approved by the Soil Engineer before it is brought to the site. The Soil Engineer should approve the import material before it is brought to the site. Import material should meet the following requirements:

a. Have an R-Value of not less than 25;
b. Have a Plasticity Index not higher than 16 (see Foundation section);
c. Not more than 15% passing the No. 200 sieve;
d. No rocks larger than 6 inches in maximum size;
e. Have a pH of 6.5 to 7.5;
f. Have a minimum resistivity of 5000 ohms/cm; and
g. Have a maximum soluble sulfate content of 0.2% by weight.

14. Import material meeting the requirements above should be compacted to a minimum relative compaction of at least 90% at a moisture content of 3% above optimum as determined by ASTM D1557-91 Laboratory Test Procedure. All engineered fill should be placed in lifts not exceeding 8 inches in uncompacted thickness. If import material is used as engineered fill, a Registered Environmental Engineer should provide a letter stating that the import soils are free of contamination and deleterious materials

15. Cuts into the native loose soil for use as fill will undergo shrinkage of the order of 15% to 25%. An evaluation of shrinkage can be performed as part of the design level geotechnical investigation.

16. Cut lots must be compacted in place to obtain a minimum relative compaction of 90% in the upper one foot within the building footprint and 5 feet beyond the building footprint. This can be accomplished by either proof-rolling or directing the earthmoving equipment haul route to travel across the building footprint area. In either case, moisture must be applied prior to compacting.

17. After the pads have been finish graded, the surface compaction of the pads will become lower over time, and the pads will also suffer significant disturbance due to construction equipment or material storage on the pads during house construction. It is recommended that the pads be evaluated for disturbance prior to foundation construction.

18. Cut and fill slopes up to 10 feet in height should not be steeper than 2:1 (horizontal to vertical). All cut slopes should be rounded at the upper extremities.

19. Due to the sandy nature of the site materials, all slopes may experience gully or rill erosion, mainly from precipitation and/or over-irrigation. Mitigation for erosion includes, but is not limited to the following: placement of vegetation; placement of top soil; and/or inclining slopes at 3:1 (horizontal to vertical) or flatter.

20. Fill slopes must be compacted as the filling operation progresses by (1) using sheepsfoot-type rollers in conjunction with proper moisture conditioning, or (2) over-constructing the fill slopes and cutting back the looser surface soils to a firm and adequately compacted designed slope grade. Track -walking of slope surfaces does not provide adequate soils densities and is an unacceptable method of slope compaction.

21. Cut and fill slopes may experience severe erosion when grading is halted during rainy weather. Before work is stopped, a positive gradient away from the slopes must be established to carry the surface runoff water away from the slopes to areas where erosion and sediment can be controlled.

22. After the completion of the slope grading, erosion protection must be provided. Slope planting, preferably with deep-rooted native plants, must be completed on all exposed surfaces of

cut and fill slopes. Graded slopes should not be left exposed through a winter season without the completion of erosion control measures and/or slope planting.

Lake Construction

23. Due to the sandy nature of the near surface soils, unprotected sandy side slopes should be lined no steeper than 4:1 (Horizontal to Vertical. The sandy soil will not hold water in the lake. If it is required that the lake hold water, then the lake slopes should be lined. This may be achieved by placing a non-pervious membrane, use of clayey soil material at least 16 inches in thickness (measured perpendicular to the slope) or chemical treatment of the native sandy soils to create an impermeable barrier. Specific recommendations will be provided when the lake location and intended use in known.

Foundations

24. We recommend that the residences be supported on a concrete structural post-tension mat foundations designed to accommodate the potential settlement of the underlying soil. We recommend that the structures have a uniform loading pattern with no extraneous foundation element. The design concept of the foundation is that it will be a "raft" that will tolerate tilt but not deflect to cause adverse distress to the residence. The following recommendations are contingent upon adequate surface drainage being constructed as recommended in this report and as designed by the project Civil Engineer and maintained by the property owners at all times. It is noted that the Uniform Building Code design methods for post-tensioned slab foundations are intended for expansive soil conditions. Since no expansive soil is present on the site, we have provided the following criteria based on the least expansive material provided in the UBC.

Post-Tensioned Slab Foundations

25. Post-tensioned slabs should be a minimum 10 inches in thickness and designed using the following criteria which is based on the design method of the 1997 Uniform Building Code, Chapter 18, Division III, Sections 1816 and 1817, Design of Post-Tensioned Slabs on Ground.

Plasticity Index	=	Less than 10
Allowable Bearing Capacity	=	2,500 p.s.f.
Depth to Constant Moisture	=	5 feet
Percent Passing #200	=	30%
Edge Moisture Variation Distance:		
Edge Lift	=	3.0 feet
Center Lift	=	5.0 feet
Differential Swell:		
Ym (Edge Lift)	=	0.11 inches
Ym (Center Lift)	=	0.5 inches

General Construction Requirements for Post-Tensioned Slab

26. Slabs may be constructed at pad grade. Post-tensioned slabs 10 inches in thickness or greater do not require 4 inches of capillary break material.

27. A Visqueen-type membrane at least 10 mil thick should be placed between the prepared subgrade and the slab to provide an effective vapor retarder, and to minimize potential moisture condensation under floor coverings. The vapor retarder membrane shall be lapped adequately to provide a continuous vapor proof retarder under the entire slab. Care must be taken to assure that the membrane does not become torn and entangled with the reinforcing.

28. A minimum of two inches of wetted sand should be placed over the vapor retarder to facilitate curing of the concrete and to act as a cushion to protect the membrane. The perimeter of the mat should be thickened to bear on the prepared building pad and to confine the sand. During winter construction, sand may become saturated due to rainy weather prior to pouring. Saturated sand is not desirable because there exists a high probability of creating sand pockets within the slab section during the concrete pour. As an alternate, a sand-fine gravel mixture that is stable under saturated conditions may be used. However, the material must be approved by the Soil Engineer prior to use. As an alternate to the placement of the sand, the sand may be omitted and the concrete placed directly on the moisture-vapor barrier, provided the concrete mix used has a maximum

water/cement ratio of 0.45, and two layers of 10 mil visqueen, one layer of 20 mil high-strength plastic vapor retarder is used, or one layer of 10 mil Class A retarder is used.

29. Any concrete flatwork such as steps, patios, or sidewalks should be designed independently of the slab, and expansion joints should be provided between the flatwork and the structural unit.

30. Since the foundation subgrade will consist of sandy material, saturation of slab subgrade prior to pouring is not needed.

31. The use of post-tensioned slab foundations, as opposed to conventionally reinforced mat-slabs, will reduce the amount of cracking in the slabs caused by differential soil movement, by distributing the differential movement over longer span distances through the bending resistance of the slabs. However, use of post-tensioned slabs will not reduce the amount of vertical displacement of the slabs compared with conventional mat-slabs, because both types of slabs will displace vertically in response to the settlement of the underlying subgrade soil.

32. Any exterior concrete flatwork such as steps, patios, or sidewalks should be designed independently of the post-tensioned slabs and other edge restraints such as sidings or veneers that could restrict vertical movement of the flatwork. Separation may be accomplished using 30-pound felt divider material or expansion joints between the flatwork and the structural units.

Exterior Slab-on-Grade Construction

33. Flatwork slab-on-grade may experience cracking and should be constructed using the following requirements:

a. Slabs should be underlain by a minimum of 4 inches of gravel or clean crushed rock material placed between the finished subgrade and the slabs to serve as a capillary break between the subsoil and the slab. See the "Guide Specifications For Rock Under Floor Slabs", Appendix C.

b. The thickness of the slab is to be determined by the structural engineer. Slabs should be properly reinforced to meet structural design criteria. The reinforcement shall be placed in the center of the slab unless otherwise designated by the design engineer.

c. Concrete flatwork slabs or stairs should be poured structurally independent of the foundations. A 30-pound felt strip, expansive joint material, or other positive separator should be provided around the edge of all floating slabs to prevent bond to the foundation. Alternatively, a monolithic concrete floor slab and footings may be casted to support the proposed structures as long as waterproofing is provided with the system. In addition, gravel or crushed rock should not be placed under the monolithic slab.

Retaining Walls

34. Retaining walls may be used at the site. Retaining walls should be designed to resist lateral pressures exerted from a media having an equivalent fluid weight as follows:

Active Condition	=	35 p.c.f. for horizontal backslope
At-rest Condition	=	50 p.c.f.
Passive Condition	=	250 p.c.f.
Coefficient of Friction	=	0.35

35. For a non-horizontal backslope, the active condition equivalent fluid weight can be increased by a 1.5 p.c.f. for each 2 degree rise in slope from the horizontal.

36. Active conditions occur when the top of the wall is free to move outward. At-rest conditions apply when the top of wall is restrained from any movement. It should be noted that the effects of any surcharge or compaction loads behind the walls must be accounted for in the design of the walls.

37. The above criteria are based on fully drained conditions. If drained conditions are not possible, then the hydrostatic pressure must be included in the design of the wall. A linear distribution of hydrostatic pressure of 63 p.c.f. should be adopted.

38. In order to achieve fully-drained conditions, a drainage filter blanket should be placed behind the wall. The blanket should be a minimum of 12 inches thick and should extend the full height of the wall to within 12 inches of the surface. If the excavated area behind the wall exceeds 12 inches, the entire excavated space behind the 12-inch blanket should consist of compacted engineered fill or blanket material. The drainage blanket material may consist of either granular crushed rock and drain pipe fully encapsulated in geotextile filter fabric or Class II permeable material that meets CalTrans Specification, Section 68, with drainage pipe but without fabric. A 4-inch perforated drain pipe should be installed in the bottom of the drainage blanket and should be underlain by at least 4 inches of filter type material. A 12-inch cap of clayey soil material should be placed over the drainage blanket. The collected water should be carried to a solid pipe and finally to a catch basin.

39. As an alternate to the 12-inch drainage blanket, a pre-fabricated strip drain (such as Miradrain) may be used between the wall and retained soil. In this case, the wall must be designed to resist an additional lateral hydrostatic pressure of 30 p.c.f.

40. Below-grade walls taller than 12 feet should be designed for dynamic pressure during a seismic event. To account for increase soil pressure associated with seismic forces, below-grade walls should be designed for an additional rectangular pressure distribution equal 6H in p.s.f, where H is the height of wall in feet.

41. Piping with adequate gradient shall be provided to discharge water that collects behind the walls to an adequately controlled discharge system away from the structure foundation.

42. The retaining walls may be founded on a spread footing foundation using the criteria below. Site retaining walls may not be structurally connected to the building structures due to incompatible foundation systems.

Spread Footings for Retaining walls and Soundwalls

43. Spread footings should have a minimum of depth of 12 inches below the lowest adjacent pad grade (trenching depth). Design bearing pressures for continuous footings should not exceed 2,500 p.s.f. due to dead plus sustained live loads, and 3,250 p.s.f. due to all loads which include wind or seismic. To accommodate lateral loads, the passive resistance of the foundation soil can be utilized. The passive soil pressure can be assumed to act against the front face of the spread footing below a depth of one foot below the ground surface. It is recommended that a passive pressure equivalent to that of a fluid weight weighing 250 p.c.f. be used. For design purposes, an allowable friction coefficient of 0.30 can be assumed at the base of the spread footing.

Friction Pier Foundations for Retaining walls and Soundwalls

44. The piers should be designed on the basis of skin friction acting between the soil and that portion of the pier that extends below a depth of three feet below finished grade. For the soils at the site, an allowable skin friction value of 250 p.s.f. can be used for combined dead and live loads. This value can be increased by one-third for total loads which include wind or seismic forces. Spacing should be determined as required by the load distribution, but minimum spacing should not be less than 3 pier diameters, center to center. Maximum spacing and the minimum depth of piers is to be determined by the Structural Engineer.

45. To resist lateral loads, the passive resistance of the soil can be used. The soil passive pressures can be assumed to act against the lateral projected area of the pier described by the vertical dimension of twice the pier diameter. It is recommended that a passive pressure equivalent of that of a fluid weighing 250 p.c.f. be used below a depth of two feet.

46. It is important that care be exercised to ensure that any concrete spills during the concrete pour must be removed and no "mushrooming" effects are allowed to remain around the top of the pier.

Soil Corrosivity

47. Corrosivity analyses were performed on a selected soil sample recovered from the Boring B-4 to evaluate the corrosion potential of the soil at the proposed project location. The sample was tested in the laboratory for resistivity, chloride ion concentration, sulfate ion concentration, and pH. Results of the laboratory tests and corrosivity analyses are included in Appendix B. According to the results of the soil corrosivity evaluation, the minimum resistivity of sample taken at the proposed project location is about 7,843 ohms per centimeter according to test procedure ASTM G57 under saturated condition. Based on these results, the soils are classified as mildly corrosive at the site. Therefore, it is recommended that all buried iron, steel, cast iron, ductile iron and galvanized steel piping should be properly protected against corrosion depending upon the critical nature of the structure. A corrosion engineer may be consulted for development of long-term site-specific corrosion protection measures, if necessary.

48. Chloride ion concentrations were found to be less than 2 mg/kg or less, sulfate ion concentration were found to be less than 5 mg/kg, and pH was found to be 7.8. Chlorides, sulfates, and pH are not expected to present corrosion problems for the proposed facilities. Portland cement Type I/II is acceptable for the concrete mix design of footings and other concrete in contact with the site soils.

Pavement Areas

49. As part of the proposed development, it is planned to construct new pavement for access driveways, parking areas, and interior streets for light vehicles at the site. The traffic indices used should be established by the Civil Engineer.

50. We have developed our pavement design recommendations based on the assumption that the pavement subgrade soil will be similar to the near-surface soils described in the boring logs. This assumption is based on our understanding that grading and soil removal in the paved areas will be minimal. If site grading exposes soil other than that assumed, we should perform additional tests to confirm or revise the recommended pavement sections for actual field conditions.

51. For preliminary design we will provide pavement design thickness based on a sandy soil with an assumed R-value of 25 and the Caltrans Flexible Pavement Design Method. A sample of the near surface soils was tested in our laboratory and the results are presented in Appendix B. Due to expansive nature of some of the near-surface soils, we used R-value of 25 in our calculations. Each traffic index represents a different level of use. The owner or designer should determine which level of use best reflects the project, and select the appropriate pavement section. Based on this R-value, the recommended pavement sections for various Traffic Indices (TIs) are tabulated as follows:

Table 2

Flexible Pavement Design

Design Traffic Index	Asphalt Concrete Thickness Type B (inches)	Aggregate Base Thickness Class II (inches)
4.5	3.0	6.0
5.0	3.0	7.5
6.0	3.5	8.5
7.0	4.0	11.0
8.0	4.5	12.5

Note: [1]Minimum R-value for Aggregate Base = 78

52. Please note that the above design is preliminary, due to unknown source of the subgrade materials. After rough subgrade is achieved, representative samples of soil must be collected and tested to determine the actual R-values so that a final actual design may be obtained.

53. After underground facilities have been placed in the areas to receive pavement and removal of excess material has been completed, the upper 6 inches of the subgrade soil should be scarified, moisture conditioned and compacted to a minimum relative compaction of 95% at a moisture content of about 2 percent above optimum in accordance with the grading recommendations specified in this report. The pavement subgrade should not be allowed to dry excessively before covering with aggregate base.

54. All aggregate base material placed subsequently should also be compacted to a minimum relative compaction of 95% based on the ASTM D1557-91 Test Procedure. The construction of the pavement should conform to the requirements set forth by the latest Standard Specifications of the Department of Transportation of the State of California and/or City of Manteca, Department of Public Works.

55. If planter areas are provided within or immediately adjacent to the pavement areas, provisions should be made to control irrigation water from entering pavement subgrade. Water entering the pavement section at subgrade level, which does not have a means for discharge, could cause softening of this zone and, subsequently, pavement failure will occur.

56. In order to mitigate this condition, it is recommended that the subgrade beneath curb and gutter be graded such that it has a positive fall towards the catch basins where a 2-foot long subdrain will discharge any accumulated water into the catch basin. The subdrain trench should be a minimum 6 inches deep and consist of a 4-inch perforated solid wall PVC pipe surrounded and underlain by Class II permeable material. The inlet portion of the subdrain pipe should be capped.

Utility Trenches

57. The caving potential of the trenches exists at the site due to granular nature of the near surface soils and particularly in areas where the trenches are well below the groundwater. This may require special shoring and the contractor should account for this during construction.

58. Applicable safety standards require that trenches in excess of 5 feet must be properly shored so that the walls of the trench slope back to provide safety for installation of lines. In accordance with OSHA regulations, the underground contractor should provide a competent person to evaluate the soil conditions and make the appropriate shoring and sloping recommendations.

59. With respect to state-of-the-art construction or local requirements, utility lines are generally bedded with granular materials. These materials can convey surface or subsurface

water beneath the structures. It is, therefore, recommended that all utility trenches which possess the potential to transport water, i.e., backfilled with granular material, be sealed with a compacted impervious cohesive soil material or lean concrete where the trench enters/exits the building perimeter. This impervious seal should extend a minimum of 2 feet away from the building perimeter.

60. Utility trenches extending underneath all traffic areas must be backfilled with native or approved import material and compacted to a relative compaction of 90% to within 6 inches of the subgrade. The upper 6 inches should be compacted to 95% relative compaction in accordance with Laboratory Test Procedure ASTM D1557-91. Backfilling and compaction of these trenches must meet the requirements set forth by the City of Manteca, Department of Public Works. Utility trenches within landscape areas may be compacted to a relative compaction of 85%.

General Construction Requirements

61. All finish grades should provide a positive gradient to an adequate discharge point in order to provide rapid removal of surface water runoff away from all foundations. No ponding of water should be allowed on the pad or adjacent to the foundations. This will prevent any surface water due to rain or irrigation from seeping beneath the structures. Should surface water be allowed to seep under the structures, foundation movement resulting in structural cracking will occur. Surface drainage must be provided as designed by the project Civil Engineer and maintained by the property owners at all times.

62. Where roof gutters are used, downspouts from the gutters should be provided with closed pipe conduits or splash blocks to carry storm water away from the structures and graded areas and, thus, reduce the possibility of soil saturation adjacent to the foundations and engineered fills.

63. Flower beds or planters are not preferred adjacent to the foundations because of the possibility of irrigation water affecting the foundations. Should planters be constructed, foliage requiring little irrigation should be planted. It is preferred that irrigation adjacent to the building

foundations consist of a drip system. Sprinkler systems may be used, however, it is preferred that sprinkler heads do not water closer than 3 feet from the building foundations. If sprinklers are used within 3 feet, then excessive watering should not be allowed; and good surface drainage in the planter area must be provided. In any case, it is recommended that area surface drains be incorporated into the landscaping to discharge any excessive irrigation or rainwater that may accumulate in the planter area. These surface drains must be constructed such that the surface of the drain is lower than the surrounding grade so that easy flow of surface water runoff is allowed into the drip inlets. Ground cover and vegetation should be maintained to allow easy flow of water to drains. In particular, the creation of planter areas confined on all sides by concrete walkways or decks and the residence foundation is not desirable as any surface water due to rain or irrigation becomes trapped in the planter area with no outlet. If such a landscape feature is necessary, surface area drains in the planter area or a subdrain along the foundation perimeter must be installed.

Project Review, Additional Studies and Construction Monitoring

64. ***TERRASEARCH, inc.*** should be notified at least two working days prior to site clearing, grading, and/or foundation operations on the property. This will give the Soil Engineer ample time to discuss the problems that may be encountered in the file and coordinate the work with the contractor.

65. Field observation and testing during the grading and/or foundation operations must be provided by representatives of ***TERRASEARCH, inc.*** to enable them to form an opinion regarding the adequacy of the site preparation, the acceptability of fill materials, and the extent to which the earthwork construction and the degree of compaction comply with the specification requirements. Any work related to the grading and/or foundation operations performed without the full knowledge and under direct observation of the Soil Engineer will render the recommendations of this report invalid. This does not imply full-time observation. The degree of observation and frequency of testing services would depend on the construction methods and schedule, and the item of work. Please refer to "Guidelines for Required Services: for an outline of our involvement during project development.

66. Should another geotechnical consultant be engaged to perform project review and/or construction monitoring, then ***TERRASEARCH, inc.*** must receive a letter of indemnification releasing us of any responsibility on the project.

REFERENCES

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Terrasearch, Inc. June 15, 2005, Preliminary Geotechnical Investigation on Proposed Baird Ranch, Project No.: 10644.G

Terrasearch, inc., April 25, 2005Phase I Environmental Site Assessment at Proposed Residential Development, APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03, 2368, 20601 and 20611 Woodward Avenue, Manteca, California. Project No. 10644.E

Terrasearch, inc., June 13, 2005, Phase II Environmental Site Assessment At Proposed Residential Development, APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03, 2368, 20601 and 20611 Woodward Avenue, Manteca, California. Project No. 10644.E

Uniform Building Code, 1997. Section 16, Tables 16-J, 16-Q through 16-U.

GUIDELINES FOR REQUIRED SERVICES

The following list of services are the services required and must be provided by ***TERRASEARCH, inc.***, during the project development. These services are presented in check list format as a convenience to those entrusted with their implementation.

The items listed are included in the body of the report in detail. This list is intended only as an outline of the required services and does not replace specific recommendations and, therefore, must be used with reference to the total report. This does not imply full-time observation. The degree of observation and frequency of testing services would depend on the construction methods and schedule, and the item of work.

The importance of careful adherence to the report recommendations cannot be overemphasized. It should be noted, however, that this report is issued with the understanding that each step of the project development will be performed under the direct observation of ***TERRASEARCH, inc.***

The use of this report by others presumes that they have verified all information and assume full responsibility for the total project.

	Item Description	Required	Not Required
1.	Provide foundation design parameters	X	
2.	Review grading plans and specifications	X	
3.	Review foundation plans and specifications	X	
4.	Observe and provide recommendations regarding demolition	X	
5.	Observe and provide recommendations regarding site stripping	X	
6.	Observe and provide recommendations on moisture conditioning, removal, and/or precompaction of unsuitable existing soils	X	
7.	Observe and provide recommendations on the installation of subdrain facilities		X
8.	Observe and provide testing services on fill areas and/or imported fill materials	X	
9.	Review as-graded plans and provide additional foundation recommendations, if necessary	X	
10.	Observe and provide compaction tests on sanitary sewers, storm drain, water lines and PG&E trenches	X	
11.	Observe foundation excavations and provide supplemental recommendations, if necessary prior to placing concrete	X	
12.	Observe and provide moisture conditioning recommendations for foundation areas prior to placing concrete	X	
13.	Provide design parameters for retaining walls	X	
14.	Provide geologic observations and recommendations for keyway excavations and cutslopes during grading		X
15.	Excavate and recompact all geologic trenches and/or test pits		X
16.	Observe installation of subdrain behind retaining walls (if any)		X

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. It should be noted that it is the responsibility of the owner or his representative to notify ***TERRASEARCH, inc.***, a minimum of two working days before any clearing, grading, or foundation excavations can commence at the site.

2. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings and/or test pits and from a reconnaissance of the site. Should any variations or undesirable conditions be encountered during the development of the site, ***TERRASEARCH, inc.***, will provide supplemental recommendations as dictated by the field conditions.

3. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are brought to the attention of the Architect and Engineer for the project and incorporated into the plans and that the necessary steps are taken to see that the Contractor and Subcontractors carry out such recommendations in the field.

4. At the present date, the findings of this report are valid for the property investigated. With the passage of time, significant changes in the conditions of a property can occur due to natural processes or works of man on this or adjacent properties. In addition, legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may render this report invalid, wholly or partially. Therefore, this report should not be considered valid after a period of two (2) years without our review, nor should it be used, or is it applicable, for any properties other than those investigated.

5. Notwithstanding all the foregoing, applicable codes must be adhered to at all times.

APPENDIX A

Field Investigation

Vicinity Map

Site Plan

Logs of Our Previous Test Borings

FIELD INVESTIGATION

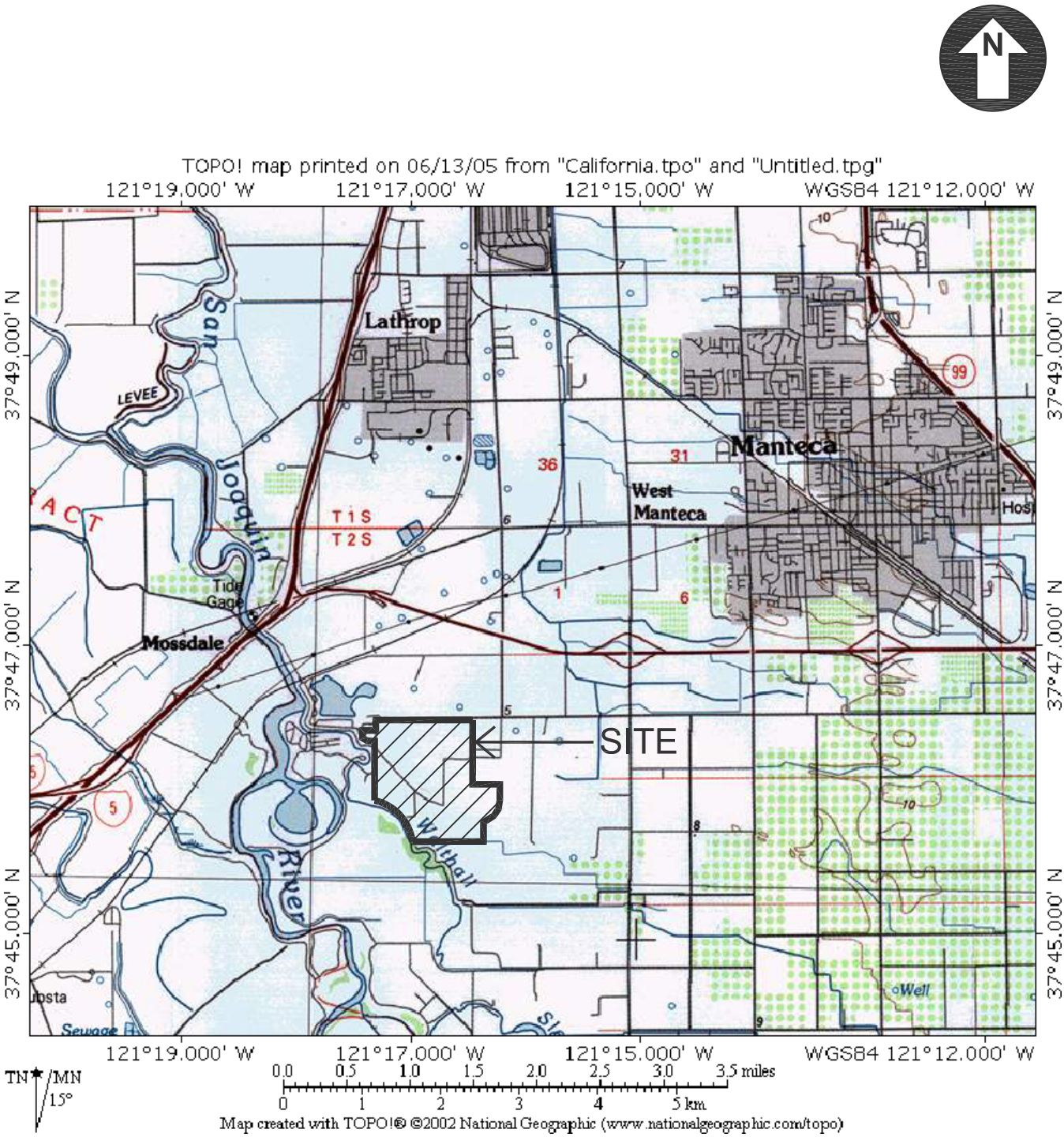
The field investigation was performed between 24 May 2005 and 26 May 2005 and included a reconnaissance of the site and the drilling of six (6) test borings at the approximate locations shown on Figure 2, "Site Plan."

The borings were drilled to a maximum depth of 31.5 to 41.5 feet below the existing ground surface. The drilling was performed with a truck-mounted rig using power-driven, 6-inch rotary wash method. Visual classifications were made from auger cuttings and the samples in the field. As the drilling progressed, undisturbed core samples were obtained by means of a 2-1/2 inch O.D., split-tube sampler. The sampler was driven into the in-situ soils under the impact of a 140-pound hammer having a free fall of 30 inches. The number of blows required to advance the sampler 12 inches into the soil were adjusted to the standard penetration resistance (N-Value).

The samples were sealed and returned to our laboratory for testing. Classifications made in the field were verified in the laboratory after further examination and testing. After completion of each hole, borings were backfilled with cement grout per San Joaquin County requirement.

In addition, four (4) monitoring wells were installed at the locations shown on Figure 2. The monitoring wells extended to maximum depth of about 10 feet from the ground surface. A 10-foot long 2-inch diameter slotted PVC pipe was installed in each hole and the annular space between the pipe and the boring wall was backfilled with sand. The upper one foot of the annular space was backfilled with the native surfacial soils.

The stratification of the soils, descriptions, and location of undisturbed soil samples are shown on the "Logs of Test Borings" contained within this appendix.



VICINITY MAP

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 1

Project No.	Drawn by:	Scale:	Date:
11515.G	GC	AS SHOWN	05/2007

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B1

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH			11-7-8 (15)		Dark brown, widely graded clayey SAND (SC) or well graded SAND (SW), medium dense, moist			
	5		6-6-6 (12)		loose	119	12	
					Gray, silty CLAY (CL), firm, medium plasticity, damp to moist			
	10		3-5-4 (9)			94	28	LL=23, PI=10
	15		1-3-8 (11)		Olive, poorly graded clayey SAND (SC), medium dense			
	20		15-14-12 (26)			101	24	
	25		11-24-32 (56)		Yellow brown, fine to coarse grained SAND (SM), dense, wet			
	30		13-30-40 (70)		very dense			

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

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MANTECA, CALIFORNIA

Figure No. 2

Date:	Drawn by:	Project No.	Reviewed By:
.	GC		K. Ghiassi

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B1

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 2 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH			30-33-41 (74)		Yellow brown, fine to coarse grained SAND (SM), dense, wet *(continued)*			
					Gray, clayey SAND (SC), damp to moist			
	40		10-12-13 (25)		Gray, silty CLAY, very stiff, medium plasticity, damp to moist	100	24	
					Boring was terminated at about 41.5 feet below ground surface (bgs). Free water was not encountered.			
	45							
	50							
	55							
	60							
	65							

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Figure No. 2

Date:	Drawn by:	Project No.	Reviewed By:
.	GC		K. Ghiassi

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B2

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, poorly graded clayey SAND (SC), loose, damp to moist			.
			6-4-4 (8)					
	5		5-8-10 (18)		medium dense		19	
					Brown, fine to coarse grained SAND (SM), medium dense, damp to moist			
	10		4-7-11 (18)					
	15		6-13-14 (27)					
	20		13-16-17 (33)		dense			
	25		12-15-20 (35)				19	
	30		12-19-24 (43)					

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Figure No. 3

Date:	Drawn by:	Project No.	Reviewed By:
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BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B2

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 2 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	40		12-16-20 (36)		Brown, fine to coarse grained SAND (SM), medium dense, damp to moist *(continued)*			
			24-27-35 (62)		Boring was terminated at about 41.5 feet below ground surface (bgs). Free water was not encountered			
	45							
	50							
	55							
	60							
	65							

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Figure No. 3

Date:	Drawn by:	Project No.	Reviewed By:
.	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B3

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0		2-7-5 (12)		Tannish brown, clayey SAND (SC), loose, damp to moist			.
	5		6-13-9 (22)		dark brown, medium dense	104	21	
	10		3-6-6 (12)		Brown, fine SAND (SP), medium dense, damp to moist			
	15		11-13-10 (23)				24	
	20		16-15-17 (32)		dense			
	25		9-10-13 (23)		medium dense			
	30		12-25-30 (55)		Light brown, medium to coarse grained SAND, very dense, moist			
					Boring was terminated at about 31.5 feet below ground surface (bgs). Free water was not encountered.			

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Figure No. 4

Date:	Drawn by:	Project No.	Reviewed By:
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BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B4

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, poorly graded medium grained SAND (SP), medium dense, moist			
			10-10-11 (21)					
	5		5-8-8 (16)					
	10		4-7-9 (16)					
	15		6-7-9 (16)		gray			
	20		5-6-12 (18)		Light brown, silty CLAY (CL), very stiff, medium plasticity, iron staining, damp to moist		33	LL=45, PI=23
	25		12-16-22 (38)		Light brown, coarse grained SAND (SM), medium dense, wet			
	30		13-15-26 (41)		dense			
					Boring terminated at about 31.5 feet below ground surface (bgs). Free water was not encountered.			

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Figure No. 5

Date:	Drawn by:	Project No.	Reviewed By:
.	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B5

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0		2-4-6 (10)		Dark brown, poorly graded fine SAND (SM), loose, moist			.
	5		3-5-6 (11)		medium dense			
	10		3-5-6 (11)		Tannish brown, coarse grained SAND (SM), medium dense			
	15		5-9-11 (20)		gray		19	
	20		11-12-14 (26)					
	25		7-10-19 (29)		fine to coarse grained			
	30		9-21-25 (46)		dense			
					Boring was terminated at about 31.5 feet below ground water surface (bgs). Free water was not encountered.			

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Figure No. 6

Date:	Drawn by:	Project No.	Reviewed By:
.	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B6

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, fine grained SAND (SM) with minor clay, loose, moist	1		.
			6-5-4 (9)					
	5		2-3-5 (8)					
	10		1-3-6 (9)		Dark brown, coarse grained SAND (SM), loose			
	15		8-11-11 (22)		medium dense			
	20		6-8-10 (18)					
	25		11-19-25 (44)		dense			
	30		14-19-21 (40)		medium dense			
					Boring terminated at about 31.5 feet below ground surface (bgs). Free water was not encountered.			

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 7

Date:	Drawn by:	Project No.	Reviewed By:
.	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-98)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES AND LEGEND
COARSE GRAINED SOILS >50% RETAINED ON NO.200 SIEVE	GRAVELS >50% OF COARSE FRACTION PASSES ON NO.4 SIEVE	CLEAN GRAVELS <5% FINES	Cu>4 AND 1<Cc<3	GW	WELL-GRADED GRAVEL
			Cu>4 AND 1>Cc>3	GP	POORLY-GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR MH	GM	SILTY GRAVEL
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL
	SANDS >50% OF COARSE FRACTION PASSES ON NO.4 SIEVE	CLEAN SANDS <5% FINES	Cu>6 AND 1<Cc<3	SW	WELL-GRADED SAND
			Cu>6 AND 1>Cc>3	SP	POORLY-GRADED SAND
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR MH	SM	SILTY SAND
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND
FINE GRAINED SOILS >50% PASSES NO.200 SIEVE	SILTS AND CLAYS LIQUID LIMITS<50	INORGANIC	PI>7AND PLOTS> "A" LINE	CL	LEAN CLAY
			PI>4AND PLOTS< "A" LINE	ML	SILT
		ORGANIC	LL (OVEN DRIED)/ LL(NOT DRIED)<0.75	OL	ORGANIC SILT
	SILTS AND CLAYS LIQUID LIMITS>50	INORGANIC	PI PLOTS>"A" LINE	CH	FAT CLAY
			PI PLOTS<"A" LINE	MH	ELASTIC SILT
		ORGANIC	LL (OVEN DRIED)/ LL(NOT DRIED)<0.75	OH	ORGANIC CLAY
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR AND ORGANIC ODOR		PT	PEAT

SAMPLE TYPES:

- MODIFIED CALIFORNIA
- SPLIT SPOON
- SHELBY TUBE
- NO RECOVERY
- FIRST WATER LEVEL READING
- SECOND WATER LEVEL READING

SOIL MOISTURE

DESCRIPTIVE TERM	DESCRIPTION
DRY	DRY OF STANDARD PROCTOR OPTIMUM
DAMP	SAND DRY
MOIST	NEAR STANDARD PROCTOR OPTIMUM
WET	WET OF STANDARD PROCTOR OPTIMUM
SATURATED	FREE WATER IN SAMPLE

PARTICLES SIZES

COMPONENTS	SIZE OR SIEVE NO.
BOULDERS	OVER 12 INCHES
COBBLES	3 TO 12 INCHES
GRAVEL - COARSE	3/4 TO 3 INCHES
- FINE	NO. 4 TO 3/4 INCH
SAND - COARSE	NO. 10 TO NO. 4
- MEDIUM	NO. 40 TO NO. 10
- FINE	NO. 200 TO NO. 40
FINES (SILT AND CLAY)	BELOW NO. 200

ADDITIONAL NOTES:

CA - CHEMICAL ANALYSIS (CORROSIVITY) COMPLETED. REFER TO LABORATORY RESULTS.

CD - CONSOLIDATED DRAINED (CD) TRIAXIAL TEST COMPLETED. REFER TO LABORATORY RESULTS.

CU - CONSOLIDATED UNDRAINED (CU) TRIAXIAL TEST COMPLETED. REFER TO LABORATORY RESULTS.

DS - RESULTS OF DIRECT SHEAR TEST IN TERMS OF TOTAL COHESION (C, KSF) OR EFFECTIVE COHESION AND FRICTION ANGLES (C', KSF AND ø DEGREES)

PP - RESULT OF POCKET PENETROMETER TEST. IN TERMS OF SHEAR STRENGTH (TSF)

SW - SWELL TEST COMPETED. REFER TO LABORATORY RESULTS

TV - RESULTS OF TORVANE SHEAR TEST IN TERMS OF UNDERAINED SHEAR STRENGTH (KSF)

UC - RESULTS OF UNCONFINED COMPRESSION TEST IN TERMS OF UNDRAINED SHEAR STRENGTH (KSF).

UU - UNCONSOLIDATED UNDRAINED (UU) TRIAXIAL TEST COMPLETED. IN TERMS OF UNDRAINED SHEAR STRENGTH (KSF).

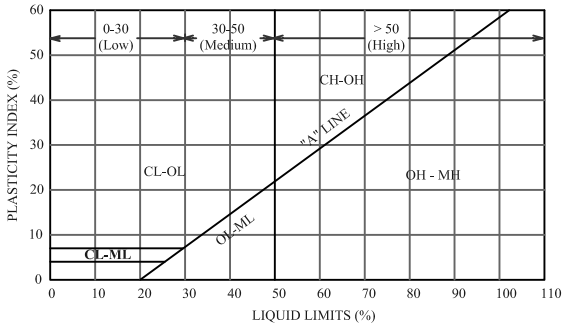
RV - RESULTS OF R-VALUE TEST.

#200 - PERCENT MATERIALS PASSING SIEVE NO. 200

BLOW COUNT:
THE NUMBER OF BLOWS OF THE SAMPLING HAMMER REQUIRED TO DRIVE THE SAMPLER THROUGH EACH OF THREE 6-INCH INCREMENTS. LESS THAN THREE INCREMENTS MAY BE REPORTED IF MORE THAN 50 BLOWS ARE COUNTED FOR ANY INCREMENT. THE NOTATION 50/5" INDICATES 5 INCHES OF PENETRATION ACHIEVED IN 50 BLOWS.

***N-VALUE:**
NUMBER BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH L.D.) SPLIT BARREL SAMPLER THE LAST 12 INCHES OF AN 18-1NCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST)

PLASTICITY CHART



PENETRATION RESISTANCE (RECORDED AS BLOWS/0.5 FT)

SAND & GRAVEL		SILT & CLAY		
RELATIVE DENSITY	N-VALUE (BLOWS/FOOT)*	CONSISTENCY	N-VALUE (BLOWS/FOOT)*	COMPREHENSIVE STRENGTH
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 -0.50
MEDIUM DENSE	10 - 30	MEDIUM STIFF	4 - 8	0.50 - 1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

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KEY TO THE EXPLORATORY BORING LOGS

APPENDIX B

Laboratory Investigation

Summary of Geotechnical Laboratory Test Results

Summary of Corrosion Test Results

Summary of R-Value Test Result

LABORATORY INVESTIGATION

The laboratory testing program was directed towards providing sufficient information for the determination of the engineering characteristics of the site soils so that the recommendations outlined in this report could be formulated.

Moisture content and dry unit weight tests were performed on undisturbed soil samples in order to determine the consistency of the soil and moisture variation throughout the explored soil profile and estimate the compressibility of the underlying soils.

The expansion characteristics of the near-surface soils were evaluated by means of Atterberg Limits tests performed in accordance with ASTM D4318.

A summary of all laboratory test results is presented on Table I of this appendix.

TABLE I

Summary of Laboratory Test Results

					Atterberg Limits	
Sample No.	**Depth (ft.)**	**Dry Density (p.c.f.)**	**Moisture Content (% Dry Wt.)**	**Percent Passing #200 (%)**	**Liquid Limit (%)**	**Plasticity Index**
1-2	5	119	12	25		
1-3	10	94	28		23	10
1-5	20	101	24			
1-9	40	100	24	62		
2-4	15					
2-6	25		19			
3-2	5	105	21			
3-4	15		24	9		
4-3	10			6		
4-5	20		33		45	23
5-4	15		19			

APPENDIX C

The Grading Specifications

Guide Specifications for Rock Under Floor Slabs

THE GRADING SPECIFICATIONS
On
Proposed Residential Development
The Trails of Manteca
Manteca, California

1. General Description

1.1 These specifications have been prepared for the grading and site development of the subject residential development. ***TERRASEARCH, inc.***, hereinafter described as the Soil Engineer, should be consulted prior to any site work connected with site development to ensure compliance with these specifications.

1.2 The Soil Engineer should be notified at least two working days prior to any site clearing or grading operations on the property in order to observe the stripping of organically contaminated material and to coordinate the work with the grading contractor in the field.

1.3 This item shall consist of all clearing or grubbing, preparation of land to be filled, filling of the land, spreading, compaction and control of fill, and all subsidiary work necessary to complete the grading of the filled areas to conform with the lines, grades, and slopes as shown on the accepted plans. The Soil Engineer is not responsible for determining line, grade elevations, or slope gradients. The property owner, or his representative, shall designate the person or organizations who will be responsible for these items of work.

1.4 The contents of these specifications shall be integrated with the soil report of which they are a part, therefore, they shall not be used as a self-contained document.

2. Tests

The standard test used to define maximum densities of all compaction work shall be the ASTM D1557-91 Laboratory Test Procedure. All densities shall be expressed as a relative compaction in terms of the maximum dry density obtained in the laboratory by the foregoing standard procedure.

3. Clearing, Grubbing, and Preparing Areas To Be Filled

3.1 If encountered, all vegetable matter, trees, root systems, shrubs, debris, and organic topsoil shall be removed from all structural areas and areas to receive fill.

3.2 If encountered, any soil deemed soft or unsuitable by the Soil Engineer shall be removed. Any existing debris or excessively wet soils shall be excavated and removed as required by the Soil Engineer during grading.

3.3 All underground structures shall be removed from the site such as old foundations, abandoned pipe lines, septic tanks, and leach fields.

3.4 The final stripped excavation shall be approved by the Soil Engineer during construction and before further grading is started.

3.5 After the site has been cleared, stripped, excavated to the surface designated to receive fill, and scarified, it shall be bladed until it is uniform and free from large clods. The native subgrade soils shall be moisture conditioned and compacted to the requirements as specified in the grading section of this report. Fill can then be placed to provide the desired finished grades. The contractor shall obtain the Soil Engineer's approval of subgrade compaction before any fill is placed.

4. Materials

4.1 All fill material shall be approved by the Soil Engineer. The material shall be a soil or soil-rock mixture which is free from organic matter or other deleterious substances. The fill material shall not contain rocks or lumps over 6 inches in greatest dimension and not more than 15% larger than 2-1/2 inches. Materials from the site below the stripping depth are suitable for use in fills provided the above requirements are met.

4.2 Materials existing on the site are suitable for use as compacted engineered fill after the removal of all debris and organic material. All fill soils shall be approved by the Soil Engineer in the field.

4.3 Should import material be required, it must meet the specifications as delineated in the body of this report.

5. Placing, Spreading, and Compacting Fill Material

5.1 The fill materials shall be placed in uniform lifts of not more than 8 inches in uncompacted thickness. Each layer shall be spread evenly and shall be thoroughly blade mixed during the spreading to obtain uniformity of material in each layer. Before compaction begins, the fill shall be brought to a water content that will permit proper compaction by either (a) aerating the material if it is too wet, or (b) spraying the material with water if it is too dry.

5.2 After each layer has been placed, mixed, and spread evenly, either import material or native material shall be compacted to a relative compaction designated for engineered fill.

5.3 Compaction shall be by footed rollers or other types of acceptable compacting rollers. Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling shall be accomplished while the fill material is within the specified moisture content range. Rolling of each layer shall be continuous over its entire area and the roller shall make sufficient trips to ensure that the required density has been obtained. No ponding or jetting shall be permitted.

5.4 Field density tests shall be made in each compacted layer by the Soil Engineer in accordance with Laboratory Test Procedure ASTM D1556-64 or D2922-71. When footed rollers are used for compaction, the density tests shall be taken in the compacted material below the surface disturbed by the roller. When these tests indicate that the compaction requirements on any layer of fill, or portion thereof, have not been met, the particular layer, or portion thereof, shall be reworked until the compaction requirements have been met.

5.5 No soil shall be placed or compacted during periods of rain nor on ground which contains free water. Soil which has been soaked and wetted by rain or any other cause shall not be compacted until completely drained and until the moisture content is within the limits hereinbefore described or approved by the Soil Engineer. Approval by the Soil Engineer shall be obtained prior to continuing the grading operations.

6. Pavement

6.1 The proposed subgrade under pavement sections, native soil, and/or fill shall be compacted to a minimum relative compaction of 95% at 3% above optimum moisture content for a depth of 6 inches.

6.2 All aggregate base material placed subsequently should also be compacted to a minimum relative compaction of 95% based on the ASTM Test Procedure D1557-91. The construction of the pavement in the parking and traffic areas should conform to the requirements set forth by the latest Standard Specifications of the Department of Transportation of the State of California and/or City of Manteca, Department of Public Works.

6.3 It is recommended that soils at the proposed subgrade level be tested for a pavement design after the preliminary grading is completed and the soils at the site design subgrade levels are known.

7. Utility Trench Backfill

7.1 The utility trenches extending under concrete slabs-on-grade shall be backfilled with native on-site soils or approved import materials and compacted to the requirements pertaining to the adjacent soil. No ponding or jetting will be permitted.

7.2 Utility trenches extending under all pavement areas shall be backfilled with native or approved import material and properly compacted to meet the requirements set forth by the City of Manteca, Department of Public Works.*

*NOTE: Requirements of City to be added.

7.3 Where any opening is made under or through the perimeter foundations for such items as utility lines and trenches, the openings must be resealed so that they are watertight to prevent the possible entrance of outside irrigation or rain water into the underneath portion of the structures.

8. Subsurface Line Removal

8.1 The methods of removal will be designated by the Soil Engineer in the field depending on the depth and location of the line. One of the following methods will be used.

8.2 Remove the pipe and fill and compact the soil in the trench according to the applicable portions of sections pertaining to compaction and utility backfill.

8.3 The pipe shall be crushed in the trench. The trench shall then be filled and compacted according to the applicable portions of Section 5.

8.4 Cap the ends of the line with concrete to prevent entrance of water. The length of the cap shall not be less than 5 feet. The concrete mix shall have a minimum shrinkage.

9. Unusual Conditions

9.1 In the event that any unusual conditions not covered by the special provisions are encountered during the grading operations, the Soil Engineer shall be immediately notified for additional recommendations.

10. General Requirements

Dust Control

10.1 The contractor shall conduct all grading operations in such a manner as to preclude wind blown dirt and dust and related damage to neighboring properties. The means of dust control shall be left to the discretion of the contractor and he shall assume liability for claims related to wind blown material.

GUIDE SPECIFICATIONS FOR ROCK UNDER FLOOR SLABS

Definition

Graded gravel or crushed rock for use under slabs-on-grade shall consist of a minimum thickness of mineral aggregate placed in accordance with these specifications and in conformance with the dimensions shown on the plans. The minimum thickness is specified in the accompanying report.

Material

The mineral aggregate shall consist of broken stone, crushed or uncrushed gravel, quarry waste, or a combination thereof. The aggregate shall be free from deleterious substances. It shall be of such quality that the absorption of water in a saturated dry condition does not exceed 3% of the oven dry weight of the sample.

Gradation

The mineral aggregate shall be of such size that the percentage composition by dry weight, as determined by laboratory sieves (U.S. Sieves) will conform to the following gradation:

Sieve Size	Percentage Passing
3/4"	90-100
No. 4	25-40
No. 8	18-33
No. 200	0-3

Placing

Subgrade, upon which gravel or crushed rock is to be placed, shall be prepared as outlined in the accompanying soil

Appendix G:
Phase I and Phase II Environmental Site Assessments

G.1 - Phase I Environmental Site Assessment

PHASE I AND UPDATED PHASE II ENVIRONMENTAL SITE ASSESSMENTS

On

Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 and -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California

For

WEATHERBEE PROPERTIES, LLC

by

TERRASEARCH, inc.

Project No. 11515.E
May 29, 2007

Environmental • Geotechnical • Special Inspections • Materials Testing

TERRASEARCH INC.

SERVING NORTHERN CALIFORNIA SINCE 1969

Project No. 11515.E
May 29, 2007

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Alamo, California 94507

Subject: Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
PHASE I AND UPDATED PHASE II ENVIRONMENTAL SITE ASSESSMENTS

References:

1) Phase I Environmental Site Assessment
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
*By **TERRASEARCH, inc.***
Dated April 25, 2005

2) Phase II Environmental Site Assessment
Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
*By **TERRASEARCH, inc.***
Dated June 13, 2005

Dear Ms. Utal:

At your request, ***TERRASEARCH, inc.*** has conducted a Phase I and Updated Phase II Environmental Site Assessments for the above referenced site. The following is a copy of the report, which presents the results of our assessments.

Should you have any questions relating to the contents of this report or require any additional information, please contact our office at your convenience.

Reviewed by:

REGISTERED ENVIRONMENTAL ASSESSOR (CAL/EPA) ROBERT D. CAMPBELL No. 20161 Expires 12/07 STATE OF CALIFORNIA

Robert D. Campbell, M.S., C.E.G., R.E.A. II
Environmental Division Manager

Very truly yours,
TERRASEARCH, inc.

A. Wakil Mateen, R.E.A. I
Environmental Specialist

Copies: 3 to Weatherbee Properties, LLC

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ATTACHMENTS
Site Vicinity Map Figure 1 and Site Plan, Figure 2
Site Photos, Figures 3 through 8
Copies of Historical Topographic Maps 1915, 1952, 1968, 1976, 1987, 1994 & 1996
Copies of Historical Aerial Photographs 1957, 1963, 1982, 1993 and 1998
EDR City Directory Abstract
Environmental Data Resources, Inc. (EDR) Radius Report

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1.0 INTRODUCTION

1.1 Objective

The purpose of conducting this Phase I Environmental Site Assessment is to satisfy the Innocent Landowner Defense in CERCLA liability provided in 42 USC § 9601 (35) and § 9607(b)(3) through detailed assessment of the past use of the property, historical research, site visit, file reviews and/or searches and interviews with site managers/property owners. This Phase I Environmental Site Assessment complies with the US EPA 40 CFR 312 "Standards and Practices for All Appropriate Inquiries" referred to as the AAI Rule that was finalized in November of 2005 and conforms to the ASTM E1527-2005 standard for conducting Phase I Environmental Site Assessments. The subject property was evaluated for the presence of potentially adverse environmental conditions and the surrounding area was evaluated for secondary potential contaminated sites within 1-mile radius of the subject site. The subject property is located at 2368; 20601 and 26011 Woodward Avenue in the City of Manteca, California. This Phase I Environmental Site Assessment was prepared for the use of our client, Weatherbee Properties, LLC and Weatherbee Properties, LLC can rely on this report for evaluating the environmental conditions of the property. If commencement of development of this property is not initiated by November 29, 2007, an Updated Phase I Environmental Site Assessment must be performed if Weatherbee Properties, LLC or another buyer plans to pursue future development of this property

1.2 Scope

As authorized by Ms. Arlene Utal with Weatherbee Properties, LLC on May 14, 2007, our services were limited to the following:

a) Perform a field reconnaissance of the subject property for significant surficial signs of hazardous waste release, storage of hazardous materials, and surficial indications for the presence of underground storage tanks and water wells;

b) Off-site research into past land use of the property involving, as applicable, telephone and personal interviews with government personnel and the review of historical documents of the subject property;

c) A review of available aerial photographs for obvious surficial features indicative of past land use with attention to indicators of hazardous materials or waste use, disposal, or storage;

d) An interview with the current property owners;

e) A review of fuel leak and chemical release lists and files for soil and groundwater contamination cases within a 1.25-mile radius from the subject site as made available through the appropriate Federal and State and local regulatory agencies, if available;

f) Documentation of the site with photographs; and

g) Preparation of this report.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Location

The subject property is located in the southern portion of San Joaquin County, in the southwestern portion of Manteca, California. The site is comprised of five adjoining parcels totaling approximately 480 acres (APNs 241-240-02; -03; 241-040-04; -05 and 241-260-05) and located at 2368, 20601 and 20611 Woodward Avenue, California. Currently the subject site is occupied by five structures, one trailer home, an almond orchard, row crops, alp alpha fields, irrigation system, farming equipment, above ground storage tanks (ASTs), an abandoned fuel pump and a considerable amount of debris (see Figure 1, Site Vicinity Map and Site Plan).

2.2 Topography and Drainage

Based on the most recent USGS historical topographic dated 1987, the local topography is approximately 15-feet above mean sea level (msl) on the north-northwestern portion, while ranging from 20 feet to 25 feet above msl on the south-southwestern and eastern portions at the site. Weatherbee Lake is situated immediately west and the San Joaquin River is mapped approximately 3,500 feet west of the site. Drainage appears to follow the local topography from southeast toward to the northwest, along the local topography.

2.3 Geology/Hydrogeology

According to the Geologic Map of California by Charles W. Jennings (1977), published by California Department of Conservation, Division of Mines and Geology, the material underlying the subject site are consisted of Quaternary, Pleistocene-Holocene (Q) consolidated and semi-consolidated alluvium, lake, playa and terrace deposits. Deposits mostly consist of non-marine but include marine deposits near the coast.

The Great Valley 7 Blind Thrust Fault Zone is located approximately 18-kilometers (km) west of the subject site. Blind thrust faults are not regulated through the Alquist-Priolo (AP) Earthquake Fault Zones Act (CGS, 1994); however are regulated through the Seismic Hazards Act (CGS, 1997). This site is not located within an Alquist-Priolo Earthquake Zone, nor is located within a Seismic Hazard Zone (CDMG, 1997).

Based on the Geocheck portion of EDR dated May 29, 2007, depth to the ground water within a water-well located within 0.5-mile north-northeast is approximately 28.10-feet below ground surface (bgs), which was measured on 05-03-1974. Localized groundwater appears to flow toward the northwest based on local topography.

2.4 Site Visit

A ***TERRASEARCH, inc.*** representative visited the subject site on May 29, 2007 and made the following observations:

- The site was located approximately less than 0.25-mile southwest from the intersection of East Woodward Avenue and McKinley Road. A levee road (approximately 15 feet high and 20 feet wide) was observed on the central portion of the site, between the South Woodward Avenue and the southeastern boundary of subject site. The slope of the levee road was approximately 2.5:1 (horizontal to vertical) on both sides and traversed northwest to southeast. Digital photographs of the site are shown on Figures 3 through 8.

- The subject site was bounded by East Woodward Avenue and Oakwood Shores residential development to north; Walthall Slough, an irrigation ditch and open lot to the south; open land to the east and South Woodward Avenue, Weatherbee Lake, newly constructed streets and residences to the west. The subject site was comprised of the following five adjoining parcels:

- *APN 241-260-05 (2368 East Woodward Avenue)* was primarily occupied by five structures, an almond orchard, row crops (tomatoes), a levee road and seasonal weeds. This portion of the site was connected to South Woodward Avenue by a gravel driveway. Two transite pipes and an intact car battery were observed near a PG & E power pole near the eastern site boundary along the driveway. A paved floor wood barn, a single story residence, a trailer, a dilapidated bunk house (storage), a barn/storage structure, a cement pad warehouse, five portable ASTs, one stationary 300 gallon diesel AST, farm equipment, debris piles, large amount of debris (tires, trash, plastic and metal items) was observed in the central portion of this parcel. The residence and trailer home were locked at the time of our site visit. The dilapidated bunk house was accessible and was used for storage. Trash cans, a propane tank, pole mounted transformers, two portable ASTs containing fertilizer and unspecified material were observed near the residence. No leaks were observed around the portable ASTs or pole mounted transformers. A portable diesel AST (approximately 1,000 gallons in capacity) was observed on the east side of the site. No leak was observed around the AST.

- The barn/storage structure located south of residence was constructed of corrugated sheet-metal with a dirt floor. A few isolated oil and diesel stained soil areas were observed on the floor of the structure, along with a few full 5-gallon waste oil and gasoline containers and a few car batteries. Furthermore, three empty portable ASTs were also observed on the floor and within a truck bed within the structure. Large amounts of refused items, such as tires, scrap metal/lumber, furniture, appliances, empty containers, farm equipment, empty plastic

and metal containers, a partially buried AST within the debris pile and abandoned trucks and tractors were observed within and outside the corrugated metal barn/storage structure. Areas directly north and south of the barn/storage structure were covered by an oily-tar hard surface used as asphalt. A solar powered security camera was observed on the top of a debris pile directly west of pole barn.

- An abandoned fuel pump with a cement pad was observed adjacent to the northwest corner of barn/storage structure. According to Ms. Diane Wurzel, an underground storage tank (UST) was removed immediately adjacent to the fuel pump by the tenant, who has leased the property for the last few years. The tenant was not present on the property at the time of our visit. However, Ms. Wurzel was not aware of any information regarding the removal and/or disposal of the UST.

- The warehouse, which was made of corrugated sheet-metal, was constructed on a cement floor and situated immediately west of the residence. Two 55-gallon drums filed with waste oil were observed immediately northeast of the warehouse. A large number of empty and full containers of pesticides, insecticides, herbicides and a few waste oil containers were observed within the warehouse. A rack mounted stationary empty 300-gallon diesel AST was observed immediately north of the warehouse. Diesel stained soil areas were observed beneath the faucet of the AST. Two 5-gallon containers of Chevron Oil were observed near the AST. A debris pile and a few minor stains were observed around the warehouse.

- There were several deep irrigation ditches, irrigation stand pipes, irrigation structures and valves through out the subject site. A burned car body and several tires were observed near the irrigation pump-houses on the northwestern portion of the site, between the levee road and the almond orchard. An abandoned pump station structure with aged steel pipes was observed near South Woodward Avenue. A few burn pits (associated with tree burning operations) were observed through out the almond orchard area.

- *APNs 241-240-02 & -03* comprised the southern portion of the subject site. Both parcels were covered by row crops and alp alpha fields. Irrigation stand pipes, valves and a levee road were observed on this portion of subject site. A water pump station was observed on the southern boundary near the slough. No leak was observed beneath the pole mounted transformer, which was located near the water pump station. A dirt pile was located on the northeast corner of APN 241-240-02.

- *APNs 241-040-04 & -05* (20601 and 20611 South Woodward Avenue) comprised the far western portion of the site and was located across South Woodward Avenue directly northeast of Weatherbee Lake. The levee road traversed the central portion of the site. A water pump station and irrigation system was observed on the western boundary of these parcels. A PG & E power line with associated poles and three pole mounted transformers were observed next to the irrigation structure. No leaks were observed beneath the transformers. Residences were located to the west and the northern boundary was bounded by a dirt pile and newly constructed Lakeview Drive (Oakwood Shores Development). Weatherbee Lake residential community was located to the southwest of this portion of the

site. Dense trees and seasonal grasses covered the southwestern portion of the site and the western boundary of these parcels was secured by cyclone fencing.

- PG & E power lines, utility lines and buried cable warning signs were located along the northern and western boundaries of the subject site. A few pole mounted and cement pad mounted transformers were also observed to the north, east and west of the subject site. No leaks were observed beneath these transformers.

- Based on visual observations, an abandoned fuel pump was located immediately northwest of the barn/storage structure. According to the current property owner Ms. Wurzel, an UST was removed near the barn/storage structure and pump island by the tenant without permits or records. A total of four portable and one stationary AST were observed on the site. One partially exposed AST was observed beneath a debris pile immediately west of the wood-barn structure. A stack of hay bails was observed inside the barn. Stained soil was present beneath the faucet of the stationary AST located to the north of the warehouse structure. Two portable ASTs were located north and west of the residence and the other three ASTs were located inside the barn/storage structure. All four ASTs appeared empty at the time of our site visit. In addition, several motor oil and waste oil containers and two 55-gallon full drums of unidentified liquid were present on the site. Furthermore, four areas of stained soil were observed inside the barn/storage structure to the south of residence. A collection of debris piles, tires, a solar energy operated security camera, farm equipments were observed on the site. No evidence of polychlorinated biphenyls (PCBs) was observed on the site. In addition, hard surface areas of oily-tar driveways were identified alongside the northern and southern boundary of the barn/storage structure. The United States Geological Survey (USGS) considers this a low exposure potential area for radon.

3.0 REGIONAL AND SITE HISTORY REVIEW

The history of the site was deduced from examination of historical aerial photographs, and historical topographic maps. A Sanborn Map and City Directory search were also conducted for the subject site.

TERRASEARCH, inc. has examined twelve (12) aerial photographs and seven (7) historical topographic maps of the subject site and vicinity, which were provided by Pacific Aerial Surveys and EDR. Data for the photographs are tabulated below:

AERIAL PHOTOGRAPHS EXAMINED

Flight Date	Approximate Scale	Identification Number
1957	1:6660	Cartwright, 1939860.5

1963	1:6660	Mark Hurd, 1939860.5
05-01-1968	1:30000	AV844-32-07, 08
1982	1:8280	WSA, 1939860.5
04-26-1985	1:63360	AV2600-18-20, 21
05-05-1989	1:63360	AV-3600-18-31, 32
07-24-1992	1:12000	AV-4230-0156-50; AV-4230-0157-49
1993	1:7992	USGS, 1939860.5
08-06-1996	1:12000	AV-5202-12-45; AV-5202-13-42
1998	1:7992	USGS, 1939860.5
09-22-1999	1:12000	AV-6100-156-51; AV-6100-157-53
09-09-2002	1:24000	AV-8244-8-26

HISTORICAL TOPOGRAPHIC MAPS

Date	Scale	USGS Topographic Map
1915	1:31680	7.5-Minute Lathrop Quadrangle
1952	1:24000	7.5-Minute Lathrop Quadrangle
1968	1:24000	7.5-Minute Lathrop Quadrangle
1976	1:24000	7.5-Minute Lathrop Quadrangle
1987	1:24000	7.5-Minute Lathrop Quadrangle
1994	1:24000	7.5-Minute Lathrop Quadrangle
1996	1:24000	7.5-Minute Lathrop Quadrangle

3.1 Regional History

On June 21, 1805, under orders from the Spanish Governor of California, Lieutenant Gabriel Moraga brought his cavalry from the Presidio of San Francisco to explore the interior valley. The pass that they traversed would later become a principal route between the coastal areas to the west and the great valley and mountains to the east and be known as the Pacheco Pass.

During Moraga's journey, he gave the name "Modesto" to the area that is now home to the city of the same name. The Lieutenant also discovered and named the Calaveras River. After

finding remnants of human skulls from an ancient Indian battle on the banks, he named the river "El Rio de Las Calaveras," meaning "the River of Skulls."

Moraga also named Sacramento, which means "Blessed Sacrament," as well as two major rivers. He named one river after "Our Lady of Guadalupe;" however, it was later renamed to honor Native Indian leader Estanislao, becoming the Stanislaus River. The second river was named in honor of "Our Lady of Mercy," becoming the Merced River.

According to written history, Moraga was the first non-native explorer to enter what is now the San Joaquin Valley. In 1808, Moraga traveled inland from mission San Jose in an attempt to find potential locations for Spanish missions, as well as to track down Indians that had left the mission. During these travels, he named a small creek "San Joaquin" after Saint Joachim. Later, it was discovered that the creek fed into a larger river, which happened to be a major tributary through the valley. As a result, the river's name was extended to the entire central valley, becoming known as the San Joaquin Valley. In 1850, at the time of statehood, San Joaquin County was created.

Today, San Joaquin County covers approximately 1,400 square miles and 921,600 acres of land. Located in the Central Valley, east of the San Francisco Bay Area, the county is made up seven cities, including Stockton, Escalon, Lathrop, Lodi, Manteca, Ripon and Tracy and thirteen unincorporated towns, including August, Country Club, Farmington, French Camp, Garden Acres, Kennedy, Lincoln Village, Linden, Lockeford, Morada, North and South Woodbridge and Taft Mosswood. In addition, the Community of Mountain House is included within San Joaquin County. As of 2006, the population of the county was approximately 620,000.

3.2 Site History

The first inhabitants of the south county attracted by bordering Stanislaus and San Joaquin Rivers and French Camp Slough were members of the Yokuts tribe of American Indians. They lived in this area not less than 4000 years ago. Cutle Salmon and Peter Clapp were the early pioneers of the San Joaquin County.

All of the land from Bronzan Road to Weatherbee was once the ranch of George Wetherbee, who came to the area in March of 1877 to the center of the land, where Manteca is now. An old house and a barn existed on this area at this time. He started working for a dollar a day. Wetherbee and his wife died in late 1940s are buried in the East Union Cemetery of Manteca. Walter Woodward came to Manteca in 1905 and farmed his land (160 acres) and lived at the present intersection of Airport Way and Woodward Road and died on September 21, 1939.

The City of Manteca is located in the central valley of California, about 80 miles east of San Francisco. Manteca was founded by Joshua Cowell in 1861. Cowell claimed about 1,000 acres (4 km^2) and built their houses on what is now the corner of Main and Yosemite Avenue, where the Bank of America building still stands. In 1873, the Central Pacific Railroad was put directly through town and "Cowell Station," a boxcar on the side of the tracks, was made a stop. Joshua Cowell's brother, Wright Cowell, had already named a "Cowell Station" near the City of Tracy,

California. Therefore, the name "Monteca" was chosen instead. However, an unfortunate misprinting of the train tickets caused the city's name to read "Manteca," which stands for "butter" or "lard" in Spanish. Since it would have been expensive and difficult to reprint the tickets, the name of the city was changed instead. In 1918, Manteca was incorporated as a city and Joshua Cowell became its first mayor.

As recently as the 1970s, Manteca "The Family City" existed primarily on agriculture and was still a stop between two freeways, Interstate 5 and California State Highway 99. The continuing rise in bay area real estate prices has caused more workers to look eastward for a cheaper place to live and a better place to raise their families. Since the construction of the 120 bypass portion of California State Route 120, Manteca has become a popular choice for these commuters. The 1990s saw a phenomenal increase in the city's population.

A recurring name in Manteca is "East Union". It was first used in 1857 for a school established in what is now Manteca. The school was named East Union in order to differentiate it from Union School, which is in an area now within Lathrop, California. A cemetery named East Union was established in 1872 and remains one of San Joaquin County's oldest landmarks. In 1966, the city of Manteca started another high school to relieve overcrowding in Manteca High School. The new school was given the name East Union High School in tribute to an old farmhouse school. Projects such as now finished Big League Dreams Sports Park, The Promenade Shops at Orchard Valley, an outdoor lifestyle mall, a performing arts center, convention center, the newly finished Stadium Center, and many upscale hotels.

According to the United States Census Bureau, the city has a total area of 41.2 km² (15.9 mi²), all land.Neighboring towns include Lathrop, Ripon, Escalon, and Tracy. Manteca is also in between the larger cities of Modesto and Stockton.

The city of Manteca is located in San Joaquin County, in the Stockton metro area. The latitude of Manteca is 37.797N and the longitude is -121.215W and is located in the Pacific Standard time zone. Elevation is 36 feet and the estimated population, in 2003, was 59,500. There are twenty two elementary and six high schools in the city of Manteca and is a part of the Manteca Unified School District.

3.3 Aerial Photographic Site Features

Aerial photographs indicated few changes at the subject site over the past 45 years (1957 to 2002). In 1957, the subject site was located within an agricultural district of San Joaquin County and surrounded by similar agricultural properties. The site consisted of a vacant land with a few structures, which were located on the eastern portion. A levee existed on the southern portion of the site. The Walthall Slough was observed directly south of the site. Row crops were observed on the northwest portion of the site in 1963 and most of the site was vacant. In 1968, irrigation ditches and a levee road trending northwest to southeast were observed on the site. Parcels APNs 241-040-04 & -05 (20601 and 20611 South Woodward Avenue) appeared vacant and was covered with isolated trees. A driveway was observed east of 20601 South Woodward Avenue. An object similar to a structure and the current pumping station were observed on the above

mentioned parcels. A total of six structures consisted of four barns and one residence (current residence) and an out building were observed east of the residence at 2368 East Woodward Avenue. Weatherbee Lake and residences were located to the west, Walt Hall Slough and vacant land were observed to the south, vacant land and ranches were observed to the east, Woodward Avenue and vacant land bounded the site to the north. San Joaquin River was observed to the west and railroad tracks were situated farther north of the site. No changes were observed on the site in 1982 and 1985. However, a residential development and lake were observed immediately northwest, across Woodward Avenue. State Highway 120 and 205 were situated north and northwest of the site. Seasonal crops were observed on the site in 1989. Ranches and other agricultural development increased in the surround area and around Weatherbee Lake. By 1992, row crops were observed on the site. A parking lot was constructed northwest across Woodward Avenue and orchards were observed to the southeast. The subject site remained unchanged in 1993 and 1996. Orchards were observed on the northwestern portion of the subject site in the aerial photos of 1998. Row crops were observed throughout the site. A total of seven structures (barns, residence and outbuildings) were present at 2368 East Woodward Avenue. Irrigation ditches were observed on the site and dense trees were observed on the western portion of the site, near Weatherbee Lake. Copies of the historical aerial photographs are attached.

3.4 Historical Topographic Map Features

The topographic map of 1915 mapped the subject site as vacant land and a few round hills situated east of the San Joaquin River. Minor ponds were mapped on the western, southern and central portions of the property. A dredger cut (levee road) was mapped traversing from the southeast toward the northwest portions of the property. The Walthall Slough was mapped immediately west-southwest. Unnamed streets and Western Pacific Railroad tracks were situated to the north. Rustic School was situated farther to the east of the subject site. By 1952, a canal was mapped on the central portion of the site, alongside the levee road and Woodward Avenue was mapped directly north and northwest of subject site. Two water-wells were mapped immediately off-site and north of Woodward Avenue. Weatherbee Lake and the associated residential community were mapped west-northwest of the site. A pump and water-well were mapped southeast of site. The Town of Manteca was mapped farther to the northeast of subject site. A total of seven large and small structures (current barns and residence) along with a driveway were mapped on the eastern portion of subject property by 1968. The canal was not mapped; however, a levee road and a driveway were mapped on the southwestern, western and southern portions of the property. The subject property remained unchanged in 1976 and ponds were still mapped southwest of structures and on the northwest portion of site. A few residences and reservoirs were mapped to the immediate northwest and farther to the north of subject site. No change was observed on the site in 1978. By 1994, a driveway and a structure were mapped on the southwestern portion and a new driveway was mapped on the northeastern portion of subject site. Highway 120 was mapped farther to the north of the site. No change was apparent on the subject site in 1996. A total of eight structures, levee road and ponds were still present on the subject site. Copies of the historical topographic maps are attached.

3.5 Sanborn Map Review

No Sanborn Fire Insurance Maps were available for the subject site or its surrounding.

3.6 City Directory Review

From 1971 through 2006, the site address was listed as "Picchi Farms, Inc." in 1976 and 1981 according to Haines Criss-Cross Directory and was not listed in 1971, 1986, 1991, 1996, 2001 or 2006.

3.7 Review of 50-Year Chain-of-Title

The 50-Year Chain-of-Title was received by the preparation date of this report. However, it will be provided, while received.

3.8 Review of City and County Building Records

TERRASEARCH, inc. visited the San Joaquin County Community Development Department and spoke with Ms. Trudy Reed to ascertain the past use and permit history of the subject site. According to Ms. Reed and based on the computerized data from 1992 up to present, files existed for APNs 241-040-04 & -05 (20601 and 20611 South Woodward Avenue). These files documented the rezoning history of above mentioned parcels from agricultural to residential properties. She further stated these parcels are owned by Baird Land Inc. In addition, we reviewed non-computerized files of permit history, which included historical building permits from 1942 to 1992 for San Joaquin County. Only one permit (#162905) was found, which was issued on September 19, 1989 for 20611 South Woodward Avenue. The permit was electrical and was issued to change electrical service to 100 amps (copies are attached).

According to the San Joaquin County official, parcels APN 241-260-05; 241-240-02 & -03 were recently annexed to the City of Manteca; therefore, no files were located for these parcels.

TERRASEARCH, inc. visited the City of Manteca Community Development Department and spoke with the Building; Planning and Public Works Departments officials to ascertain the past use and permit history of the subject site. According to Ms. Blaise Kuhl and Ms. Marilyn Bates parcels APNs 241-260-05; 241-240-02 and -03 were recently annexed to the City of Manteca. Therefore, no file existed for the subject parcels within the City of Manteca Community Development Department.

The San Joaquin County Assessor's Office was contacted regarding Assessor's Parcel Number (APN) and usage history of the subject site. The Assessor's Official verified five parcels comprised of APN 241-260-05 (2368 East Woodward Avenue) as a 236.49 acres used for irrigated crops; APN 241-240-02 as a 102.32 acres (vacant land); APN 241-240-03 as a 138.68 acres (vacant land); APN 241-040-04 (rural residential - 20601 Woodward Avenue) as a 0.94 acres and APN 241-040-05 (rural residential - 20611 Woodward Avenue) as a 1.73 acres. The entire property comprised of approximately 480 acres, which is owned by Baird Land Inc. She further stated they had no record of the construction history on the subject site.

Based on our site observations no structures exist on APNs 241-040-04 and -05.

Review of PG & E files by Jacobson Consulting revealed that Occidental Petroleum Corporation placed an underground gas pipeline that started from Mullins Gas Field south of the property to a fertilizer plant north of the site in 1963. The pipeline bisects the northeastern and southeastern corners of the property (as shown on Figure 2). However, the exact location of the pipeline is not known. PG&E owned the pipeline in 1965 through present and according to PG&E, the underground pipeline is steel in construction and not in use. A copy of the PG&E records is attached to the appendix.

3.9 Interview with Property Owners

TERRASEARCH, inc. contacted the current property owner Ms. Diane Wurzel the President of Baird Land, Inc. and conducted the following interview via the Property Owner Questionnaire and personal communications. Ms. Wurzel stated that her grandfather Ernest Baird, Sr. purchased the property in late 1930s or 1940s. The property was used only for farming purposes. The wood barn was used to store bails of alfalfa and was rebuilt approximately 15 years ago. Ms. Wurzel stated that most of the structures were comprised of metal and wood and was not aware that lead-based paint (LBP) or ACMs were used on any structures. Ms. Wurzel stated that there used to be a gas pump for farm vehicles in the 1950s and 1960s. To her knowledge there are no archeological findings, French drains, underground storage tanks, water-wells, monitoring, oil/gas wells on the site. Barns, storage buildings, above ground tanks and trash are present on the site. She did not know the name of the previous property owner. Ms. Wurzel did not know of any environmental factors that could or have potentially affected the subject site.

4.0 REVIEW OF PUBLIC RECORDS OF REGULATORY AGENCIES

4.1 Primary Contamination Sources

TERRASEARCH, inc. contacted San Joaquin County Office of Emergency Services Hazardous Materials Program and spoke with Ms. Michelle Halliwell to review any files that would identify hazardous material storage or site contamination. No files were found and according to Ms. Michelle Halliwell files would be located at the San Joaquin County Environmental Health Department.

TERRASEARCH, inc. also contacted the Environmental Health Division of San Joaquin County (EHDSC) to review any files that would identify hazardous material storage or site contamination, USTs cleanups/removal on the subject site. According to the EHDSC official, no file existed for the subject site that would identify the presence and/or removal of USTs on the subject site. We also contacted the City of Manteca Fire Department (CMFD) and Lathrop-Manteca Fire Prevention District (LMFPD) and spoke to Ms. Angela Manding to inquire if any file existed for the subject site and no files were found.

TERRASEARCH, inc. also contacted the Sacramento Office of Regional Water Quality Control Board (RWQCB) and spoke with Mr. Windy Orr to inquire if any environmental and/or spills-leaks-investigation-contamination (SLIC) files were available for review. According to the RWQCB, no files were available for the subject site.

TERRASEARCH, inc. also contacted the San Joaquin County Department of Agriculture (SJCDA) to inquire if any files existed that would identify the usage of chemicals on the subject site. No response to our request was received by the preparation date of this report.

The following is a summary of the Hazardous Substances in connection with identified uses:

Asbestos-Containing Materials (ACMs) and/or Lead-Based Paint (LBP)

Due to the age of the residential structure, which existed on the site prior to 1978, ACMs and LBP may have been applied to the construction of residence. The bunk house and barns were not painted and composed of corrugated metal sheet. Two transite pipes were observed on the east side along the site entrance dirt driveway.

Radon Gas

According to the EDR Radius Report, indoor radon average is < 2 pCi/L, which is below the EPA action level of 4 pCi/L. Properties planned for residential development that report radon gas levels greater than 4 pCi/L require mitigation prior to development.

Facility Storage Tanks (above or below ground)

A total of four portable empty ASTs were observed on the site, which appeared to be used for the transportation of fertilizer and/or diesel products. The ASTs were empty at the time of our site visit. ASTs were observed inside the storage barn, and around the residence, pole barn and warehouse. One stationary diesel AST supported by a steel rack was located immediately north of the warehouse. The cement pad and soil beneath the 300-gallon diesel AST faucet was heavily stained.

One abandoned fuel pump was located adjacent to the northwest corner of the above mentioned storage barn. According to the current property Ms. Diane Wurzel the tenant removed the UST near the fuel pump area; however, to her knowledge, no permits or soil samples were obtained for and during the UST removal activities. Furthermore, she did not know where the removed UST was transported.

Transformers or Other Electrical Equipment that uses Dielectric Fluid

There were a total of nine (9) pole mounted transformers on or adjacent to the subject site. These transformers were located on the southern and western portions of the site and near the residence at 2368 East Woodward Avenue. In addition, a high voltage cement pad mounted transformer was located to the west and a few pole mounted transformers were observed to the east and west of the subject site. No leaks were observed beneath any of these transformers.

Remediation and Site Closures

No records of remediation or site closure were found for the subject property.

Other Potential Adverse Environmental Impacts

Since the site was formerly and currently being used for agricultural purposes, metal and organochloride pesticides may have been applied to the site. However, our Phase II ESA (Reference 2) did not detect any organochloride or metal pesticide, or herbicide residues within the surficial soil beneath the entire site. However, elevated concentrations of petroleum-hydrocarbons, VOCs and PCBs were detected within soil and groundwater near the barns and ASTs at the site; however, the lateral and vertical extent of these chemicals is not known.

A large amount of debris and farm equipment including tires, partially buried AST, car batteries, motor oil and waste oil containers, pesticide, insecticide and herbicide containers may have leaked organochloride pesticides, herbicides and petroleum-hydrocarbons into the surficial soil beneath these containers, debris piles.

TERRASEARCH, inc. visually observed the exterior of the residence located at the subject site. The construction materials used prior to 1978 contained ACMs and were usually painted with LBP; therefore, the residence on the property may contain ACM and/or LBP and may pose a lead-based material (LBM) hazard.

An LBM hazard is defined as a condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, and lead-contaminated paint that are deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces *that would result in adverse human health effects* as established by the appropriate federal agency. LBP is considered to be hazardous under the following conditions:

Children under age seven chewing or mouthing on painted surfaces or when they are exposed to LBP dust, soil contaminated with lead, LBP which is in deteriorated condition (i.e., flaking, peeling, or cracking); and

Prolonged or repeated exposure of other facility occupants or workers to airborne LBP dust.

Certain types of paint applied before 1980 are more likely to contain lead. These are oil-based paints used in industrial facilities as well as residences, applied primarily to kitchens, bathrooms, and interior and exterior wood trim in residences. Latex paint for architectural use, which normally does not contain lead, became popular after 1960, and nearly all paint applied after 1980 to the interior and exterior of houses and non-industrial buildings was latex. However, because of their durable properties and lack of federal regulation, LBP continued to be used in industrial facilities, on steel structures, and for pavement markings. Additionally, LBP may also be found in non-industrial facilities, primarily in primers on ferrous metal surfaces.

A second concern may be the presence of asbestos containing material (ACM) within ceiling and floor tiles in all the structures, especially the tile siding on the walls of hallways and rest room floors etc. Asbestos products were used heavily in building construction from 1960 to 1980, and have been used as thermal, fireproof, and acoustical insulation after 1980. It has also been woven into fabrics for use in expansion joints of ductwork as well as for fireproof curtains. It has been used

as a strengthening agent in concrete, floor tile, mortar, grout, and drywall speckling compounds. In general, asbestos has been identified in over 3000 materials typically used in buildings.

4.2 Secondary Contamination Source Sites

For the purposes of this investigation, a search was made of 68 State and Federal regulatory agency lists of contaminated or potentially contaminated sites, or properties where transportation, handling, storage, and/or disposal of hazardous materials occurs or has occurred.

In accordance with recently adopted standards by the American Standard for Testing and Materials (ASTM, 2005), 68 databases were searched within a 1-mile radius of the site. Details and explanations of these databases are discussed within the attached EDR Radius Report. It should be noted that listings reported without location data were found to be more distant than the standard minimum search distance. In addition, some of the databases consist of lists of handlers, transporters, and generators of toxic materials rather than contaminated sites.

Out of all databases searched, no secondary potential site was identified within a 1-mile radius of the subject site.

Based on EDR report dated May 29, 2007, the subject site is located within a FEMA 500-year flood Zone, however according to the FEMA Flood Zone Map the site is divided into two separate zones. The northern portion of the site, north of the levee, is classified as Zone B which according to FEMA is *"areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where contributing drainage area is less than one square mile; or areas protected by levees from the base flood."* The southern portion of the site, south of the levee, is classified as Zone A21 which is *"areas of 100-year flood; base flood elevations."*

In addition, one 60-KV PG & E power line was mapped through the central portion of the subject site; however, this was not observed on the subject site. State Highway 120 and the Western Pacific Railroad track was mapped farther to the north of the subject property. A federal wetland was mapped directly to the southwest and west of the subject site.

No Coal Gas site was found in a search of Real Property Scan's ENVIROHAZ database.

Based on the EDR NEPA Check dated May 29, 2007, no mapped sites were found in EDR's search of available government records within the search radius around the target property. However, based on the site observations the Weatherbee Lake and Walthall Slough are located immediately west and south of the subject site.

One USGS water-well was identified within a 0.5-mile radius on the subject property as follows:

FED USGS (002S006E20G002M) – Located within 0.25-0.5-mile north-northeast and off-site. The water-well depth was reported 220 feet bgs and the groundwater table, which was measured on 05-03-1974, was reported 28.10 feet bgs. The well was reportedly constructed on 05-03-1974.

5.0 UPDATED PHASE II ENVIRONMENTAL SITE ASSESSMENT

A Phase II ESA, dated June 13, 2005 (Reference 2) was performed by ***TERRASEARCH, inc***. Based on the laboratory analytical results of soil samples collected from the site and debris piles organochloride pesticides, herbicides and metals arsenic, lead and/or mercury were determined to have not impacted the surficial soil and/or debris piles at the site. A low concentration of total extractable petroleum hydrocarbons reported as diesel (TEPHd) was detected within groundwater collected near the abandoned gas pipeline; however, no detectable concentrations of total petroleum hydrocarbons reported as gasoline (TPHg), TEPH reported as motor-oil or volatile organic compounds (VOCs) were detected in any soil or groundwater samples collected from the borings at the site.

Elevated concentrations of petroleum-hydrocarbons, PCBs as Aroclor 1260 and moderate concentrations of VOCs were detected near the above-ground storage tank (AST) and stained soil area (north of the warehouse) in both soil and groundwater samples. In addition, elevated concentrations of beta- and gamma-BHC (organochloride pesticides) were detected south of the residence and may indicate former pesticide storage and/or pesticide mixing areas. TPHg, TEPHd, TEPHmo and Aroclor 1260 were detected above Preliminary Remediations Goals (PRGs) and Environmental Screening Levels (ESLs) and will require remediation; however, the lateral and vertical extent of these chemicals was not known and further environmental assessment is warranted around the barn area.

6.0 DATA GAPS

The following Data Gaps were recognized and addressed satisfactorily to set aside concerns of missed information:

- A total of thirteen "orphaned sites" were not mapped for the database report. This data gap was filled by reviewing the location of the streets or by physically driving the neighborhood of the subject site to confirm that these orphaned sites were outside the search radius. ***TERRASEARCH, inc***. suggests the orphaned sites are not a Data Gap.

Therefore, no significant Data Gaps were identified at the site which would alter our environmental conclusions.

7.0 SUMMARY OF FINDINGS

- The subject property is located in the southern portion of San Joaquin County, in the southwestern portion of Manteca, California. The site is comprised of five adjoining parcels totaling approximately 480 acres (APNs 241-240-02; -03; 241-040-04; -05 and 241-260-05) and located at 2368, 20601 and 20611 Woodward Avenue, California. Currently the subject site is occupied by five structures, one trailer home, an almond orchard, row crops

(tomatoes), alphalpha fields, irrigation system, farming equipment, ASTs, an abandoned fuel pump and a considerable amount of debris. Based on the historical aerial photographic, historical topographic map, property owner interview and file review data structures existed on the eastern portion of the subject and used for agricultural purposes (orchards and row crops) since 1968. In addition, the levee road and irrigation system were present on the site since at least 1968. Since the structures were constructed prior to 1978, ACM and/or LBP may be present on and/or within the construction materials.

- Based on the site observations a total of six small and large ASTs are located on the subject site. One large portable AST was observed northwest and east of the residence and two portable AST were observed within the barn/storage structure south of the residence. One portable AST was observed east of the pole barn. Furthermore, one partially buried AST was observed beneath a debris pile immediately west of the pole barn and one 300-gallon diesel AST, mounted to a metal rack was observed immediately north of the warehouse. Heavily stained soil was observed beneath the faucet of the AST. A solar power operated security camera was also observed on the top of a debris pile to the west of pole barn.

- According to current property owner Ms. Diane Wurzel interview there was a gasoline UST on the site during the 1950s and 1960s, which was used to fuel farm equipment. In addition, an abandoned fuel pump was observed adjacent to the northwest corner of the barn/storage structure. During our site visit and personal communication, Ms. Wurzel mentioned that the tenant removed a UST adjacent to the abandoned fuel pump approximately 15 to 20 years ago. However, Ms. Wurzel stated that no permits or soil samples were obtained during the UST removal process.

- Based on visual observations, two 55-gallon drums filled with waste-oil were observed immediately northeast of the warehouse. A few diesel and waste-oil stained soil locations were observed inside the barn/storage structure and beneath the 300-gallon diesel AST faucet situated north of the warehouse. A large amount of debris, including pesticide, insecticide and herbicide containers, motor oil and waste oil containers, partially buried AST, abandoned appliances, batteries, tires, burned car body, concrete debris, plastic and steel trash material were present on the property, primarily near the barn/storage and warehouse structures.

- Two transite pipes were observed adjacent to a power pole on the east side of the site driveway to 2368 East Woodward Avenue. Abandoned appliances and an empty car fuel tank were observed in a northerly ditch located south of East Woodward Avenue.

- An abandoned gas pipeline is situated on the northeastern and southeastern portions of the property. Leaks from this former gas pipeline were not reported and are not known. In addition, hard surface areas of oily-tar driveways were observed alongside the northern and southern boundary of the barn/storage structure and were utilized as farm roads.

- Two 55-gallon drums filled with waste-oil, a few diesel and waste-oil stained soil locations inside the barn/storage structure and beneath the 300-gallon diesel AST faucet, a large

collection of debris, including pesticide, insecticide and herbicide containers, motor oil and waste oil containers, partially buried AST, abandoned appliances, batteries, tires, plastic and steel trash material were present on the property, primarily near the barn/storage and warehouse structures. In addition, according to the property owner Ms. Diane Wurzel interview a gasoline UST existed on the site during the 1950s and 1960s, which was used to fuel farm equipment. During our site visit and personal communication, Ms. Wurzel mentioned that the tenant removed a UST adjacent to the abandoned fuel pump approximately 15 to 20 years ago. However, Ms. Wurzel stated that no permits or soil samples were obtained during the UST removal process. Based on these findings ***TERRASEARCH, inc.*** recommended the performance of Phase II ESA on the site, which will cover debris piles, stained soils, former UST area and structures. These areas will be tested for organochloride and metal pesticides, petroleum hydrocarbon constituents, CAM 17 Metals, PCBs, ACMs and LBP. In addition, the performance of drilling along the abandoned gas pipeline was recommended. The soil and groundwater samples from the pipeline should be analyzed for TPHg, TEPHmo; TEPHd, VOCs and lead.

- A Phase II ESA (Reference 2), which was performed by ***TERRASEARCH, inc***., indicated organochloride pesticides, herbicides and metals arsenic, lead and/or mercury did not impacted the surficial soil at the site and the three debris stockpiles do not contain hazardous wastes and do not pose a significant environmental risk to the subject site. TEPHd was detected within groundwater collected near the abandoned gas pipeline; however, no detectable concentrations of TPHg, TEPHmo or VOCs were detected in any soil samples or groundwater samples collected from the borings. Minor leaking may have occurred in the immediate vicinity of the abandoned gas pipeline; however, it appeared the leaking was not significant and did not warrant further environmental assessment. Elevated concentrations of petroleum-hydrocarbons, PCBs as Aroclor 1260 and moderate concentrations of VOCs were detected near the AST and stained soil area (north of the warehouse) in both soil and groundwater samples. Elevated concentrations of beta- and gamma-BHC (organochloride pesticides) were detected south of the residence and may indicate former pesticide storage and/or pesticide mixing areas. TPHg, TEPHd, TEPHmo and Aroclor 1260 were detected above PRGs and ESLs and will require remediation; however, the lateral and vertical extent of these chemicals in not known and further environmental assessment is warranted.

- A PG & E power line, utility boxes and buried cable warning signs are present to the immediate north and west of subject site along the south and east sides of Woodward Avenue. PG & E power line with associated poles and a few pole mounted transformers are present on the site, which are located around the structures; near the on-site southerly and westerly located water pump stations. However, no evidence of leak was observed beneath the pole mounted transformers.

- No evidence of polychlorinated biphenyls (PCBs) was observed on the site. The United States Geological Survey (USGS) considers this a low exposure potential area for radon. No archeological findings, pits, ponds or noxious odors were noted at the site.

- Based on EDR information dated May 29, 2007 no secondary contamination source was reported within 1-mile of the site. No USGS water-well was identified within a 0.25-mile

radius of the subject site. No groundwater contamination was reported. Thirteen (13) orphan sites were reported within the vicinity of the subject site, which are located outside the search area. Therefore, the possibility of the groundwater contamination beneath the subject site is highly remote.

8.0 SITE-SPECIFIC RECOMMEDATIONS

In view of the above findings, it is the opinion of ***TERRASEARCH, inc***., that further environmental assessment of the subject site **is warranted**, and should include the following prior to development of the land:

- Retaining the services of State-certified LBP and asbestos professional(s) to perform a LBP and ACM survey on the structures for testing and confirmation of LBP and ACM within and around the structures.

- At least 12 additional borings should be drilled to groundwater around the AST and stained soil area. The borings must be logged by a field geologist according to the USCS, soil and groundwater samples should also be collected from the borings for laboratory analysis. Selected soil and groundwater samples should be analyzed for TPHg, TEPH, VOCs, organochloride pesticides, and PCBs using EPA Methods 5030/8021, 8015 (modified), 8260 and 8080.

- At least 12 hand-augered borings should be advanced in the vicinity of boring B1 and the residence to approximately 2 feet bgs and soil samples will be collected at 1 and 2 feet bgs for laboratory analysis. The 24 soil samples collected from the hand-augered borings will be capped, labeled and placed within a pre-chilled ice-chest for temporary storage and delivered under chain-of-custody documentation to a State-certified hazardous waste testing laboratory for analysis. The soil samples will be analyzed for organochloride pesticides using EPA Method 8080 on a standard 5-day turnaround basis.

9.0 GENERAL RECOMMENDATIONS

- All debris items, including the burned car body, chemical containers (pesticide, insecticide, herbicide, motor oil, gasoline and waste oil) and two waste-oil drums, all ASTs, fuel pump, abandoned appliances and furniture, batteries, tires, burned car body, concrete debris, and other trash materials present on the site must be removed and properly disposed in accordance with local, County and State regulations.

- Existing irrigation system consisted of concrete and PVC pipes, concrete debris, stand pipes, concrete structures, pumping stations and valves should be properly located, removed and backfilled in accordance with local, county and state requirements.

- Due to the age of the on-site structures septic tanks and water-wells may be present around the structures. If any exists, then care should be taken to carefully remove the septic tanks and associated leach fields.

- If any water-well is located and not needed for future use, should be properly destroyed in accordance with local, county and state regulations.

- The presence of any unusual odor, suspicious materials during the mass grading operations should be notified to the Soil Engineer and Property Owner immediately.

- If any pipe that may lead to any underground fuel storage tank is identified during grading and/or demolition operations, the Soil Engineer and Environmental Engineer should be notified immediately for further evaluation. Further, if any PVC, concrete and/or metal pipes are identified during mass grading operations, the Soil Engineer and Environmental Engineer should be notified immediately for further evaluation.

- Any deep excavations (such as the removal of trees or foundations) should be left open for further geotechnical evaluation unless their immediate backfill is necessary. If such excavations are backfilled with loose, un-compacted soil, their locations must be accurately located for proper backfilling during mass grading.

- During grading activities of the property, soil technicians and operators must be aware of any USTs, buried debris, or other potential adverse environmental condition which may be discovered on the property. If any one of these conditions is encountered, then the Soil Engineer must be notified and the specific condition appropriately remedied in accordance with the local, county and state requirements.

10.0 LIMITATIONS

This environmental site assessment was performed according to the recommended guidelines established by ASTM designation E1527-2005 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. This report has been prepared for the specific application to this project in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in this area. This report contains information reported to ***TERRASEARCH, inc***., by other sources, accordingly, and errors or omissions may be present that ***TERRASEARCH, inc***. cannot be responsible for. The findings of this report apply to the present condition of the subject site only (as of May 29, 2007); the opinions expressed herein are subject to revision in light of new information relevant to the site and/or in its immediate surroundings. Results from Phase I environmental investigations are based on surficial evidence and public records and databases only. Subsurface conditions of the site cannot be properly evaluated without performing a subsurface environmental investigation and actually test the soil,

and groundwater for potential contaminants. Contaminants of concern include, but are not limited to organochloride pesticides, metals As, Pb, and Hg and/or petroleum hydrocarbons.

11.0 INFORMATION SOURCES

ASTM, 2005. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*: ASTM Standards E1527-05.

City of Manteca Building and Planning Department.

City of Manteca Public Works Department.

City of Manteca Fire Prevention Department (CMFPD)

Environmental Data Resources, Inc. (EDR) Report dated May 29, 2007.

Environmental Data Resources, Inc. (EDR) Aerial Photography Print Service dated May 29, 2007.

FEMA Flood Zone Map, Community-Panel Number 0602990595 D, Revised April 2, 2002.

Interview with the property owner – Ms. Diane Wurzel, Property Owner Questionnaire and Personal Communications.

Jennings, Charles W., 1977, *Geologic Map of California*, California Department of Conservation, Division of Mines and Geology.

Lathrop-Manteca Fire Prevention Departments (LMFPD).

Pacific Aerial Surveys.

Regional Water Quality Control Board (RWQCB), Sacramento.

San Joaquin County Assessor's Office.

San Joaquin County Building and Planning Department.

San Joaquin County Environmental Health Department.

San Joaquin County, Office of Emergency Services (OES).

San Joaquin County Department of Agriculture (SJCDA).

United States Geological Survey, 7.5-Minute Topographic Maps, Lathrop Quadrangle, dated 1915, Scale 1:31,680.

United States Geological Survey, 7.5-Minute Topographic Maps, Lathrop Quadrangle, dated 1952, 1968, 1976, 1987, 1994 and 1996, Scale 1:24,000.

Online Documents

www.co.**san-joaquin**.ca.us/TopLevelPages/aboutour**county**.htm

http://en.wikipedia.org/wiki/Manteca,_California#History

http://www.epodunk.com/cgi-bin/genInfo.php?locIndex=10471

http://en.wikipedia.org/wiki/San_Joaquin_County,_California

http://www.virtuallodi.com/history/Moraga.asp

Historical Documents

Manteca Public Library:

Evelyn Prouty Thompson, 1980, Manteca, Selected Chapters from Its History

George H. Tinkham, 1923, History of San Joaquin County, California with Biographical Sketches

Kristen Santos, Phyllis Soderstorm, Thea Sountag Harris and Monica Harris, 2003 - Images of America, Manteca

Hohenthal, Caswell and others, 1972 - Stream in a Thirsty Land

12.0 ENVIRONMENTAL PROFESSIONAL QUALIFICATION

This Phase I Environmental Site Assessment was performed by Mr. A. Wakil Mateen, a qualified Environmental Professional as defined in 40 CFR Part 312.10.

Mr. Mateen holds a Baccalaureate degree from Kabul University Polytechnic Institute Afghanistan in Geology and Mining (an accredited institution of higher education) and a Masters of Science degree from University Moscow Russia (an accredited institution of higher education) in the discipline of Engineering Geology. Mr. Mateen holds a valid Registered Environmental Assessor license in the State of California (07771).

Mr. Mateen has over 10 years of environmental, geological and hydrogeological experience, more specifically in environmental assessments including Phase I and Phase II ESAs, which exceeds the regulatory requirement of three years of relevant experience.

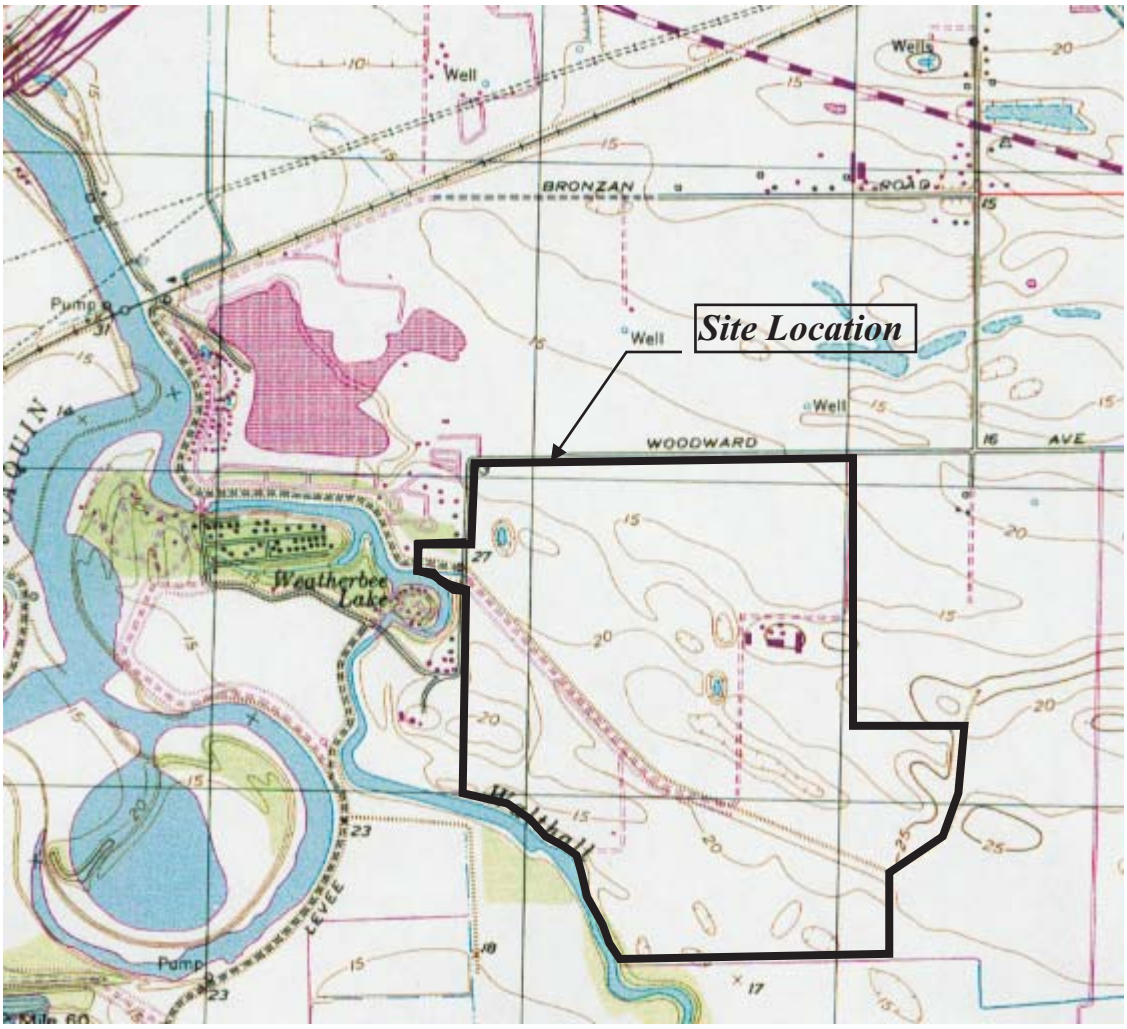
Mr. Mateen remains current in his field and has received 1.6 Continuing Education Units (CEUs) and 12 Professional Development Hours (PDHs) in the previous 12 month period. He is also compliant with OSHA HAZWOPER 8-hour refresher requirements, including medical surveillance.



As required in 40 CFR 312.27, Mr. Mateen directly conducted the Field Visit including the visual inspection of the Site, adjacent properties and surrounding areas. The photo above was taken at the site on May 29, 2007.

"All Appropriate Inquiry" was also conducted by Mr. Mateen as were all interviews. The record Search, historical photo and topographic map search were conducted by EDR, Inc.

The findings, opinions and recommendations of this Phase I Environmental Site Assessment are those of ***TERRASEARCH, inc***. as formulated by Mr. Mateen.



Source: USGS, Lathrop Quadrangle, 7.5-Minute, 1:24,000 (1996)

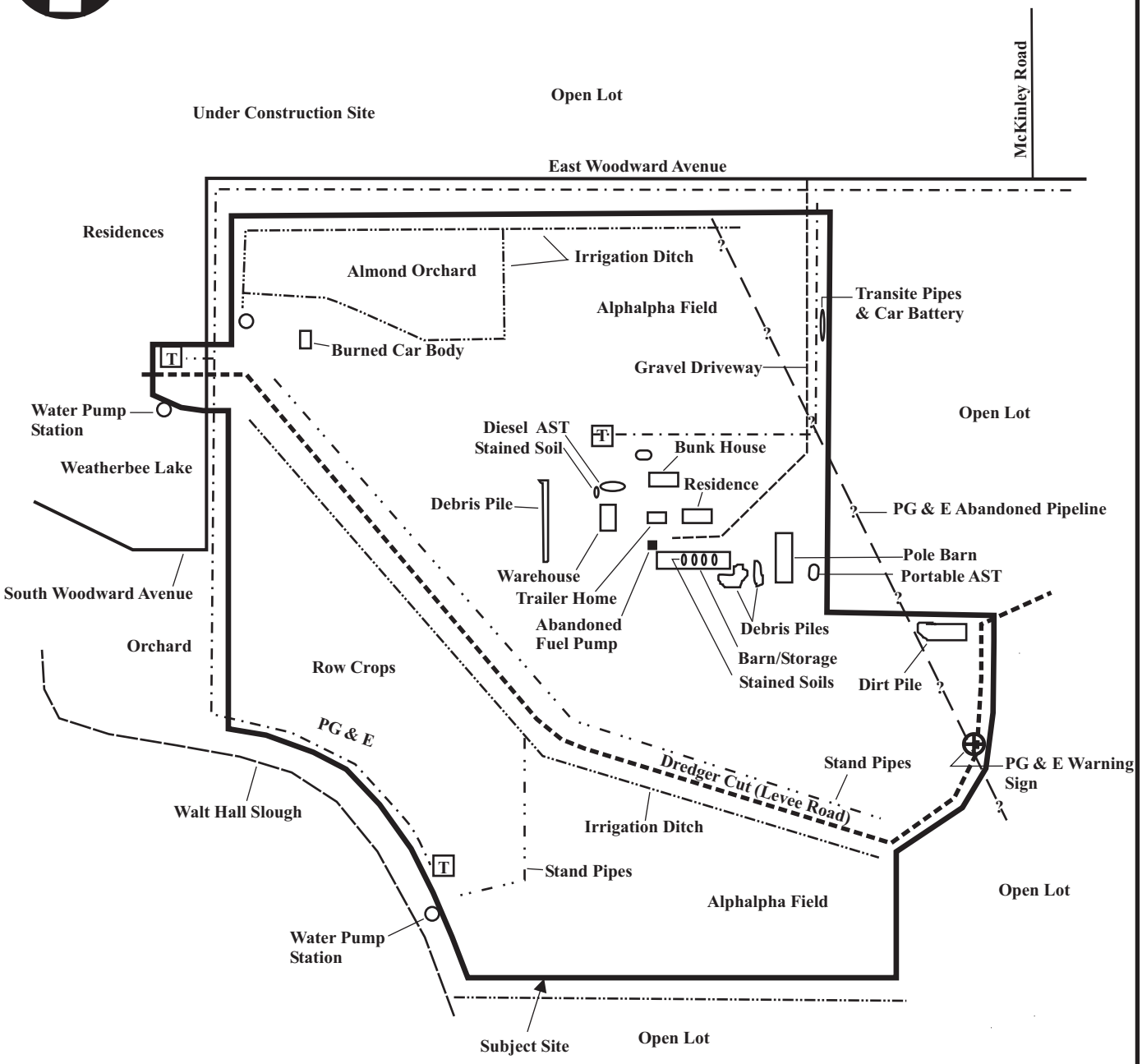
VICINITY MAP

Environmental • Geotechnical • Special Inspections • Materials Testing
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-8882

UPDATED PHASE I ENVIRONMENTAL SITE ASSESSMENT
20601, 20611 AND 2368 WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E	05/2007	AWM

FIGURE
1



Legend:

T - Pole Mounted Transformers

AST - Above Ground Storage Tanks

0 - Stained Soils Locations at Storage/barn and AST.

SITE PLAN

Environmental • Geotechnical • Special Inspections • Materials Testing

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20601, 20611 AND 2368 WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	SCALE
11515.E	05/2007	N.T.S.

FIGURE 2



Figure 3A: Viewing south, an open field to the east of the site.

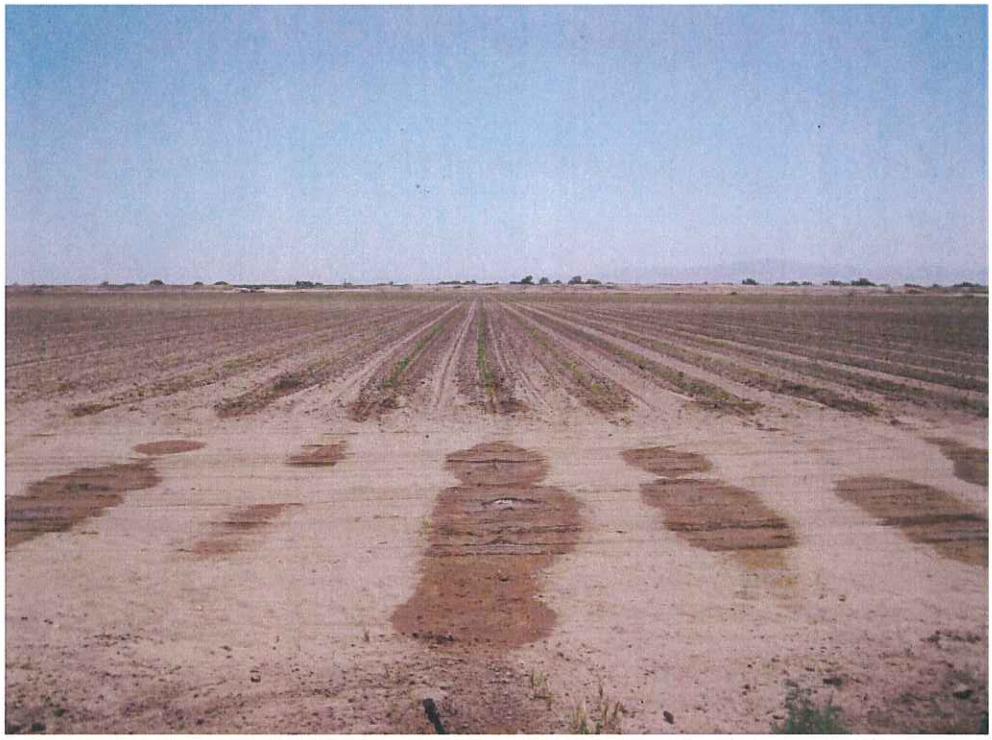


Figure 3B: Viewing south across the eastern portion of the site.

SITE PHOTOGRAPHS

Environmental • Geotechnical • Special Inspections • Materials Testing
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257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-8662

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2368; 20601 AND 20611 WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E	05/2007	AWM

FIGURE
3

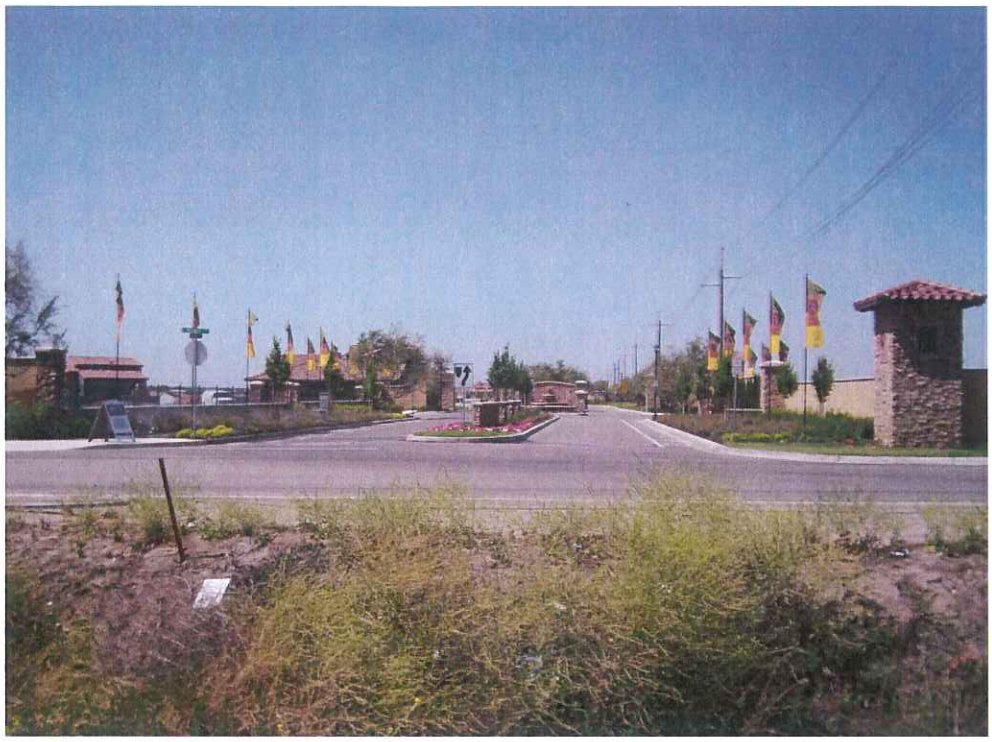


Figure 4A: Oakwood Shores residential development to the north of the site.



Figure 4B: Viewing over a Levee Road, located on the central portion of the site.

SITE PHOTOGRAPHS

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
TERRASEARCH INC.
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2368; 20601 AND 20611 WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
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FIGURE
4



Figure 5A: A burned car body on the northwestern portion of the site.



Figure 5B: The northwestern portion of the site is occupied by almond orchard.

SITE PHOTOGRAPHS

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257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-6662

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MANTECA, CALIFORNIA

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FIGURE 5



Figure 6A: Farm equipments on the eastern portion of the site.



Figure 6B: Viewing south across the southern portion of site (row crops).

SITE PHOTOGRAPHS

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TERRASEARCH INC.
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MANTECA, CALIFORNIA

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FIGURE
6



Figure 7A: Lakeveiw Drive to the west of site across Woodward Avenue.



Figure 7B: A view of the northeastern portion of the site.

SITE PHOTOGRAPHS

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MANTECA, CALIFORNIA

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11515.E	05/2007	AWM

FIGURE 7

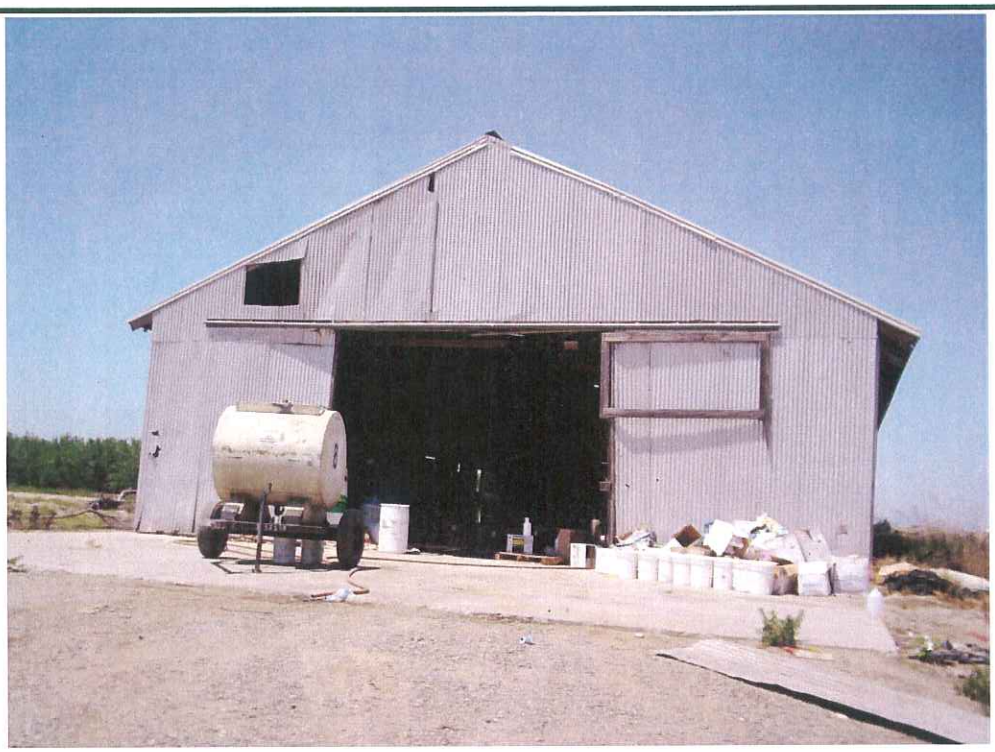


Figure 8A: The front view of an on-site warehouse at 2368 East Woodward Avenue.



Figure 8B: An on-site aboveground storage tank (AST) and stained soil to the north of warehouse.

SITE PHOTOGRAPHS

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FIGURE
8



Figure 9A: A refused fuel pump adjacent to the northwest of barn/storage structure.



Figure 9B: A water pump station on the southern boundary of the site (near Walthall Slough).

SITE PHOTOGRAPHS

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA94550 PHONE: (925) 243-6662

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MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
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FIGURE
9



The EDR Radius Map
with GeoCheck®

Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 1939860.2s

May 29, 2007

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

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

2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

COORDINATES

Latitude (North):	37.773000 - 37° 46' 22.8''
Longitude (West):	121.278400 - 121° 16' 42.2''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651626.1
UTM Y (Meters):	4181819.8
Elevation:	17 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37121-G3 LATHROP, CA
Most Recent Revision:	1994

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
Proposed NPL Proposed National Priority List Sites
Delisted NPL National Priority List Deletions
NPL LIENS Federal Superfund Liens
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

EXECUTIVE SUMMARY

ERNS Emergency Response Notification System
HMIRS Hazardous Materials Information Reporting System
US ENG CONTROLS Engineering Controls Sites List
US INST CONTROL Sites with Institutional Controls
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
US BROWNFIELDS A Listing of Brownfields Sites
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
ODI Open Dump Inventory
TRIS Toxic Chemical Release Inventory System
TSCA Toxic Substances Control Act
FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS Section 7 Tracking Systems
LIENS 2 CERCLA Lien Information
RADINFO Radiation Information Database
US CDL Clandestine Drug Labs
HIST FTTS FIFRA/TSCA Tracking System Administrative Case Listing
ICIS Integrated Compliance Information System
LUCIS Land Use Control Information System
DOT OPS Incident and Accident Data
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
MINES Mines Master Index File
FINDS Facility Index System/Facility Registry System
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

HIST Cal-Sites Historical Calsites Database
CA BOND EXP. PLAN Bond Expenditure Plan
SCH School Property Evaluation Program
Toxic Pits Toxic Pits Cleanup Act Sites
SWF/LF Solid Waste Information System
CA WDS Waste Discharge System
WMUDS/SWAT Waste Management Unit Database
Cortese "Cortese" Hazardous Waste & Substances Sites List
SWRCY Recycler Database
LUST Geotracker's Leaking Underground Fuel Tank Report
CA FID UST Facility Inventory Database
SLIC Statewide SLIC Cases
UST Active UST Facilities
HIST UST Hazardous Substance Storage Container Database
AST Aboveground Petroleum Storage Tank Facilities
SWEEPS UST SWEEPS UST Listing
CHMIRS California Hazardous Material Incident Report System
Notify 65 Proposition 65 Records
DEED Deed Restriction Listing
VCP Voluntary Cleanup Program Properties
CLEANERS Cleaner Facilities
WIP Well Investigation Program Case List
CDL Clandestine Drug Labs
RESPONSE State Response Sites

EXECUTIVE SUMMARY

HAZNET Facility and Manifest Data
EMI Emissions Inventory Data
ENVIROSTOR EnviroStor Database

TRIBAL RECORDS

INDIAN RESERV Indian Reservations
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 not identified.

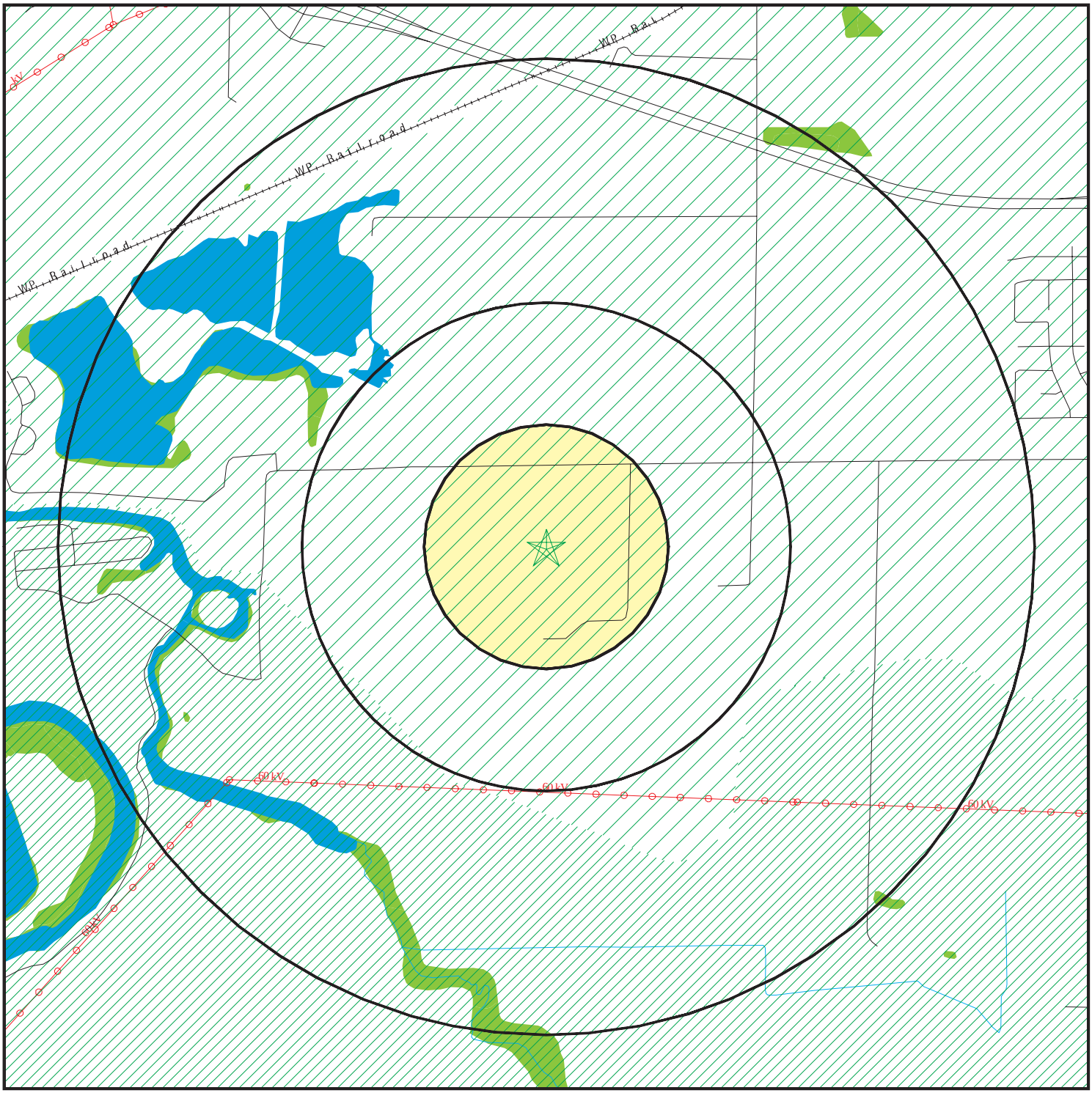
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

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

Site Name	Database(s)
WHISKEY SLOUGH ROAD 1/8 MILE NORTH OF CITY OF HOLT	CHMIRS, SLIC
MANTECA UNIFIED SCHOOL DI	Cortese
MANTECA WELLS WATER CORP-PRIMARY	UST
MANTECA SERVICE CENTER	AST
S. SAN JOAQUIN IRRIGATION DIST	AST
MANTECA FACILITY - COMPOSTING	WMUDS/SWAT
CITY OF MANTECA	HAZNET
CITY OF MANTECA WATER WELL #12	HAZNET
MANTECA USD - NILE GARDENS ELEMENTARY	HAZNET
28906 SO MANTECA ROAD	HMIRS
SECTION OF MANTECA AND RIVER RD.	ERNS
CITY OF MANTECA	EMI
CITY OF MANTECA	EMI

OVERVIEW MAP - 1939860.2s



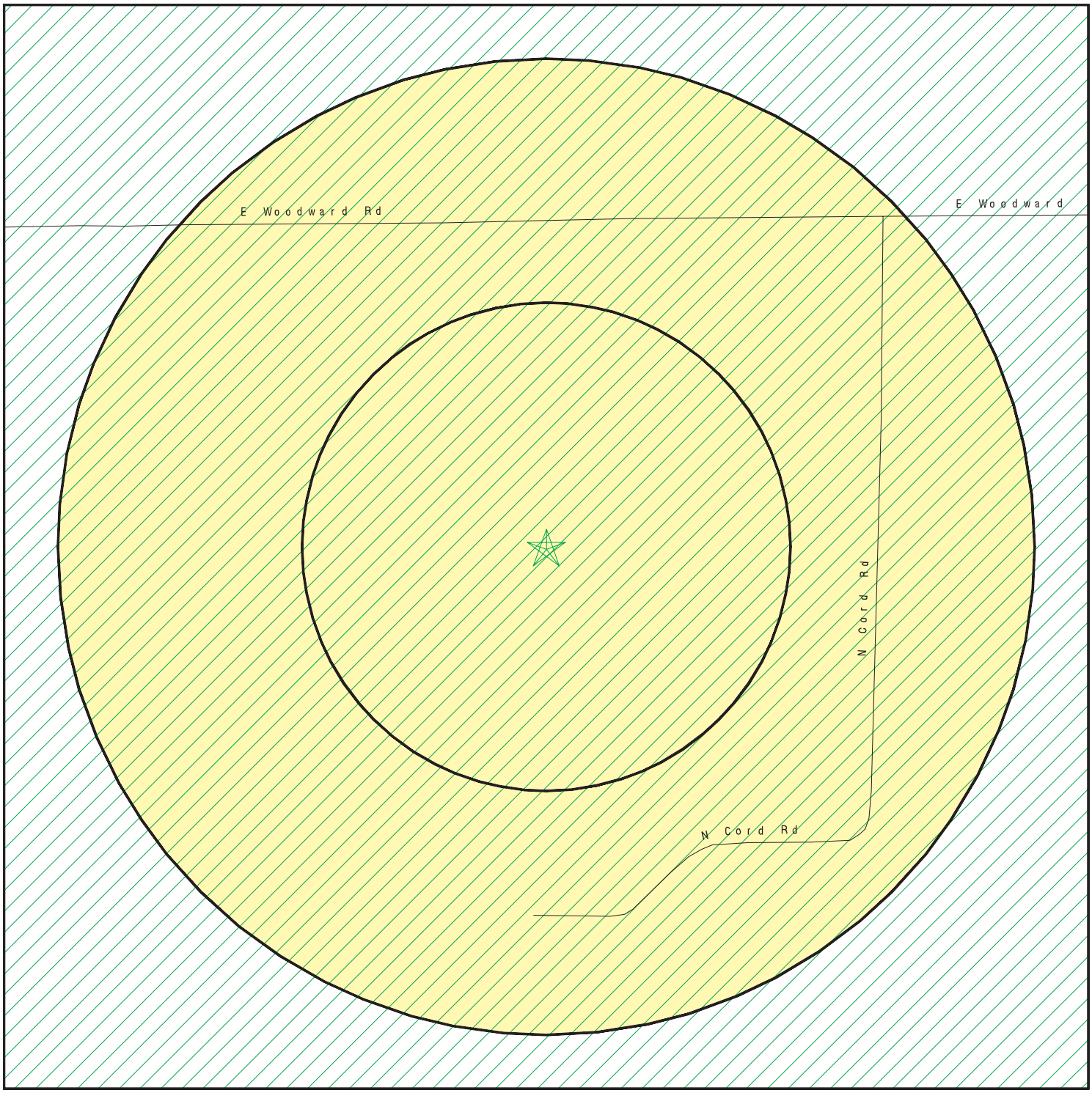
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year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

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
		INQUIRY #:	1939860.2s
LAT/LONG:	37.7730 / 121.2784	DATE:	May 29, 2007 2:10 pm

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DETAIL MAP - 1939860.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List 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

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Trails of Manteca	CLIENT: Terrasearch Inc.
ADDRESS: 2368 East Woodward Avenue Manteca CA 95337	CONTACT: Rob Campbell
LAT/LONG: 37.7730 / 121.2784	INQUIRY #: 1939860.2s DATE: May 29, 2007 2:10 pm

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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
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
Hist Cal-Sites		1.000	0	0	0	0	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
Cortese		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
SWRCY		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
SWEEPS UST		0.250	0	0	NR	NR	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
DEED		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RESPONSE		1.000	0	0	0	0	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
ENVIROSTOR		1.000	0	0	0	0	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
	NO SITES FOUND		

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MANTECA	S103957090	CITY OF MANTECA	CORPORATION YARD	95337	HAZNET
MANTECA	S107142311	CITY OF MANTECA WATER WELL #12	1170 HOLT LN	95337	HAZNET
MANTECA	A100226308	MANTECA SERVICE CENTER	10901 E. HWY. 120		AST
MANTECA	A100226524	S. SAN JOAQUIN IRRIGATION DIST	11011 E. HWY. 120		AST
MANTECA	S104857260	MANTECA UNIFIED SCHOOL DI	2901 LOUISE	95337	Cortese
MANTECA	2005702905	28906 SO MANTECA ROAD	28906 SO MANTECA ROAD		HMIRS
MANTECA	S104566249	MANTECA USD - NILE GARDENS ELEMENTARY	5700 E NILE AVE	95337	HAZNET
MANTECA	U004024304	MANTECA WELLS WATER CORP-PRIMARY	220 W OAK ST	95337	UST
MANTECA	90170150	SECTION OF MANTECA AND RIVER RD.	SECTION OF MANTECA AND RIVER RD.		ERNS
MANTECA	S106920533	CITY OF MANTECA	VARIOUS LOCATIONS	95337	EMI
MANTECA	S106920526	CITY OF MANTECA	376 VICTORY LANE	95337	EMI
MANTECA CA	S104384464	MANTECA FACILITY - COMPOSTING	2403 W. LOUISE AVE	95337	WMUDS/SWAT
SAN JOAQUIN COUNTY	S105637094		WHISKEY SLOUGH ROAD 1/8 MILE NORTH OF CITY OF HOLT		CHMIRS, SLIC

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: 01/25/2007
Date Data Arrived at EDR: 01/31/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 05/03/2007
Next Scheduled EDR Contact: 07/30/2007
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 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

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: 09/27/2006
Date Data Arrived at EDR: 11/01/2006
Date Made Active in Reports: 11/22/2006
Number of Days to Update: 21

Source: EPA
Telephone: N/A
Last EDR Contact: 05/03/2007
Next Scheduled EDR Contact: 07/30/2007
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: 12/28/2006
Date Data Arrived at EDR: 01/31/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 05/03/2007
Next Scheduled EDR Contact: 07/30/2007
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
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
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: 02/27/2007
Date Data Arrived at EDR: 03/21/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 37

Source: EPA
Telephone: 703-603-8960
Last EDR Contact: 03/21/2007
Next Scheduled EDR Contact: 06/18/2007
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: 03/21/2007
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 28

Source: EPA
Telephone: 703-603-8960
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/14/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 38

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

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: 06/13/2006
Date Data Arrived at EDR: 06/28/2006
Date Made Active in Reports: 08/23/2006
Number of Days to Update: 56

Source: EPA
Telephone: (415) 495-8895
Last EDR Contact: 05/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

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: 12/31/2006
Date Data Arrived at EDR: 01/24/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 47

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 04/24/2007
Next Scheduled EDR Contact: 07/23/2007
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: 12/31/2005
Date Data Arrived at EDR: 04/17/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 27

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 04/17/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Annually

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: 04/20/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 29

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
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: 04/20/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 29

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 05/11/2007
Next Scheduled EDR Contact: 08/06/2007
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: 12/31/2005
Date Data Arrived at EDR: 09/20/2006
Date Made Active in Reports: 11/22/2006
Number of Days to Update: 63

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Varies

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: 04/04/2007
Date Data Arrived at EDR: 04/04/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 51

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/12/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Semi-Annually

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.

Date of Government Version: 08/23/2006
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 35

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
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: 03/27/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/27/2007
Next Scheduled EDR Contact: 07/02/2007
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: 12/31/2005
Date Data Arrived at EDR: 11/08/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 82

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/17/2007
Next Scheduled EDR Contact: 06/18/2007
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

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.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 06/22/2006
Date Made Active in Reports: 08/23/2006
Number of Days to Update: 62

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 04/27/2007
Next Scheduled EDR Contact: 06/18/2007
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: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
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: 02/26/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
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: 02/26/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Quarterly

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: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Annually

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.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 01/08/2007
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 3

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/22/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Quarterly

DOT OPS: Incident and Accident Data

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

Date of Government Version: 02/14/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 41

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Varies

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: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: No Update Planned

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: 02/21/2007
Date Data Arrived at EDR: 04/03/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
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: 05/01/2007
Date Data Arrived at EDR: 05/03/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 05/03/2007
Next Scheduled EDR Contact: 07/30/2007
Data Release Frequency: Quarterly

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: 03/26/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Varies

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: 03/08/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

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: 10/17/2006
Date Data Arrived at EDR: 11/29/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 43

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 05/25/2007
Next Scheduled EDR Contact: 08/06/2007
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: 04/05/2007
Date Data Arrived at EDR: 04/25/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 30

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

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: 02/06/2007
Date Data Arrived at EDR: 03/28/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 47

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/28/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Semi-Annually

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: 01/18/2007
Date Data Arrived at EDR: 01/23/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 35

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 05/14/2007
Next Scheduled EDR Contact: 07/02/2007
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
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
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
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/06/2007
Next Scheduled EDR Contact: 06/11/2007
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
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 05/25/2007
Next Scheduled EDR Contact: 08/27/2007
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
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
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: 04/30/2007
Next Scheduled EDR Contact: 07/30/2007
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

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

Date of Government Version: 03/12/2007
Date Data Arrived at EDR: 03/15/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 22

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 03/15/2007
Next Scheduled EDR Contact: 06/11/2007
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: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 03/19/2007
Date Data Arrived at EDR: 03/21/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 03/21/2007
Next Scheduled EDR Contact: 06/18/2007
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.

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: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/11/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 16

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
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: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
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: 05/07/2007
Next Scheduled EDR Contact: 08/06/2007
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: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
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: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
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, Calveras, 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: 04/01/2007
Date Data Arrived at EDR: 04/25/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 15

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 04/25/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

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: 03/27/2007
Next Scheduled EDR Contact: 06/25/2007
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: 05/14/2007
Next Scheduled EDR Contact: 08/13/2007
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: 04/06/2007
Next Scheduled EDR Contact: 07/09/2007
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: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
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: 04/10/2007
Date Data Arrived at EDR: 04/11/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 16

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
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: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: No Update Planned

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: 04/10/2007
Date Data Arrived at EDR: 04/11/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 16

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
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: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
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: 510-286-0457
Last EDR Contact: 04/06/2007
Next Scheduled EDR Contact: 07/09/2007
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: 05/14/2007
Next Scheduled EDR Contact: 08/13/2007
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: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
Data Release Frequency: Varies

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: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
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: 04/02/2007
Next Scheduled EDR Contact: 07/02/2007
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: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
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: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
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: 04/06/2006
Date Data Arrived at EDR: 04/06/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 35

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 04/03/2007
Next Scheduled EDR Contact: 07/03/2007
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: 03/13/2007
Date Data Arrived at EDR: 03/14/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 23

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 05/29/2007
Next Scheduled EDR Contact: 08/27/2007
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: 04/10/2007
Date Data Arrived at EDR: 04/11/2007
Date Made Active in Reports: 05/03/2007
Number of Days to Update: 22

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 07/09/2007
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: 02/05/2007
Date Data Arrived at EDR: 02/06/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 43

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
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
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
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: 05/01/2007
Date Data Arrived at EDR: 05/01/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 04/30/2007
Next Scheduled EDR Contact: 07/30/2007
Data Release Frequency: Quarterly

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 1980'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
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
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).

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: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
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: 04/12/2007
Next Scheduled EDR Contact: 07/16/2007
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: 04/03/2007
Date Data Arrived at EDR: 04/05/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 22

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
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: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
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: 04/18/2005
Date Data Arrived at EDR: 04/18/2005
Date Made Active in Reports: 05/06/2005
Number of Days to Update: 18

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/25/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

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

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 04/27/2007
Next Scheduled EDR Contact: 07/23/2007
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: 12/31/2006
Date Data Arrived at EDR: 03/07/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
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: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
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: 12/31/2005
Date Data Arrived at EDR: 11/20/2006
Date Made Active in Reports: 01/03/2007
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 05/11/2007
Next Scheduled EDR Contact: 08/06/2007
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: 04/17/2007
Next Scheduled EDR Contact: 07/16/2007
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 identifes 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.

Date of Government Version: 02/27/2007
Date Data Arrived at EDR: 02/28/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2007
Next Scheduled EDR Contact: 05/28/2007
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: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 05/11/2007
Next Scheduled EDR Contact: 08/06/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Quarterly

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: 03/30/2007
Date Data Arrived at EDR: 03/30/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Quarterly

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: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

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: 02/19/2007
Date Data Arrived at EDR: 02/27/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 36

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/06/2006
Date Data Arrived at EDR: 10/04/2006
Date Made Active in Reports: 11/08/2006
Number of Days to Update: 35

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Minnesota, Mississippi and North Carolina.

Date of Government Version: 03/20/2007
Date Data Arrived at EDR: 04/16/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 28
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
A listing of underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

Date of Government Version: 02/19/2007
Date Data Arrived at EDR: 02/27/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 36
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004
Date Data Arrived at EDR: 12/29/2004
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 37
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

Date of Government Version: 09/06/2006
Date Data Arrived at EDR: 10/04/2006
Date Made Active in Reports: 11/08/2006
Number of Days to Update: 35
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

Date of Government Version: 01/11/2007
Date Data Arrived at EDR: 01/12/2007
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 17
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Semi-Annually

INDIAN UST R4: Underground Storage Tanks on Indian Land

Date of Government Version: 03/20/2007
Date Data Arrived at EDR: 04/16/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 28

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/04/2007
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Quarterly

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).

Date of Government Version: 04/24/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 14

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/24/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 11

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
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: 02/27/2007
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 36

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/29/2007
Next Scheduled EDR Contact: 08/27/2007
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: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 17

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 05/07/2007
Next Scheduled EDR Contact: 08/06/2007
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 04/13/2007
Date Data Arrived at EDR: 04/16/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 21

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/12/2007
Next Scheduled EDR Contact: 06/04/2007
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.

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: 05/16/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/31/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 05/14/2007
Next Scheduled EDR Contact: 08/13/2007
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 02/13/2007
Date Data Arrived at EDR: 03/09/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 28

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 05/16/2007
Next Scheduled EDR Contact: 08/13/2007
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 03/14/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Varies

Site Mitigation List

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

Date of Government Version: 12/04/2006
Date Data Arrived at EDR: 01/09/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 15

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 05/14/2007
Next Scheduled EDR Contact: 08/13/2007
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 12/14/2006
Date Data Arrived at EDR: 12/15/2006
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 39

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 05/14/2007
Next Scheduled EDR Contact: 08/13/2007
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: 05/25/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/20/2007
Date Data Arrived at EDR: 02/21/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 05/29/2007
Next Scheduled EDR Contact: 08/13/2007
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 01/26/2007
Date Data Arrived at EDR: 02/20/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 04/30/2007
Next Scheduled EDR Contact: 07/30/2007
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: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 17

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 04/24/2007
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/07/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/07/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/20/2007
Date Made Active in Reports: 04/12/2007
Number of Days to Update: 23

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/07/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 04/04/2007
Date Data Arrived at EDR: 04/05/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 22

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
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: 02/06/2007
Date Data Arrived at EDR: 02/07/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 20

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 02/06/2007
Date Data Arrived at EDR: 02/07/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 42

Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Contaminated Sites

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

Date of Government Version: 01/31/2007
Date Data Arrived at EDR: 02/16/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 11

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 05/01/2007
Next Scheduled EDR Contact: 07/30/2007
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: 01/31/2007
Date Data Arrived at EDR: 02/15/2007
Date Made Active in Reports: 02/27/2007
Number of Days to Update: 12

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 05/01/2007
Next Scheduled EDR Contact: 07/30/2007
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

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: 03/23/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
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: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2006
Date Data Arrived at EDR: 01/03/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
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: 03/29/2007
Date Data Arrived at EDR: 04/24/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 16

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 04/04/2007
Next Scheduled EDR Contact: 07/02/2007
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite Facilities

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

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/12/2007
Number of Days to Update: 30

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 03/05/2007
Next Scheduled EDR Contact: 06/04/2007
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: 04/06/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 04/24/2007
Number of Days to Update: 14

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 04/02/2007
Next Scheduled EDR Contact: 04/16/2007
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: 04/30/2007
Date Data Arrived at EDR: 05/01/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 24

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Annually

Fuel Leak List

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

Date of Government Version: 04/11/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 04/09/2007
Next Scheduled EDR Contact: 07/09/2007
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: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Varies

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 04/03/2007
Date Data Arrived at EDR: 04/04/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 23

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/04/2007
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: 03/26/2007
Date Data Arrived at EDR: 04/16/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 24

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 04/18/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 19

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/26/2007
Next Scheduled EDR Contact: 06/25/2007
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: 04/23/2007
Date Data Arrived at EDR: 04/24/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 16

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 04/23/2007
Next Scheduled EDR Contact: 07/23/2007
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/04/2007
Date Made Active in Reports: 05/24/2007
Number of Days to Update: 20

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 05/04/2007
Next Scheduled EDR Contact: 07/02/2007
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.

Date of Government Version: 03/28/2007
Date Data Arrived at EDR: 04/25/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 15

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/11/2007
Next Scheduled EDR Contact: 06/11/2007
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: 08/01/2006
Date Data Arrived at EDR: 09/05/2006
Date Made Active in Reports: 10/05/2006
Number of Days to Update: 30

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/21/2007
Next Scheduled EDR Contact: 08/20/2007
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 02/28/2007
Date Data Arrived at EDR: 03/23/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 35

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/14/2007
Next Scheduled EDR Contact: 06/11/2007
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: 03/28/2007
Date Data Arrived at EDR: 04/24/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 13

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/10/2007
Next Scheduled EDR Contact: 07/09/2007
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 02/05/2007
Date Data Arrived at EDR: 02/20/2007
Date Made Active in Reports: 03/21/2007
Number of Days to Update: 29

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 04/30/2007
Next Scheduled EDR Contact: 07/16/2007
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: 12/31/2004
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 04/07/2006
Number of Days to Update: 49

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 03/16/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 04/01/2007
Date Data Arrived at EDR: 04/05/2007
Date Made Active in Reports: 05/08/2007
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/05/2007
Next Scheduled EDR Contact: 07/02/2007
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: 10/26/2006
Date Data Arrived at EDR: 11/29/2006
Date Made Active in Reports: 01/05/2007
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 03/02/2007
Next Scheduled EDR Contact: 05/28/2007
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 81

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/16/2007
Next Scheduled EDR Contact: 06/11/2007
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/19/2007
Next Scheduled EDR Contact: 06/18/2007
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 46

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 04/24/2007
Next Scheduled EDR Contact: 07/09/2007
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
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 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

TRAILS OF MANTECA
2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

TARGET PROPERTY COORDINATES

Latitude (North):	37.77300 - 37° 46' 22.8''
Longitude (West):	121.2784 - 121° 16' 42.2''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651626.1
UTM Y (Meters):	4181819.8
Elevation:	17 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37121-G3 LATHROP, CA
Most Recent Revision:	1994

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).

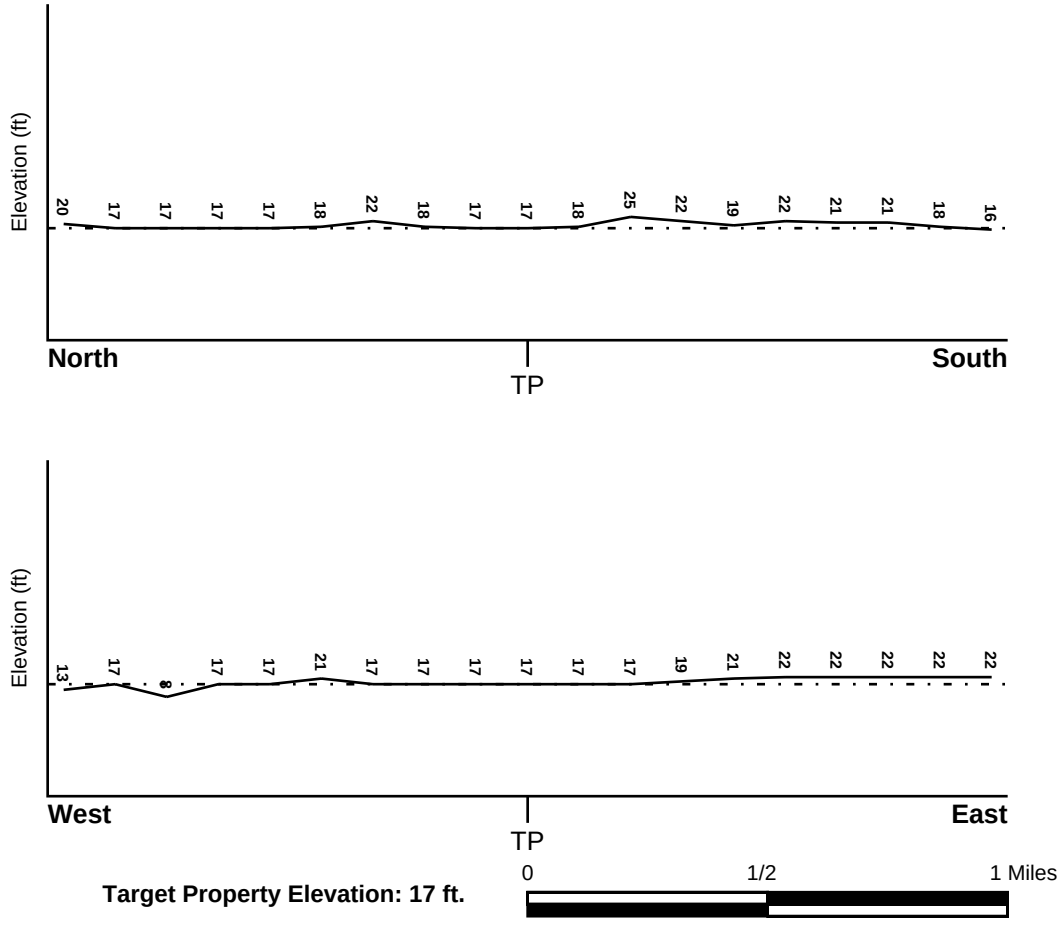
TOPOGRAPHIC INFORMATION

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 North

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	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0602990595C

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LATHROP	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.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
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

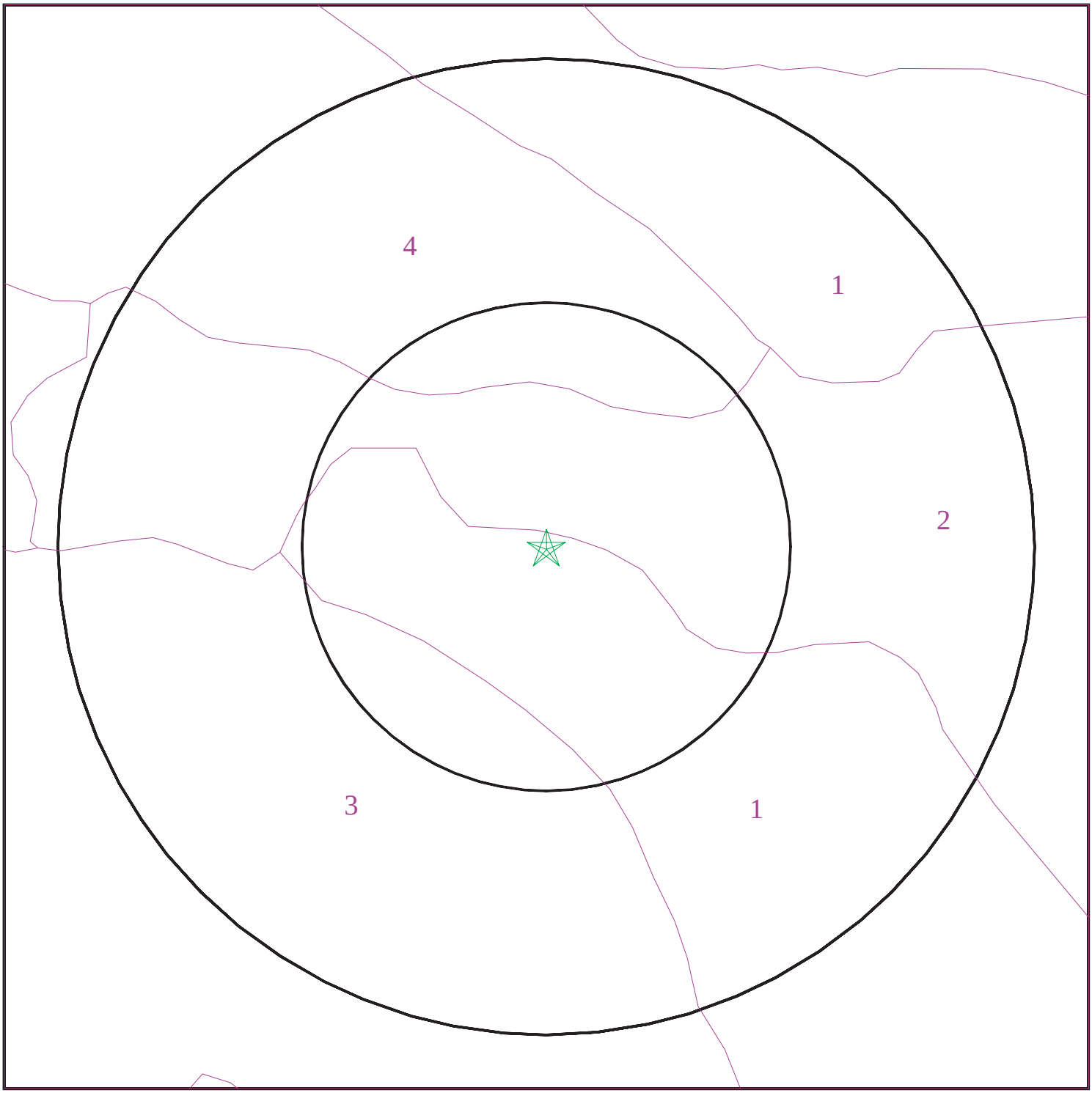
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed 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 - 1939860.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
		INQUIRY #:	1939860.2s
LAT/LONG:	37.7730 / 121.2784	DATE:	May 29, 2007 2:10 pm

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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: DELLO

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: Very poorly. Soils are wet to the surface most of the time. Depth to water table is less than 1 foot, or is ponded.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	7 inches	loamy sand	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: 20.00 Min: 6.00	Max: 8.40 Min: 6.60
2	7 inches	60 inches	sand	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: 20.00 Min: 6.00	Max: 8.40 Min: 6.60

Soil Map ID: 2

Soil Component Name: TINNIN

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

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: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information

	Boundary			Classification			
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**	**Permeability Rate (in/hr)**	**Soil Reaction (pH)**
1	0 inches	28 inches	loamy coarse 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: 20.00 Min: 6.00	Max: 7.80 Min: 6.10
2	28 inches	53 inches	loamy coarse 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: 20.00 Min: 6.00	Max: 7.80 Min: 6.10
3	53 inches	75 inches	loamy coarse 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: 20.00 Min: 6.00	Max: 8.40 Min: 6.60

Soil Map ID: 3

Soil Component Name: COLUMBIA

Soil Surface Texture: fine 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: Somewhat poorly. Soils commonly have a layer with low hydraulic conductivity, wet state high in profile, etc. Depth to water table is 1 to 3 feet.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information

	Boundary			Classification			
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**	**Permeability Rate (in/hr)**	**Soil Reaction (pH)**
1	0 inches	12 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.80 Min: 6.10
2	12 inches	60 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.80 Min: 6.10

Soil Map ID: 4

Soil Component Name: GUARD

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	15 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: 0.60 Min: 0.20	Max: 8.40 Min: 7.90
2	15 inches	72 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: 0.20 Min: 0.06	Max: 8.40 Min: 7.90

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

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS3222572	1/4 - 1/2 Mile NNE
3	USGS3222758	1/4 - 1/2 Mile ESE
8	USGS3222717	1/2 - 1 Mile SE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

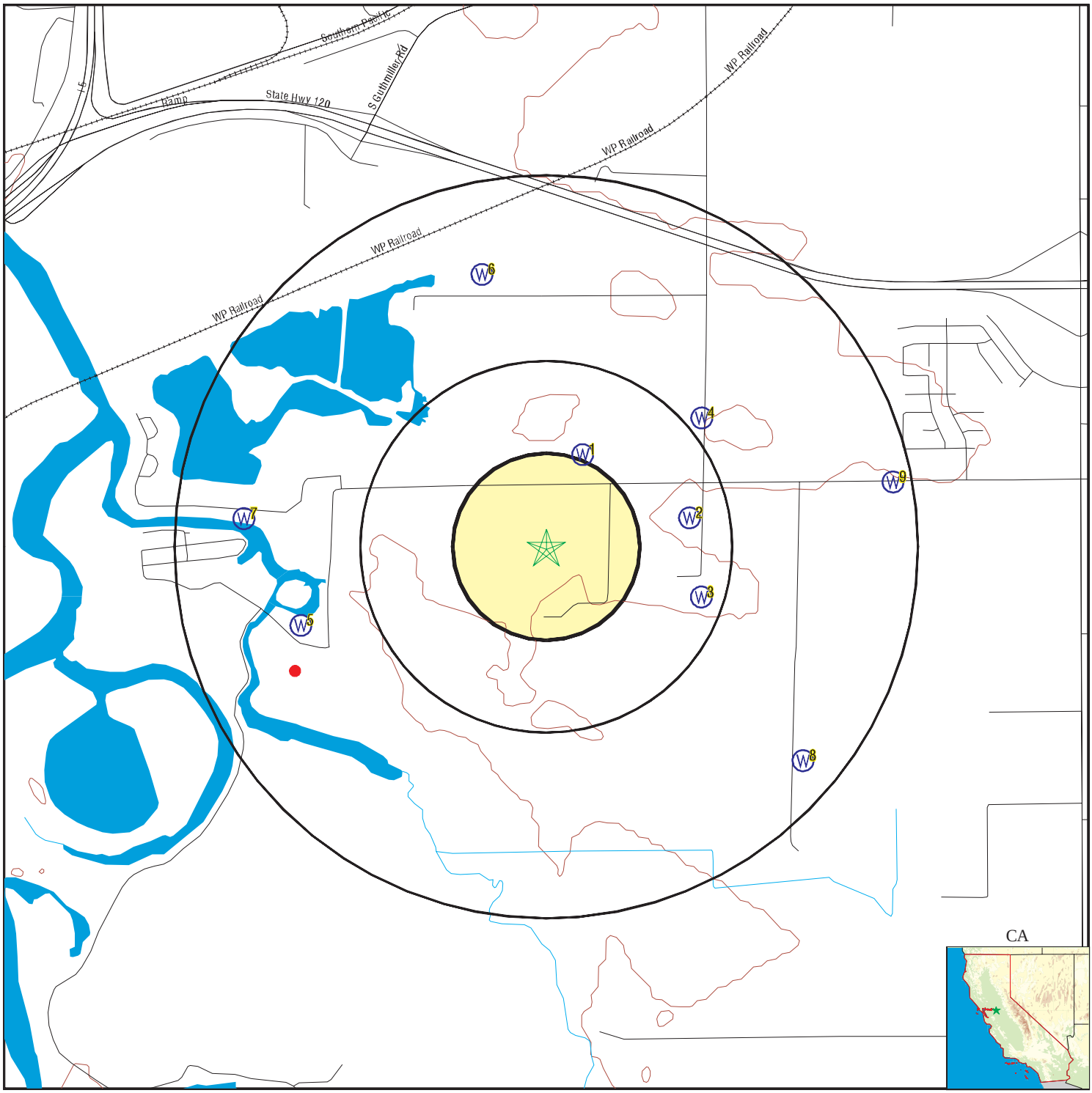
MAP ID	WELL ID	LOCATION FROM TP
2	CADW00000038248	1/4 - 1/2 Mile ENE
4	CADW00000038264	1/2 - 1 Mile NE
5	2547	1/2 - 1 Mile WSW
6	CADW00000038286	1/2 - 1 Mile NNW
7	2545	1/2 - 1 Mile West
9	CADW00000038253	1/2 - 1 Mile East

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/2 - 1 Mile WSW	

PHYSICAL SETTING SOURCE MAP - 1939860.2s



- 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

SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
		INQUIRY #:	1939860.2s
LAT/LONG:	37.7730 / 121.2784	DATE:	May 29, 2007 2:10 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
NNE **FED USGS** **USGS3222572**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	374636121163201
Site name:	002S006E20G002M		
Latitude:	374636		
Longitude:	1211632	Dec lat:	37.7765945
Dec lon:	-121.27660902	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SESWNES11T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	15.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19740305
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:	220	Hole depth:	260
Source of depth data:	Not Reported		
Project number:	8479423710		
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:	1974-03-05	Ground water data end date:	1974-03-05
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-03-05	28.10	

2
ENE **CA WELLS** **CADW00000038248**
1/4 - 1/2 Mile
Higher

Longn:	-121.2703		
Latn:	37.7742		
Stwellno:	02S06E11J001M		
Districtco:	7		
Wellusecod:	I		
Countycode:	39		
Gwcode:	502201	County:	San Joaquin
State:	CA	Gw name:	San Joaquin Valley (Eastern San Joaquin
District:	Central District		
Descriptio:	Irrigation		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

3
ESE
1/4 - 1/2 Mile
Higher | **FED USGS** | **USGS3222758**

Agency cd:	USGS	Site no:	374616121161101
Site name:	002S006E11R001M		
Latitude:	374616		
Longitude:	1211611	Dec lat:	37.77103905
Dec lon:	-121.27077545	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	NESESES11T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	15.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19741025
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 ABOVE AND BELOW E-CLAY (MIOCENE-PLEISTOCENE)		
Well depth:	280	Hole depth:	310
Source of depth data:	Not Reported		
Project number:	8479423710		
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:	1979-05-22
Water quality data end date:	1979-05-22	Water quality data count:	1
Ground water data begin date:	1974-10-25	Ground water data end date:	1974-10-25
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-25	21.20	

4
NE
1/2 - 1 Mile
Higher | **CA WELLS** | **CADW00000038264**

Longn:	-121.2697		
Latn:	37.7781		
Stwellno:	02S06E11H001M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	39		
Gwcode:	502201	County:	San Joaquin
State:	CA	Gw name:	San Joaquin Valley (Eastern San Joaquin
District:	San Joaquin District		
Descriptio:	Undetermined		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

5
WSW
1/2 - 1 Mile
Lower | **CA WELLS** | **2547**

Water System Information:

Prime Station Code:	02S/06E-10R01 M	User ID:	39C
FRDS Number:	3901122001	County:	San Joaquin
District Number:	69	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	374612.0 1211722.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	3901122		
System Name:	ISLANDER MARINA		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	06/03/2004 00:00:00	Findings:	3.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/18/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/23/2004 00:00:00	Findings:	2.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/19/2004 00:00:00	Findings:	1.9 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/25/2004 00:00:00	Findings:	1.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/24/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/14/2004 00:00:00	Findings:	2.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/28/2004 00:00:00	Findings:	2.5 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/05/2004 00:00:00	Findings:	2.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	03/22/2004 00:00:00	Findings:	35.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04/15/2004 00:00:00	Findings:	.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04/15/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	05/18/2004 00:00:00	Findings:	2.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	12/13/2001 00:00:00	Findings:	38.1 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	03/18/2002 00:00:00	Findings:	36.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06/17/2002 00:00:00	Findings:	49 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12/13/2002 00:00:00	Findings:	32.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/14/2003 00:00:00	Findings:	4.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06/19/2003 00:00:00	Findings:	37.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09/26/2003 00:00:00	Findings:	41.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/22/2004 00:00:00	Findings:	1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	03/22/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	04/15/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	04/27/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	04/27/2004 00:00:00	Findings:	1.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	05/24/2004 00:00:00	Findings:	2.1 UG/L
Chemical:	1,2-DICHLOROETHANE		

6
NNW **CA WELLS** **CADW00000038286**
1/2 - 1 Mile
Higher

Longn:	-121.2805		
Latn:	37.7837		
Stwellno:	02S06E02P001M		
Districtco:	7		
Wellusecod:	I		
Countycode:	39		
Gwcode:	502201	County:	San Joaquin
State:	CA	Gw name:	San Joaquin Valley (Eastern San Joaquin
District:	Central District		
Descriptio:	Irrigation		

7
West **CA WELLS** **2545**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	02S/06E-10J02 M	User ID:	PTA
FRDS Number:	3910023001	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	374627.0 1211732.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01 - EQUIPMENT YARD		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

System Number: 3910023
System Name: Oakwood Lake Water District
Organization That Operates System:
874 E. WOODWARD
MANTECA, CA 95337
Pop Served: 400 Connections: 435
Area Served: OAKWOOD LAKE RESORT

Sample Collected:	03/21/2006 00:00:00	Findings:	668 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/21/2006 00:00:00	Findings:	83 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/21/2006 00:00:00	Findings:	210 UG/L
Chemical:	IRON		
Sample Collected:	06/03/2004 00:00:00	Findings:	510 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03/22/2005 00:00:00	Findings:	856 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/22/2005 00:00:00	Findings:	70 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/22/2005 00:00:00	Findings:	746 UG/L
Chemical:	IRON		
Sample Collected:	03/22/2005 00:00:00	Findings:	184 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/24/2005 00:00:00	Findings:	10 UNITS
Chemical:	COLOR		
Sample Collected:	05/24/2005 00:00:00	Findings:	885 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	05/24/2005 00:00:00	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	05/24/2005 00:00:00	Findings:	265 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	05/24/2005 00:00:00	Findings:	265 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	05/24/2005 00:00:00	Findings:	215 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05/24/2005 00:00:00	Findings:	66 MG/L
Chemical:	CALCIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	12 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	99 MG/L
Chemical:	SODIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	3.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	70 MG/L
Chemical:	CHLORIDE		

Sample Collected:	05/24/2005 00:00:00	Findings:	15 UG/L
Chemical:	ARSENIC		
Sample Collected:	05/24/2005 00:00:00	Findings:	233 UG/L
Chemical:	BARIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	800 UG/L
Chemical:	IRON		
Sample Collected:	05/24/2005 00:00:00	Findings:	165 UG/L
Chemical:	MANGANESE		
Sample Collected:	09/12/2000 00:00:00	Findings:	10.52 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09/12/2000 00:00:00	Findings:	2.13 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09/12/2000 00:00:00	Findings:	3.93 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	09/12/2000 00:00:00	Findings:	1.11 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	03/13/2001 00:00:00	Findings:	1.39 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	03/13/2001 00:00:00	Findings:	.13 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	06/05/2001 00:00:00	Findings:	.21 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09/13/2001 00:00:00	Findings:	3.1 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09/13/2001 00:00:00	Findings:	1.73 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/06/2001 00:00:00	Findings:	1.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/06/2001 00:00:00	Findings:	2 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	03/13/2003 00:00:00	Findings:	259 UG/L
Chemical:	BORON		
Sample Collected:	05/06/2004 00:00:00	Findings:	104 UG/L
Chemical:	BORON		
Sample Collected:	06/03/2004 00:00:00	Findings:	890 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	06/03/2004 00:00:00	Findings:	69 MG/L
Chemical:	CHLORIDE		
Sample Collected:	06/03/2004 00:00:00	Findings:	306 UG/L
Chemical:	IRON		
Sample Collected:	06/03/2004 00:00:00	Findings:	257 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/24/2005 00:00:00	Findings:	488 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

Sample Collected: 05/24/2005 00:00:00 Findings: 2.2 NTU
Chemical: TURBIDITY, LABORATORY

8
SE **FED USGS** **USGS3222717**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	374553121155301
Site name:	002S006E13C001M		
Latitude:	374553		
Longitude:	1211553	Dec lat:	37.76465029
Dec lon:	-121.26577521	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SENENWS13T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	21.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19720413
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:	280	Hole depth:	291
Source of depth data:	Not Reported		
Project number:	8479423710		
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

9
East **CA WELLS** **CADW00000038253**
1/2 - 1 Mile
Higher

Longn:	-121.2603		
Latn:	37.7756		
Stwellno:	02S06E12L001M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	39		
Gwcode:	502201	County:	San Joaquin
State:	CA	Gw name:	San Joaquin Valley (Eastern San Joaquin
District:	San Joaquin District		
Descriptio:	Undetermined		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

WSW
1/2 - 1 Mile | **OIL_GAS** | **CA10177916**

Apinumber:	07720332	Operator:	Hunnicutt & Camp Drilling Co.
Lease:	Maehl Unit 1	Well no:	1
Field:	Not Reported	Cagaso m3 area:	Not Reported
Map:	606	Status cod:	006
Source:	hud		
Latitude:	37.768226		
Longitude:	-121.289694		
Td:	9000	Sec:	10
Twn:	02S	Rge:	06E
Bm:	MD	X coord:	0
Y coord:	0	Zone:	Not Reported
Spuddate:	Not Reported	Abanddate:	Not Reported
Comments:	Not Reported	District:	6

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for SAN JOAQUIN County: 3

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 SAN JOAQUIN COUNTY, CA

Number of sites tested: 20

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.530 pCi/L	90%	10%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.050 pCi/L	100%	0%	0%

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.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) 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^{R} 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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

STREET AND ADDRESS INFORMATION

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The EDR Aerial Photo Decade Package

Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 1939860.5

May 29, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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Date EDR Searched Historical Sources:

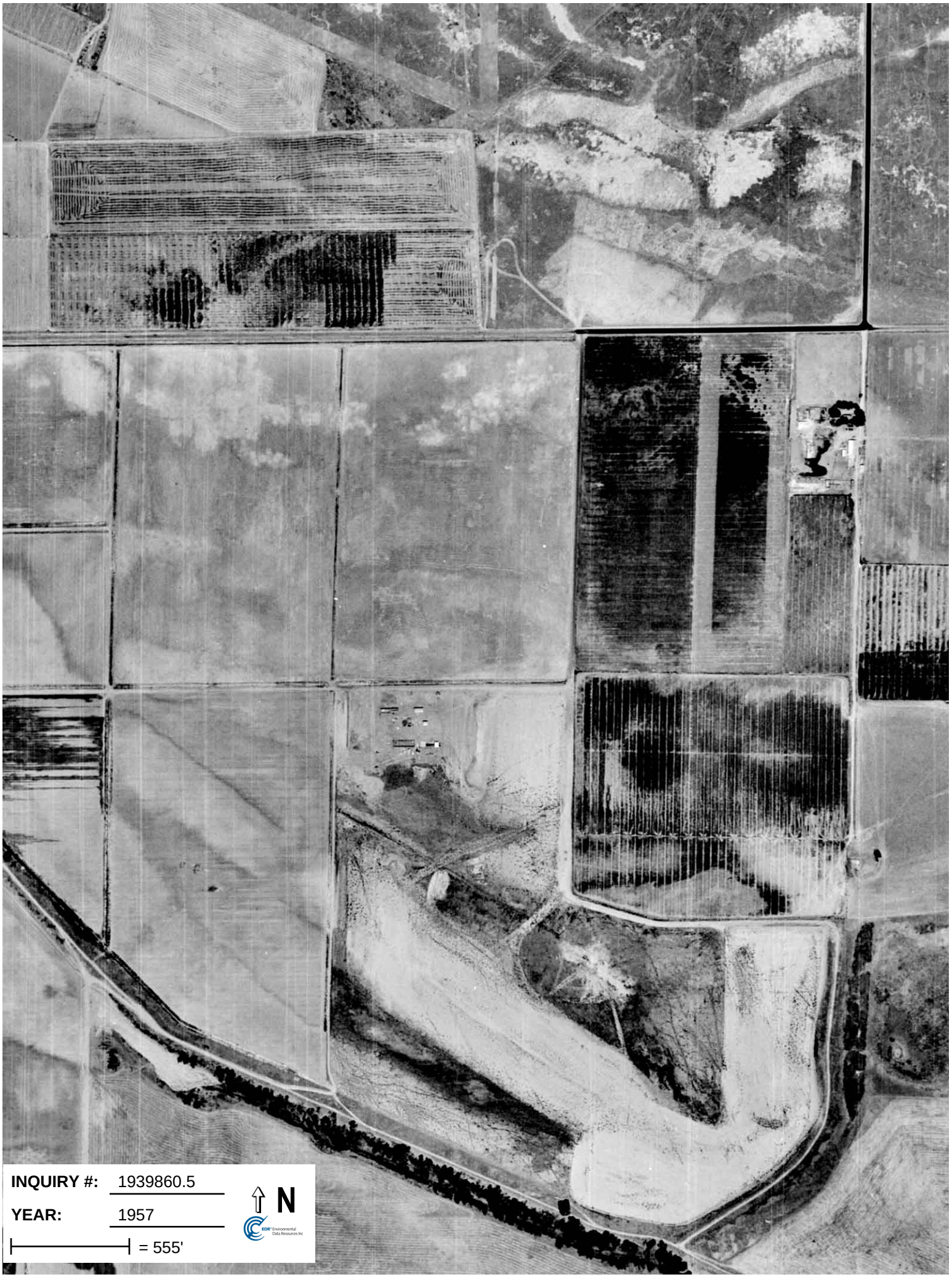
Aerial Photography May 29, 2007

Target Property:

2368 East Woodward Avenue

Manteca, CA 95337

Year	***Scale***	***Details***	***Source***
1957	Aerial Photograph. Scale: 1"=555'	Flight Year: 1957	Cartwright
1963	Aerial Photograph. Scale: 1"=555'	Flight Year: 1963	Mark Hurd
1982	Aerial Photograph. Scale: 1"=690'	Flight Year: 1982	WSA
1993	Aerial Photograph. Scale: 1"=666'	Flight Year: 1993	USGS
1998	Aerial Photograph. Scale: 1"=666'	Flight Year: 1998	USGS


INQUIRY #: 1939860.5
YEAR: 1957
= 555'
N


INQUIRY #: 1939860.5
YEAR: 1963
= 555'
N
EDR Environmental Data Resources Inc


INQUIRY #: 1939860.5
YEAR: 1982
= 690'
N


INQUIRY #: 1939860.5
YEAR: 1993
= 666'
N


INQUIRY #: 1939860.5
YEAR: 1998
= 666'
N
EDR Environmental Data Resources Inc

EDR Historical Topographic Map Report

Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 1939860.4

May 29, 2007

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EDR Historical Topographic Map Report

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Please contact EDR at 1-800-352-0050
with any questions or comments.

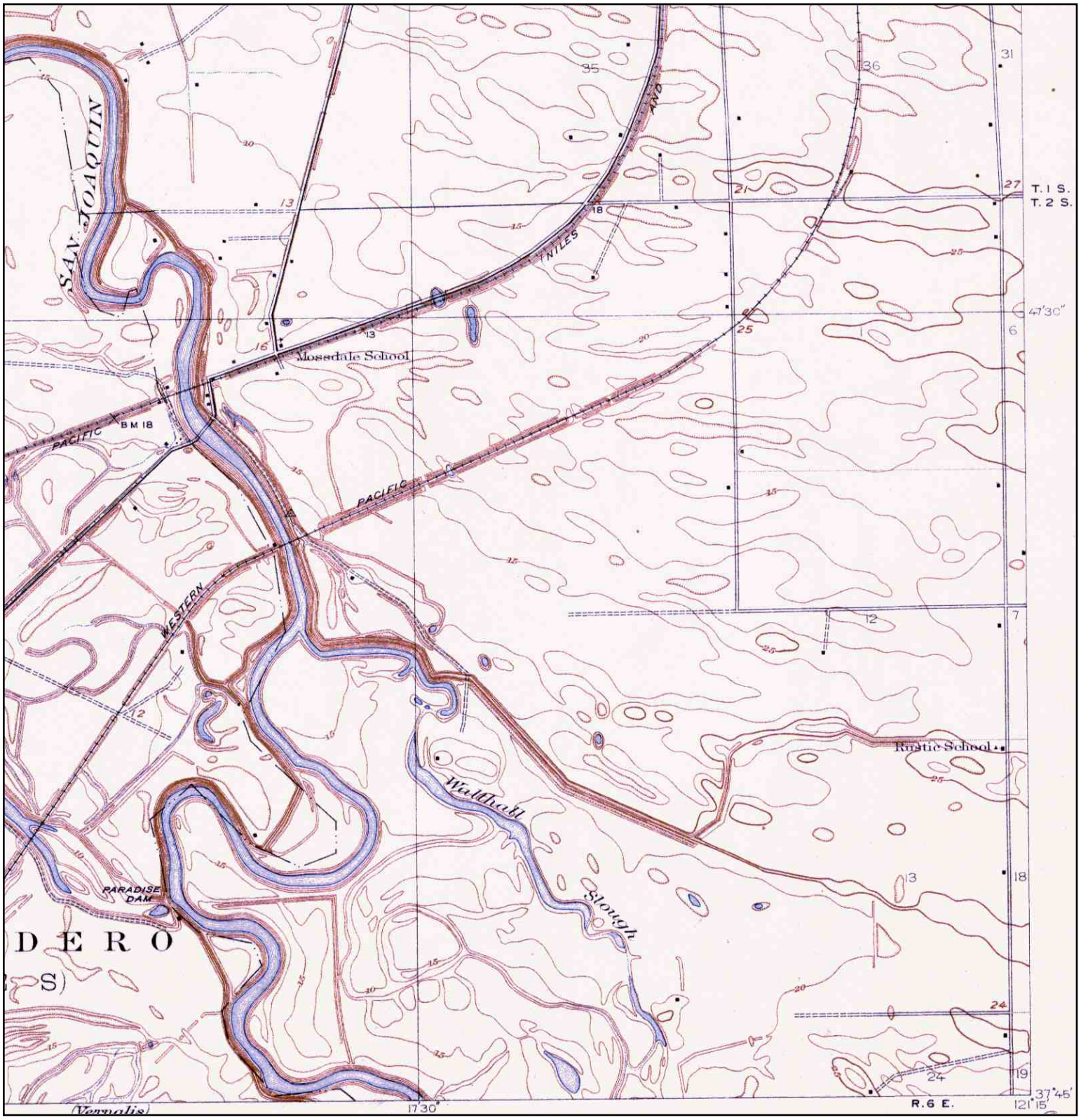
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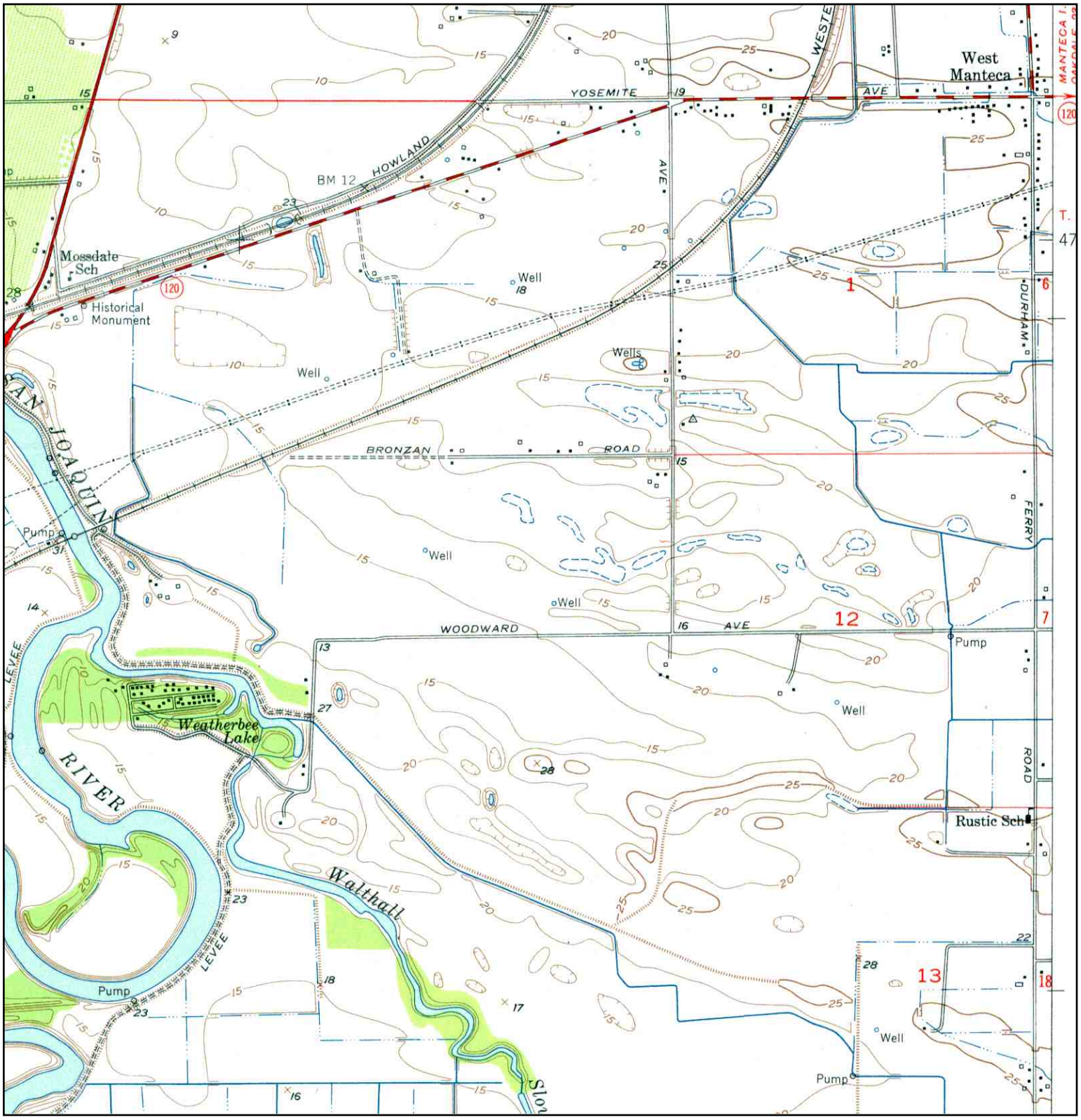
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Historical Topographic Map



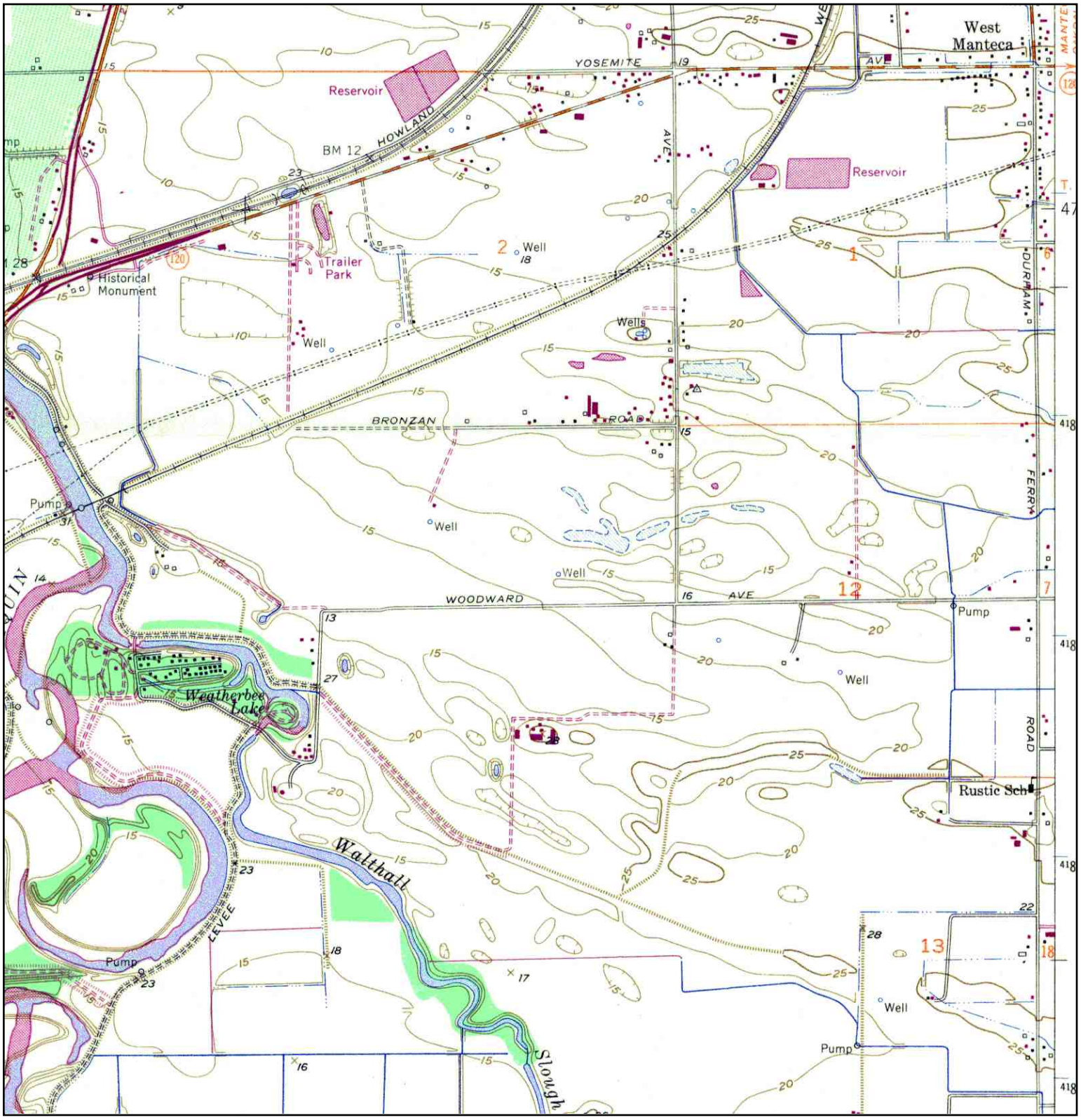
N	TARGET QUAD NAME: LATHROP MAP YEAR: 1915 SERIES: 7.5 SCALE: 1:31680	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

Historical Topographic Map



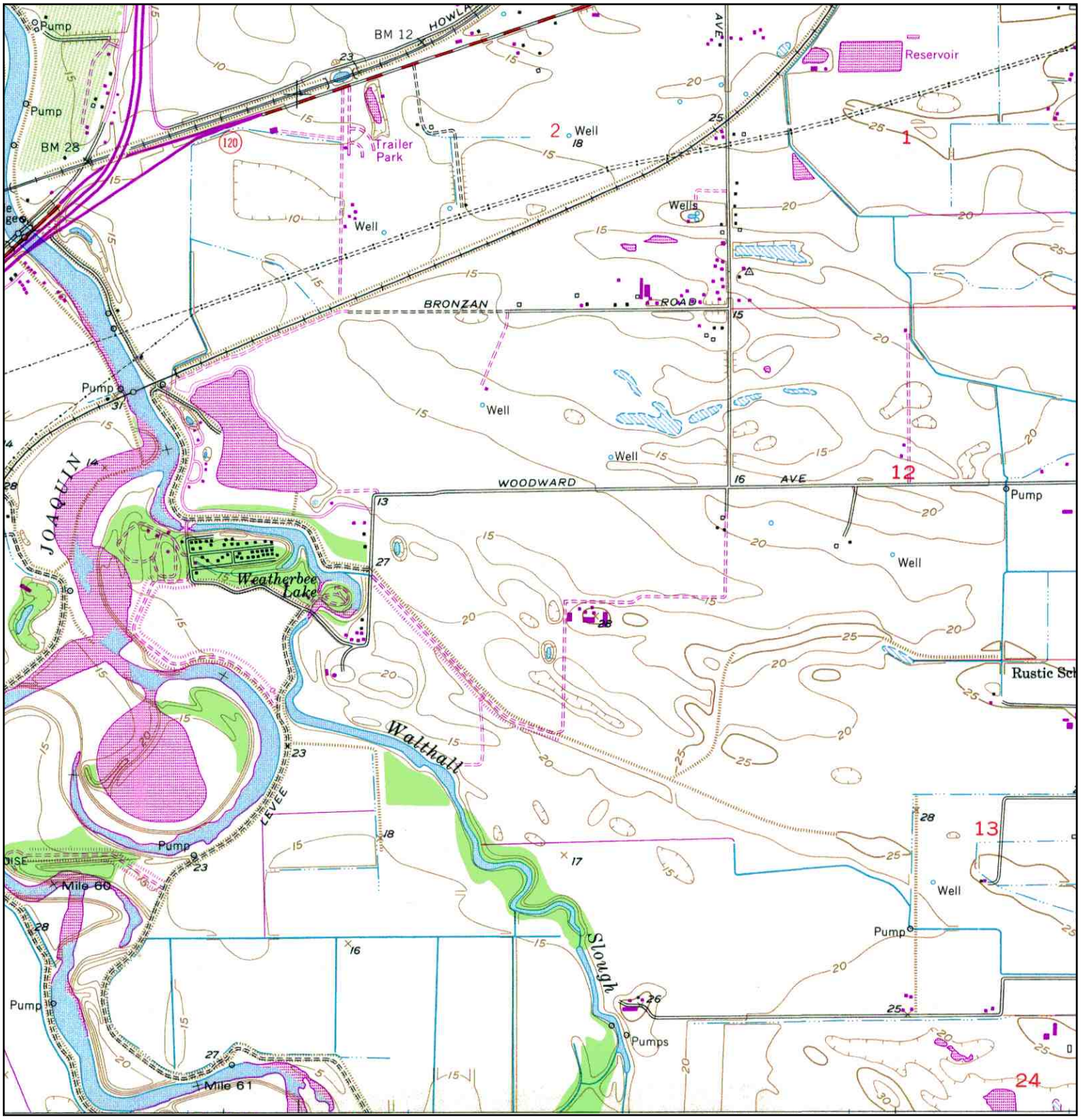
N	TARGET QUAD NAME: LATHROP MAP YEAR: 1952 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

Historical Topographic Map



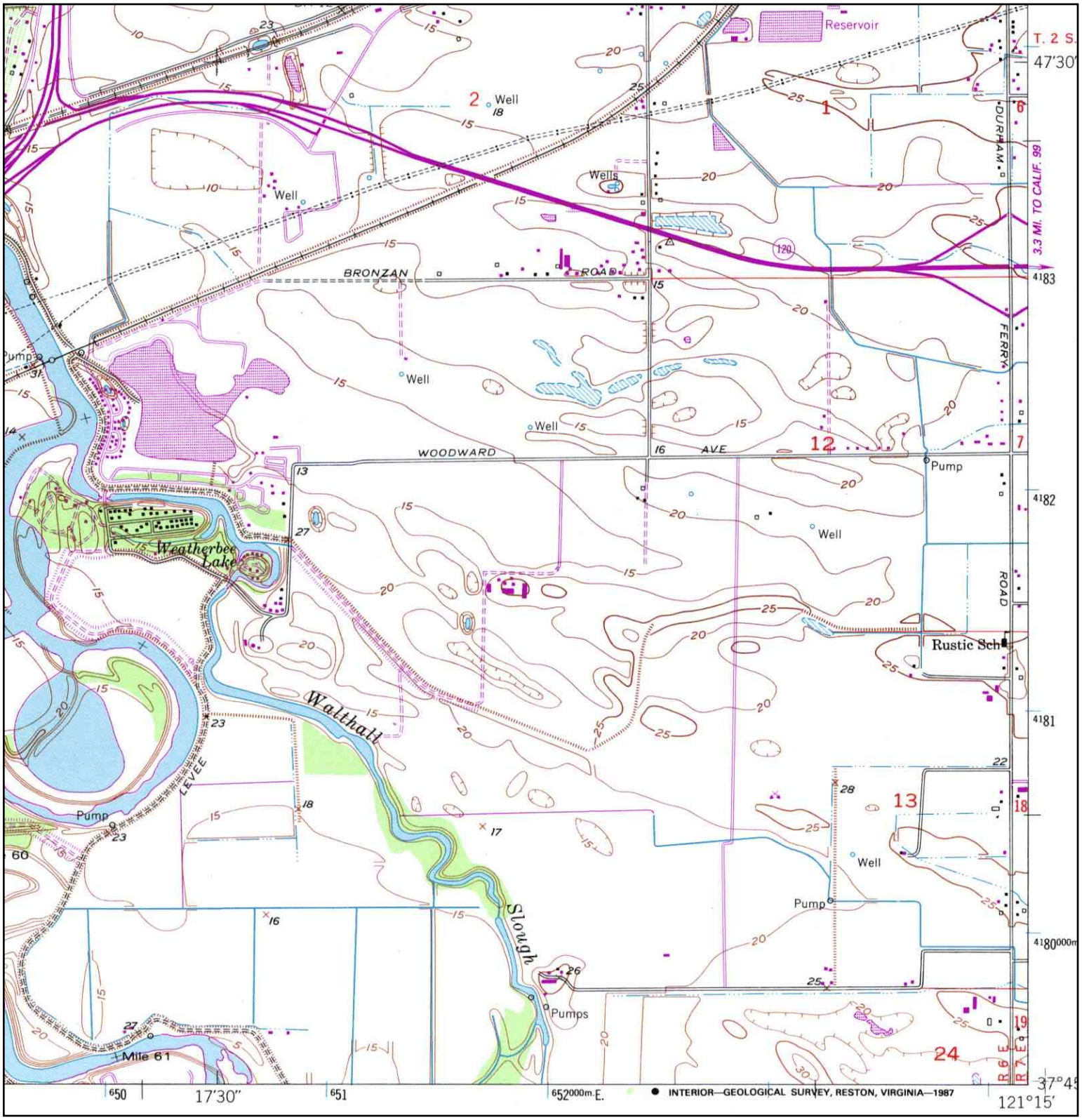
N	TARGET QUAD NAME: LATHROP MAP YEAR: 1968 PHOTOREVISED FROM:1952 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

Historical Topographic Map



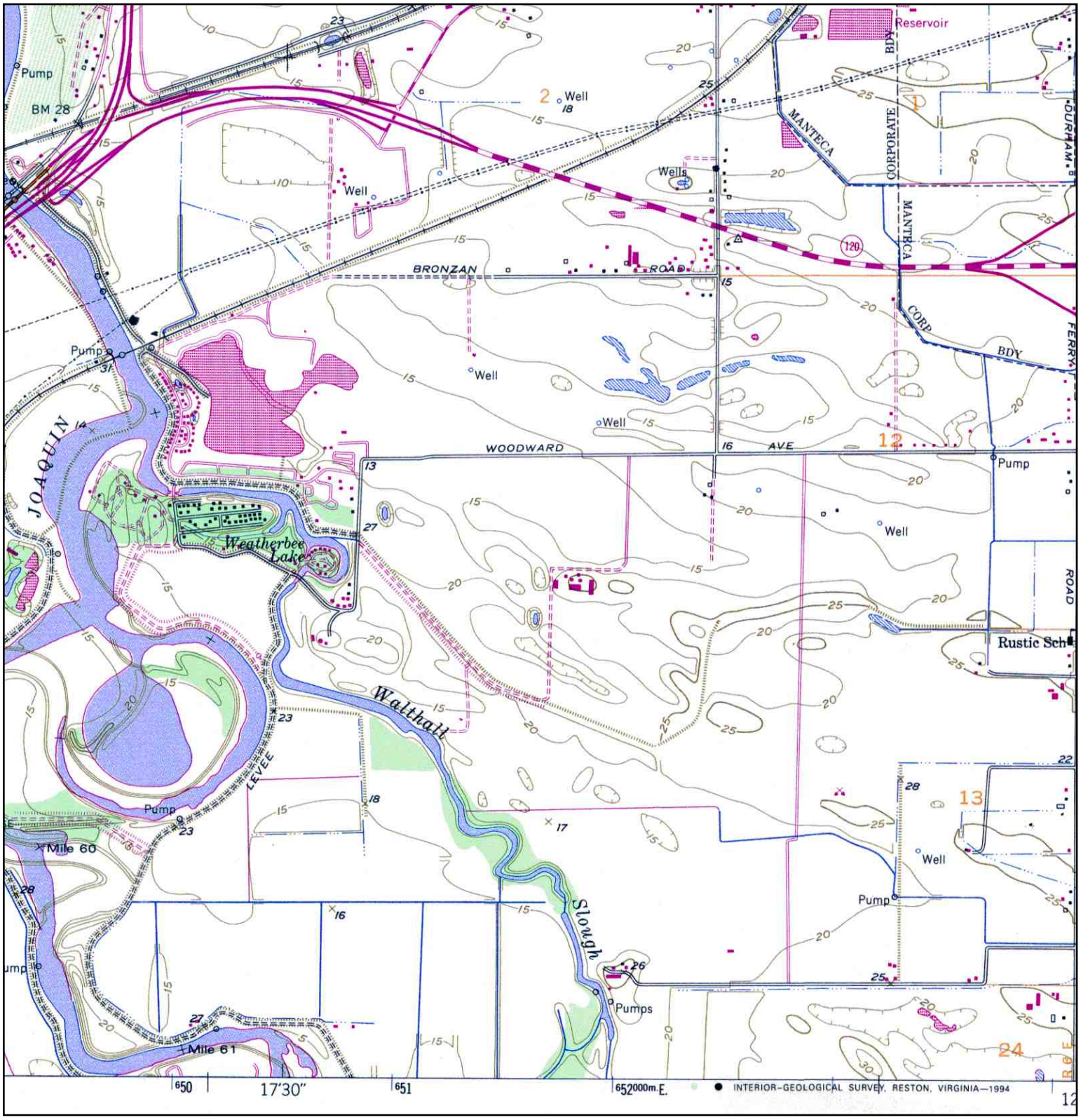
N			
	TARGET QUAD NAME: LATHROP MAP YEAR: 1976 PHOTOREVISED FROM:1952 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

Historical Topographic Map



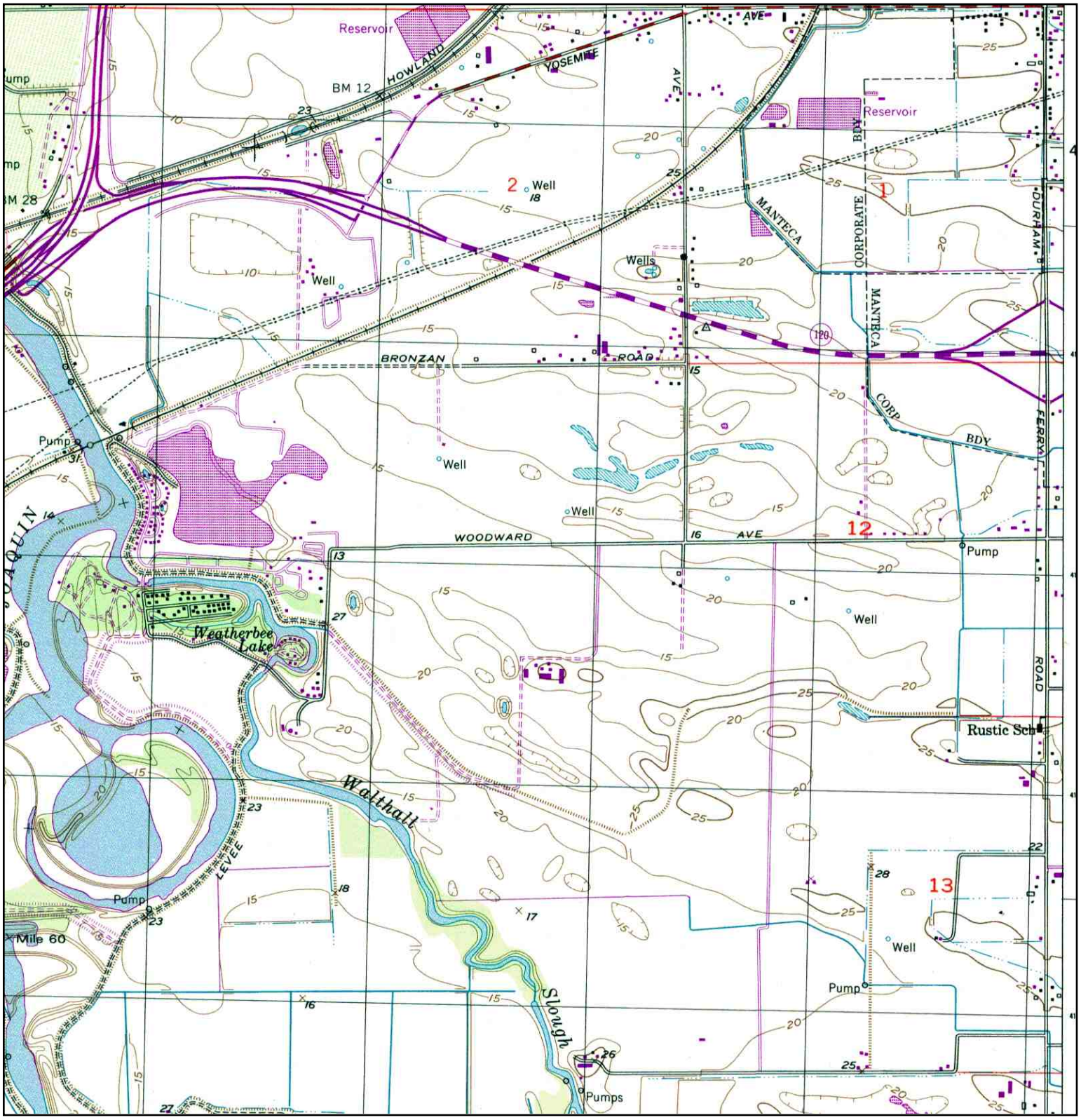
N	TARGET QUAD NAME: LATHROP MAP YEAR: 1987 PHOTOREVISED FROM:1952 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

Historical Topographic Map



N	TARGET QUAD NAME: LATHROP MAP YEAR: 1994 REVISED FROM:1952 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

Historical Topographic Map



N	TARGET QUAD NAME: LATHROP MAP YEAR: 1996 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Trails of Manteca ADDRESS: 2368 East Woodward Avenue Manteca, CA 95337 LAT/LONG: 37.773 / 121.2784	CLIENT: Terrasearch Inc. CONTACT: Rob Campbell INQUIRY#: 1939860.4 RESEARCH DATE: 05/29/2007

The EDR Environmental Lien Search Report

TRAILS OF MANTECA
2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

Monday, June 11, 2007

Project Number: L07-04293

The Standard In Environmental Risk Management Information

440 Wheelers Farm Road
Milford, Connecticut 06460

Nationwide Customer Service

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

ENVIRONMENTAL LIEN REPORT

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied property information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' office, registries of deed, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved and description); and
- provide a copy of the deed or cite documents reviewed;

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with any questions or comments

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ENVIRONMENTAL LIEN REPORT

The EDR Environmental Lien Search Report is intended to assist in the search for environmental liens filed in land title records.

TARGET PROPERTY INFORMATION

ADDRESS

Trails of Manteca
2368 East Woodward Avenue
Manteca, California

RESEARCH SOURCE

Source: San Joaquin County Assessor
San Joaquin County Recorder

DEED INFORMATION

Type of Instrument: Memorandum of Agreement

Title is vested in: Weatherbee Properties, LLC, a California limited liability company

Title received from: Baird Lands, Inc., a California Corporation

Deed Dated: 12/07/2006
Deed Recorded: 12/13/2006
Instrument: 2006-259652

Comments: Seller is the legal and beneficial owner of the subject property. "Seller and Buyer have entered into an unrecorded Real Property Purchase and Sale Agreement dated 12-07-2003, pursuant to which Seller has agreed to sell to Buyer and Buyer has agreed to purchase the Property..." No fulfillment deed was found of record.

LEGAL DESCRIPTION

102.32 acres out of the North Half of Section 14, Township 2 South, Range 6 East of the Mt Diablo Principal Meridian, San Joaquin County, State of California

Assessor's Parcel Number(s): 241-240-02

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AULs: Found ☐ Not Found ☒

67

Accommodation
First American Title
241869

MEMORANDUM OF AGREEMENT

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

Eugene H. Miller, Esq.
Miller, Starr & Regalia LLP
1331 N. California Blvd., 5th Floor
Walnut Creek, CA 94596

DOC # 2006-259652
12/13/2006 07:49A Fee:22.00
Page 1 of 5
Recorded in Official Records
County of San Joaquin
GARY W. FREEMAN
Assessor-Recorder-County Clerk
Paid by FIRST AMER TITLE CO

SPACE ABOVE THIS LINE FOR RECORDER'S USE ONLY

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement ("Memorandum") is made as of ~~November~~ December 7, 2006, by and between BAIRD LANDS, INC., a California corporation ("Seller"), and WEATHERBEE PROPERTIES, LLC, a California limited liability company ("Buyer").

Recitals

A. Seller is the legal and beneficial owner of approximately 480 acres of real property identified as Assessor's Parcel Numbers 241-240-02, 241-240-03, 241-040-04, 241-040-05 and 241-260-05, located in San Joaquin County, California, in the City of Manteca, as more particularly described in attached Exhibit A ("Land").

B. Seller may also own certain tangible and intangible personal property relating to the Land (collectively, the "Intangible Property"). The Land and Intangible Property and such other tangible and intangible property acquired by Seller in connection with the Land are referred to collectively as the "Property."

C. Seller and Buyer have entered into an unrecorded Real Property Purchase and Sale Agreement dated ~~November~~ December 7, 2006 ("Agreement"), pursuant to which Seller has agreed to sell to Buyer and Buyer has agreed to purchase the Property upon the terms and conditions set forth in the Agreement.

D. Seller and Buyer desire to execute this Memorandum and are recording it in the Official Records of San Joaquin County so that third parties shall have notice of the rights and obligations of Buyer and Seller under the Agreement.

NOW, THEREFORE, in consideration of the Agreement and other good and valuable consideration, receipt of which is acknowledged, Seller and Buyer agree as follows:

1. Buyer shall purchase from Seller and Seller shall sell to Buyer the Property, upon the terms and conditions set forth in the Agreement.

2. The sole purpose of this Memorandum is to give notice of the Agreement and all of its terms, covenants and conditions to the same extent as if the Agreement were fully set forth in this Memorandum. The terms of the Agreement, not the terms of the Memorandum, are controlling. Any inconsistency shall be resolved in favor of the unrecorded Agreement.

IN WITNESS WHEREOF, the parties have executed this Memorandum as of the date first above written.

SELLER:

BAIRD LANDS, INC.,
a California corporation

By: Diane Wurzel
Name: DIANE WURZEL
Title: PRESIDENT

BUYER:

WEATHERBEE PROPERTIES, LLC,
a California Limited Liability Company

By:
Name: GAY UTAL
Its: ~~Member~~ PRESIDENT

STATE OF California

COUNTY OF Contra Costa

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 21st DAY OF November, 2006

BY Diane Wurzel

NOTARY PUBLIC

JEFFERY CURTIS
COMM. #1666016
Notary Public · California
Contra Costa County
My Comm. Expires May 12, 2010

EDR NEPACheck®

Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 1939860.8s

May 29, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
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EDR NEPACheck® DESCRIPTION

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects and actions, analyze potential environmental effects of proposed actions and their alternatives for public understanding and scrutiny, avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

The EDR NEPACheck provides information which may be used, in conjunction with additional research, to determine whether a proposed site or action will have significant environmental effect.

The report provides maps and data for the following items (where available). Search results are provided in the Map Findings Summary on page 2 of this report.

Section	Regulation
Natural Areas Map	
• Federal Lands Data:	
- Officially designated wilderness areas	47 CFR 1.1307(1)
- Officially designated wildlife preserves, sanctuaries and refuges	47 CFR 1.1307(2)
- Wild and scenic rivers	40 CFR 6.302(e)
- Fish and Wildlife	40 CFR 6.302
• Threatened or Endangered Species, Fish and Wildlife, Critical Habitat Data (where available)	47 CFR 1.1307(3); 40 CFR 6.302
Historic Sites Map	
• National Register of Historic Places	47 CFR 1.1307(4); 40 CFR 6.302
• State Historic Places (where available)	
• Indian Reservations	
Flood Plain Map	
• National Flood Plain Data (where available)	47 CFR 1.1307(6); 40 CFR 6.302
Wetlands Map	
• National Wetlands Inventory Data (where available)	47 CFR 1.1307(7); 40 CFR 6.302
FCC & FAA Map	
• FCC antenna/tower sites, AM Radio Towers, FAA Markings and Obstructions, AM Radio Interference Zones, Airports, Topographic gradient	47 CFR 1.1307(8)
Key Contacts and Government Records Searched	

MAP FINDINGS SUMMARY

The databases searched in this report are listed below. Database descriptions and other agency contact information is contained in the Key Contacts and Government Records Searched section on page 22 of this report.

TARGET PROPERTY ADDRESS

TRAILS OF MANTECA
2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

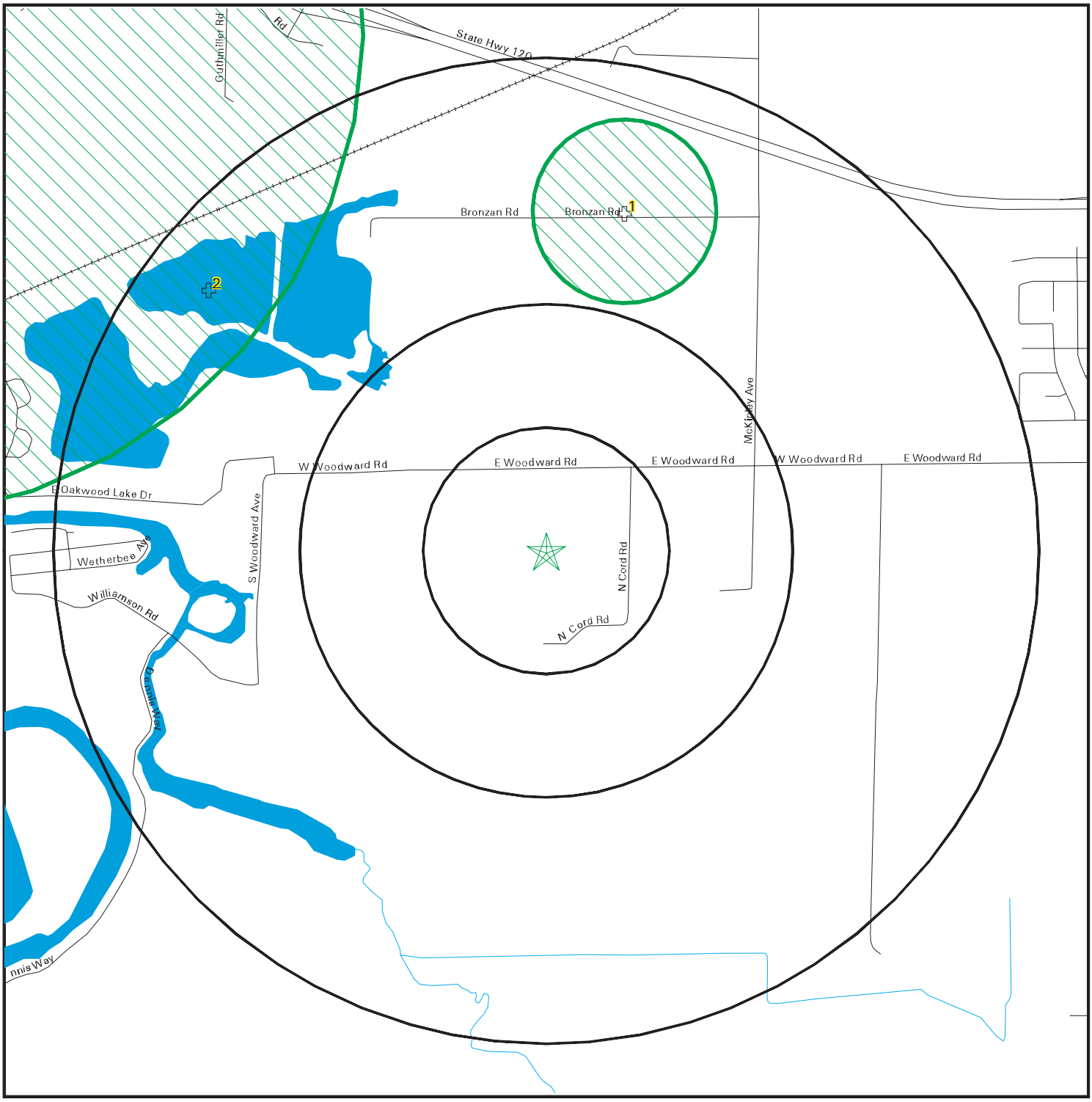
Inquiry #: 1939860.8s
Date: 5/29/7

TARGET PROPERTY COORDINATES

Latitude (North):	37.772999 - 37° 46' 22.8''
Longitude (West):	121.278397 - 121° 16' 42.2''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651626.1
UTM Y (Meters):	4181819.8

Applicable Regulation from 47 CFR/FCC Checklist	Database	Search Distance (Miles)	Within Search	Within 1/8 Mile
NATURAL AREAS MAP				
1.1307a (1) Officially Designated Wilderness Area	US Federal Lands	1.00	NO	NO
1.1307a (2) Officially Designated Wildlife Preserve	US Federal Lands	1.00	NO	NO
1.1307a (3) Threatened or Endangered Species or Critical Habitat	CA Natural Diversity Database	1.00	YES	NO
1.1307a (3) Threatened or Endangered Species or Critical Habitat	County Endangered Species	County	YES	N/A
HISTORIC SITES MAP				
1.1307a (4) Listed or eligible for National Register	National Register Hist. Places	1.00	NO	NO
1.1307a (4) Listed or eligible for National Register	CA Historic Landmarks	1.00	NO	NO
	Indian Reservation	1.00	NO	NO
FLOODPLAIN MAP				
1.1307 (6) Located in a Flood Plain	FLOODPLAIN	1.00	YES	YES
WETLANDS MAP				
1.1307 (7) Change in surface features (wetland fill)	NWI	1.00	YES	NO
FCC & FAA SITES MAP				
	FCC Cellular	1.00	NO	NO
	FCC Antenna	1.00	NO	NO
	FCC Tower	1.00	YES	NO
	FCC AM Tower	1.00	NO	NO
	FAA DOF	1.00	NO	NO
	Airports	1.00	NO	NO
	Power Lines	1.00	YES	YES

Natural Areas Map



- Target Property
- Roads
- County Boundary
- Waterways
- Water
- Locations
- Federal Areas
- Federal Linear Features
- State Areas
- State Linear Features

SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
LAT/LONG:	37.7730 / 121.2784	INQUIRY #:	1939860.8s
		DATE:	May 29, 2007

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NATURAL AREAS MAP FINDINGS

Endangered Species Listed for: SAN JOAQUIN County, CA.

Source: EPA Endangered Species Protection Program Database

BIRD:	EAGLE, BALD
BIRD:	PLOVER, MOUNTAIN
CRUSTACEAN:	SHRIMP, VERNAL POOL TADPOLE
CRUSTACEAN:	SHRIMP, VERNAL POOL FAIRY
FISH:	SPLITTAIL, SACRAMENTO
FISH:	SMELT, DELTA
FISH:	STEELHEAD, CALIFORNIA CENTRAL VALLEY POP
INSECT:	BEETLE, VALLEY ELDERBERRY LONGHORN
MAMMAL:	FOX, SAN JOAQUIN KIT
PLANT:	BIRD'S-BEAK, PALMATE-BRACTED
PLANT:	FIDDLENECK, LARGE-FLOWERED
REPTILE:	SNAKE, GIANT GARTER

Map ID Direction Distance Distance (ft.)			EDR ID Database
1 NNE 1/2-1 mi 2746	EO ID:	28418	CAS0019256 CA Natural Diversity Database
	Geo ID:	11647	
	Element code:	AAAAA01147	
	Occurrence ID:	37	
	Last Visited:	19960411	
	Last Observed:	19960411	
	Presence:	Presumed Extant	
	Trend:	Unknown	
	Occrank:	Fair	
	Sensitive?:	N	
	Main Info:	TATARIAN, T. 1996 (OBS)	
	Occtype:	Natural/Native occurrence	
	Directions:	SOUTH SIDE OF HIGHWAY 120, NEAR THE JUNCTION OF MCKINLEY ROAD, SOUTH OF LATHROP	
	Ownership:	PVT	
	Threat Comments:	Not Reported	
	Ecological Comments:	HABITAT CONSISTS OF A SEASONAL POND CREATED BY THE BERM OF HIGHWAY 20. SITE IS SURROUNDED BY RESIDENTIAL DEVELOPMENT.	
	Distribution Comments:	1974 OBSERVATION WAS ON THE MATLEY PROPERTY 2785 BRONZAN ROAD, W MCKINLEY.	
	General Comments:	OBSERVED IN 1974 (S. MCGINNIS, PERSONAL COMMUNICATION). ~50 LARVAE OBSERVED ON 11 APR 1996.	
	Scientific name:	AMBYSTOMA CALIFORNIENSE	
	Common name:	CALIFORNIA TIGER SALAMANDER	
	Global rank:	G2G3	
	State rank:	S2S3	
	Federal Status:	Endangered	
	State Status:	None	
	Special Concern?:	SC	
	CNPS Rarity:	Not Reported	
	Redcode:	Not Reported	
	General habitat:	FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.	
	Micro habitat:	NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING	

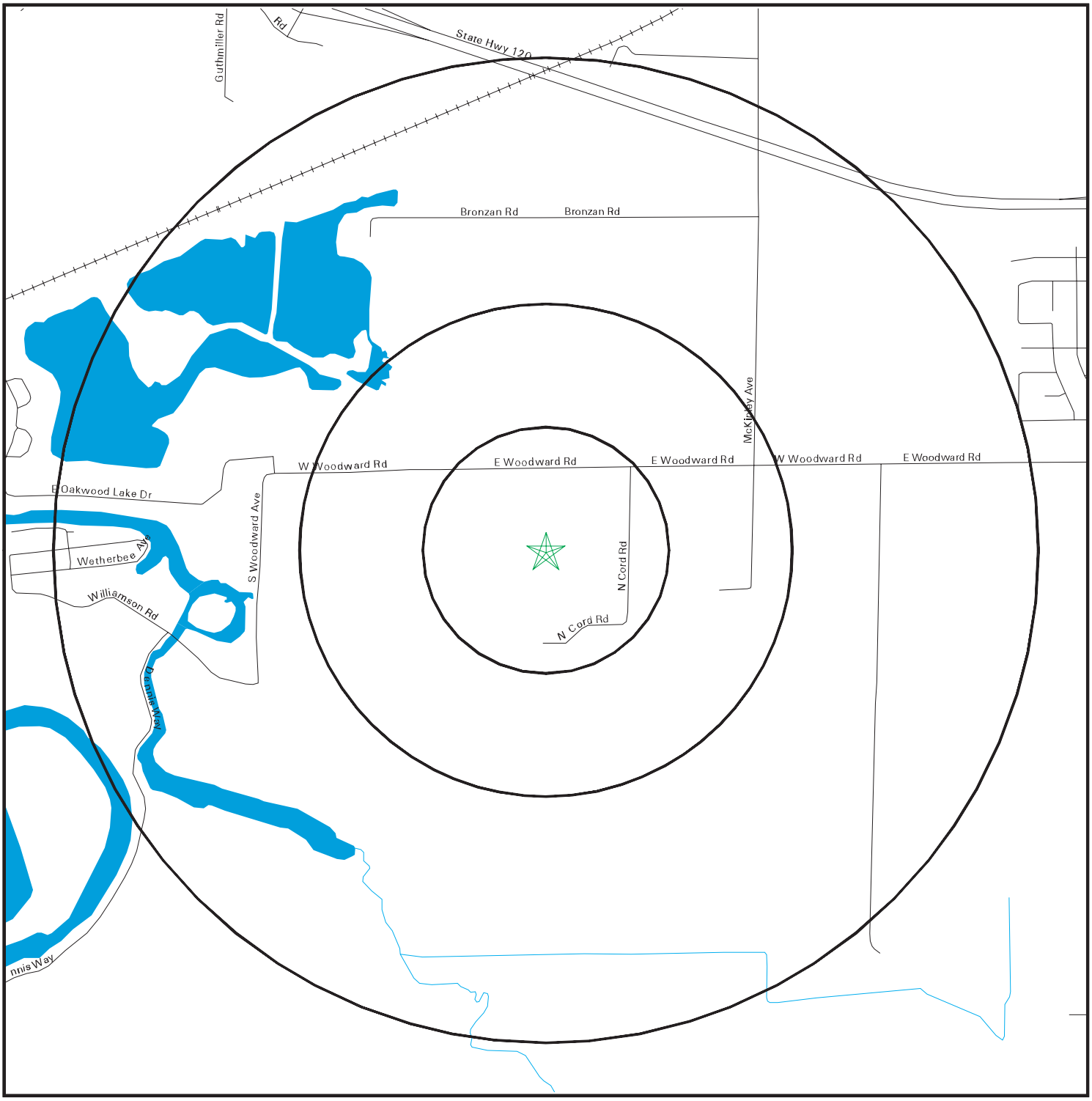
NATURAL AREAS MAP FINDINGS

2
NW
1/2-1 mi
3900

EO ID:	20069
Geo ID:	11611
Element code:	PDAPI0Z0S0
Occurrence ID:	3
Last Visited:	19840828
Last Observed:	XXXXXXXX
Presence:	Possibly Extirpated
Trend:	Unknown
Occrank:	None
Sensitive?:	N
Main Info:	ALLEN, P. 1974 (PERS)
Occtype:	Natural/Native occurrence
Directions:	NEAR HISTORICAL MONUMENT ON HWY 120, ABOUT 3 MI S OF LATHROP.
Ownership:	PVT
Threat Comments:	AREA NOW FLOODS YEARLY AND WALNUT ORCHARD EXISTS TO EDGE OF RIVER.
Ecological Comments:	Not Reported
Distribution Comments:	Not Reported
General Comments:	HABITAT GONE IN 1984.
Scientific name:	ERYNGIUM RACEMOSUM
Common name:	DELTA BUTTON-CELERY
Global rank:	G2Q
State rank:	S2.1
Federal Status:	None
State Status:	Endangered
Special Concern?:	Not Reported
CNPS Rarity:	Plants rare, threatened, or endangered in CA and elsewhere
Redcode:	Distributed in a limited number of occurrences, occasionally more if each occurrence is small/Endangered throughout its range/Endemic to California
General habitat:	RIPARIAN SCRUB. EXTANT IN CAL AND MER COUNTIES; HISTORICAL FROM SJQ AND STA COUNTIES.
Micro habitat:	SEASONALLY INUNDATED FLOODPLAIN ON CLAY. 3-75M.

CAS0009511
CA Natural Diversity Database

Historic Sites Map



SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
		INQUIRY #:	1939860.8s
LAT/LONG:	37.7730 / 121.2784	DATE:	May 29, 2007

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HISTORIC SITES MAP FINDINGS

Map ID Direction Distance Distance (ft.)	EDR ID Database

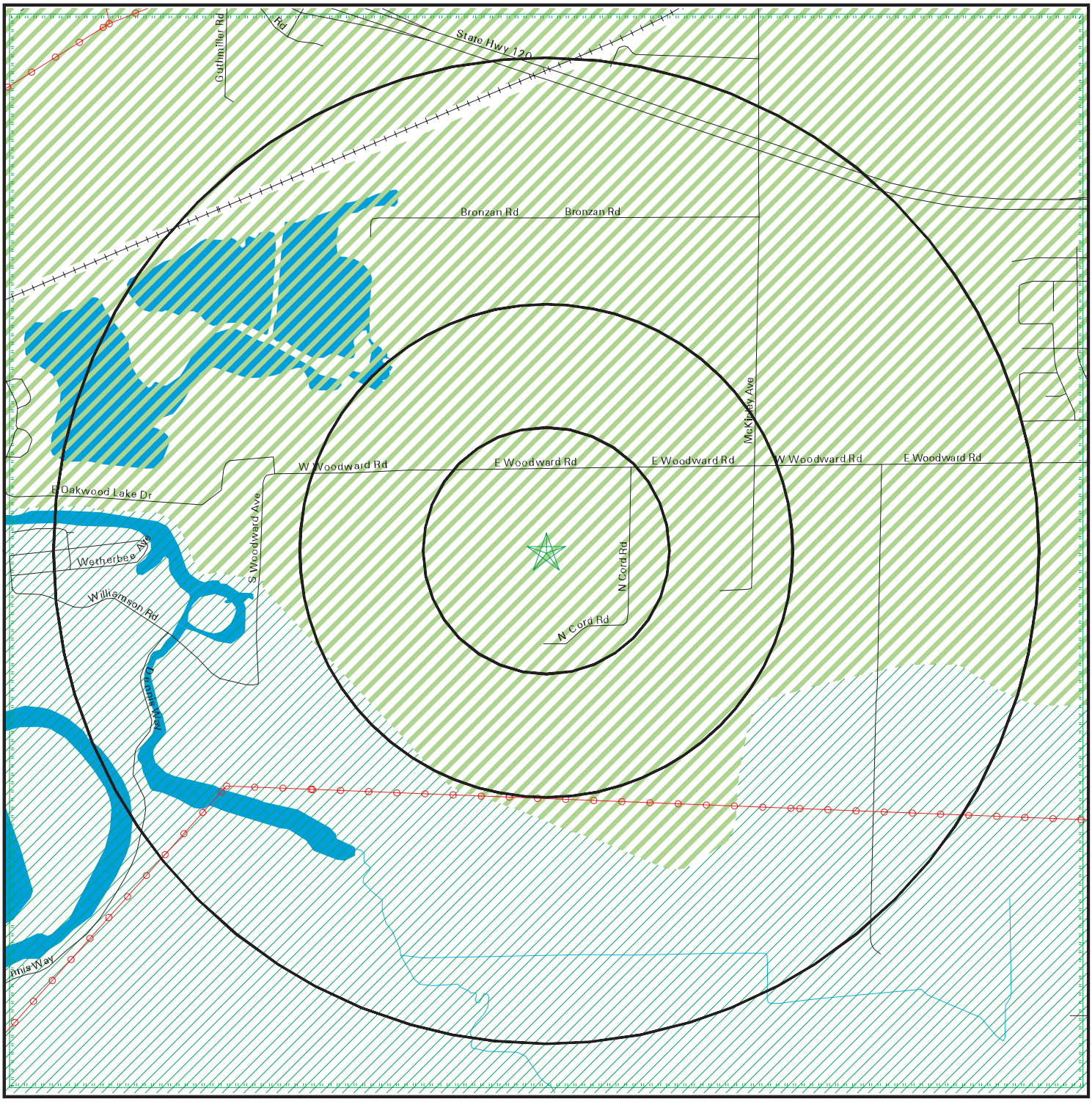
No mapped sites were found in EDR's search of available government records within the search radius around the target property.

UNMAPPABLE HISTORIC SITES

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

		Status **EDR ID** **Database**
Id num:	NO. 995	Unmappable
Nrhp num:	Not Reported	CA10000780
Usgs quad:	Not Reported	CA Historic Landmarks
Name:	TRAIL OF THE JOHN C. FREMONT 1844 EXPEDITION	
Address:	NW corner of junction of Hwy 88 and Calaveras River	
Address2:	Not Reported	
County:	San Joaquin	
Desc1:	Fremont's historic second overland expedition of 1843-44 was the first in which he reached California. He and his companions entered California in the dead of winter, camped across the snowbound Sierr a, spent a month at Sutter's Fort in the Sacramento Valley, and then continued south through the San Joaquin Valley. Fremont's report added to the growing American interest in the Far West and Califor nia, making this 1844 expedition one of the most influential events in American westward expansion. Fremont camped at this site on March 26, 1844.	

Flood Plain Map



- Major Roads
- Contour Lines
- Waterways
- County Boundary
- Power Lines
- Pipe Lines
- Fault Lines
- Water
- 100-year flood zone
- 500-year flood zone
- Electronic FEMA data available
- Electronic FEMA data not available

SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
LAT/LONG:	37.7730 / 121.2784	INQUIRY #:	1939860.8s
		DATE:	May 29, 2007

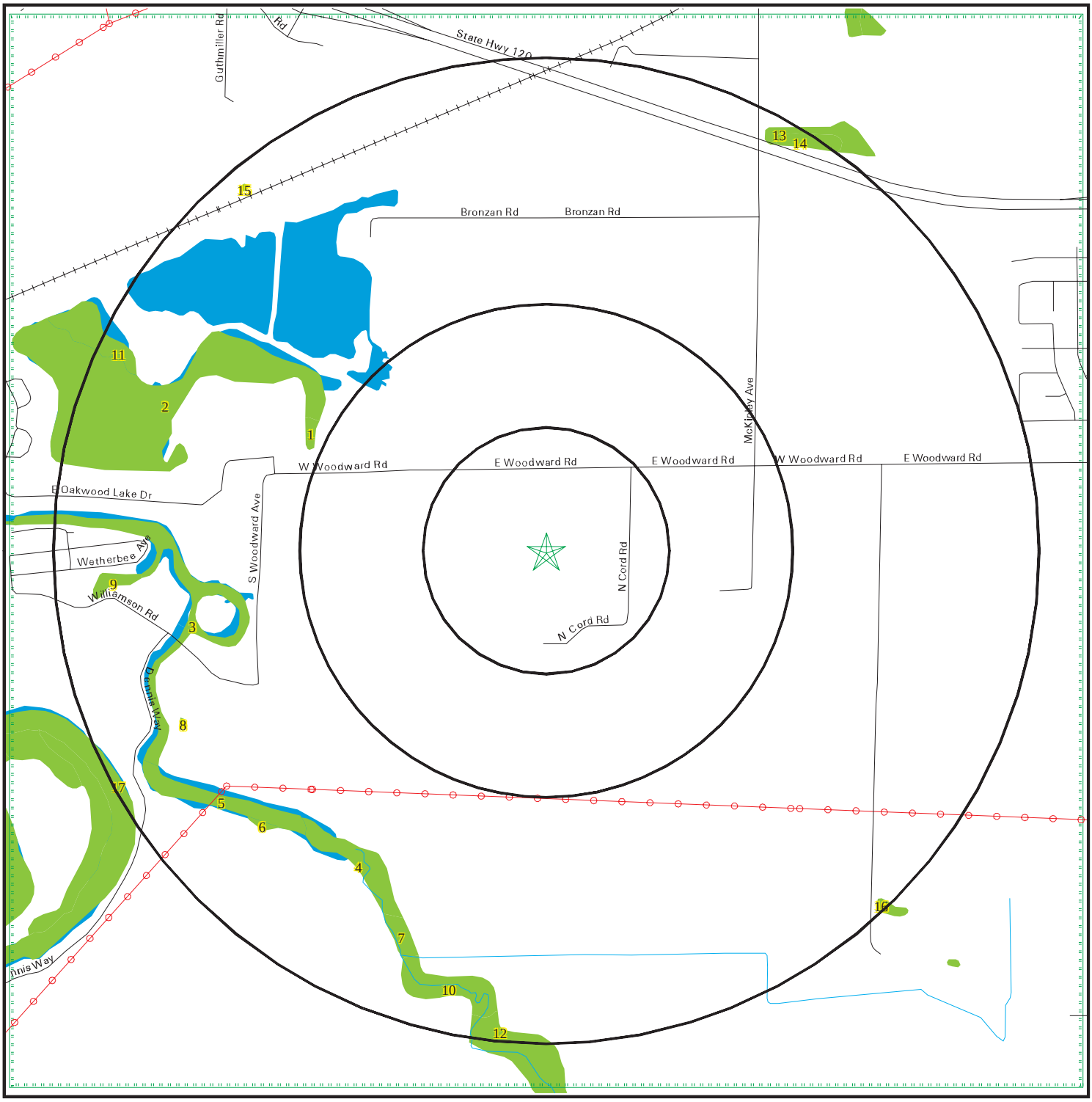
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FLOOD PLAIN MAP FINDINGS

Source: FEMA Q3 Flood Data

County	FEMA flood data electronic coverage
SAN JOAQUIN, CA	YES
Flood Plain panel at target property:	0602990595C
Additional Flood Plain panel(s) in search area:	None Reported

National Wetlands Inventory Map



Major Roads
Contour Lines
Waterways
County Boundary
Power Lines
Pipe Lines
Fault Lines
Water
National Wetland Inventory
Electronic NWI data available
Electronic NWI data not available

SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
		INQUIRY #:	1939860.8s
LAT/LONG:	37.7730 / 121.2784	DATE:	May 29, 2007

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WETLANDS MAP FINDINGS

Source: Fish and Wildlife Service NWI data

NWI hardcopy map at target property: Lathrop
Additional NWI hardcopy map(s) in search area:
Not reported in source data

Map ID Direction Distance Distance (ft.)	Code and Description*	Database
1 WNW 1/2-1 mi 2722	L2USCx [L] Lacustrine, [2] Littoral, [US] Unconsolidated Shore, [C] Seasonally Flooded, [x] Excavated	NWI
2 WNW 1/2-1 mi 2803	L1UBHx [L] Lacustrine, [1] Limnetic, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [x] Excavated	NWI
3 WSW 1/2-1 mi 3257	R2ABH [R] Riverine, [2] Lower Perennial, [AB] Aquatic Bed, [H] Permanently Flooded	NWI
4 SSW 1/2-1 mi 3708	R2ABH [R] Riverine, [2] Lower Perennial, [AB] Aquatic Bed, [H] Permanently Flooded	NWI
5 SW 1/2-1 mi 3870	R2UBH [R] Riverine, [2] Lower Perennial, [UB] Unconsolidated Bottom, [H] Permanently Flooded	NWI
6 SW 1/2-1 mi 4128	PSSC [P] Palustrine, [SS] Scrub-Shrub, [C] Seasonally Flooded	NWI
7 SSW 1/2-1 mi 4219	PEMH [P] Palustrine, [EM] Emergent, [H] Permanently Flooded	NWI
8 WSW 1/2-1 mi 4269	PUSC [P] Palustrine, [US] Unconsolidated Shore, [C] Seasonally Flooded	NWI
9 West 1/2-1 mi 4345	PFOC [P] Palustrine, [FO] Forested, [C] Seasonally Flooded	NWI

*See Wetland Classification System for additional information.

WETLANDS MAP FINDINGS

Map ID Direction Distance Distance (ft.)	Code and Description*	Database
10 SSW 1/2-1 mi 4543	R2UBH [R] Riverine, [2] Lower Perennial, [UB] Unconsolidated Bottom, [H] Permanently Flooded	NWI
11 WNW 1/2-1 mi 4777	PEMA [P] Palustrine, [EM] Emergent, [A] Temporarily Flooded	NWI
12 South 1/2-1 mi 4958	PSSC [P] Palustrine, [SS] Scrub-Shrub, [C] Seasonally Flooded	NWI
13 NNE 1/2-1 mi 4965	PEMC [P] Palustrine, [EM] Emergent, [C] Seasonally Flooded	NWI
14 NNE 1/2-1 mi 5007	PEMF [P] Palustrine, [EM] Emergent, [F] Semipermanently Flooded	NWI
15 NW 1/2-1 mi 5024	PUBF [P] Palustrine, [UB] Unconsolidated Bottom, [F] Semipermanently Flooded	NWI
16 SE 1/2-1 mi 5148	PABF [P] Palustrine, [AB] Aquatic Bed, [F] Semipermanently Flooded	NWI
17 WSW 1/2-1 mi 5176	R2UBH [R] Riverine, [2] Lower Perennial, [UB] Unconsolidated Bottom, [H] Permanently Flooded	NWI

*See Wetland Classification System for additional information.

WETLANDS CLASSIFICATION SYSTEM

National Wetland Inventory Maps are produced by the U.S. Fish and Wildlife Service, a sub-department of the U.S. Department of the Interior. In 1974, the U.S. Fish and Wildlife Service developed a criteria for wetland classification with four long range objectives:

- to describe ecological units that have certain homogeneous natural attributes,
- to arrange these units in a system that will aid decisions about resource management,
- to furnish units for inventory and mapping, and
- to provide uniformity in concepts and terminology throughout the U.S.

High altitude infrared photographs, soil maps, topographic maps and site visits are the methods used to gather data for the productions of these maps. In the infrared photos, wetlands appear as different colors and these wetlands are then classified by type. Using a hierarchical classification, the maps identify wetland and deepwater habitats according to:

- system
- subsystem
- class
- subclass
- modifiers

(as defined by Cowardin, et al. U.S. Fish and Wildlife Service FWS/OBS 79/31. 1979.)

The classification system consists of five systems:

1. marine
2. estuarine
3. riverine
4. lacustrine
5. palustrine

The marine system consists of deep water tidal habitats and adjacent tidal wetlands. The riverine system consists of all wetlands contained within a channel. The lacustrine systems includes all nontidal wetlands related to swamps, bogs & marshes. The estuarine system consists of deepwater tidal habitats and where ocean water is diluted by fresh water. The palustrine system includes nontidal wetlands dominated by trees and shrubs and where salinity is below .5% in tidal areas. All of these systems are divided in subsystems and then further divided into class.

National Wetland Inventory Maps are produced by transferring gathered data on a standard 7.5 minute U.S.G.S. topographic map. Approximately 52 square miles are covered on a National Wetland Inventory map at a scale of 1:24,000. Electronic data is compiled by digitizing these National Wetland Inventory Maps.

SYSTEM **MARINE**

SUBSYSTEM **1 - SUBTIDAL** **2 - INTERTIDAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom	AB-AQUATIC BED	RF-REEF	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm		1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

SYSTEM **E - ESTUARINE**

SUBSYSTEM **1 - SUBTIDAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	

SUBSYSTEM **2 - INTERTIDAL**

CLASS	AB-AQUATIC BED	RF-REEF	SB - STREAMBED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	SS-SCRUB SHRUB	FO-FORESTED
Subclass	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	1 Cobble- Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble- Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen

SYSTEM — **R - RIVERINE**

SUBSYSTEM	**1 - TIDAL**	**2 - LOWER PERENNIAL**	**3 - UPPER PERENNIAL**	**4 - INTERMITTENT**	**5 - UNKNOWN PERENNIAL**
CLASS	RB-ROCK BOTTOM UB-UNCONSOLIDATED BOTTOM *SB-STREAMBED AB-AQUATIC BED RS-ROCKY SHORE US-UNCONSOLIDATED SHORE **EM-EMERGENT OW-OPEN WATER/ Unknown Bottom				
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent

* STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM.
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS.

SYSTEM — **L - LACUSTRINE**

SUBSYSTEM — **1 - LIMNETIC**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	

SUBSYSTEM — **2 - LITTORAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

SUBSYSTEM — **P - PALUSTRINE**

CLASS	RB--ROCK BOTTOM	UB--UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	US--UNCONSOLIDATED SHORE	ML--MOSS-LICHEN	EM--EMERGENT	SS--SCRUB-SHRUB	FO--FORESTED	OW-OPEN WATER/ Unknown
Bottom									
Subclass	1 Bedrock 2 Rubble 3 Mud 4 Organic	1 Cobble-Gravel 2 Sand	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6Deciduous 7 Evergreen	

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME

Non-Tidal

A Temporarily Flooded
B Saturated
C Seasonally Flooded
D Seasonally Flooded/ Well Drained
E Seasonally Flooded/ Saturated
F Semipermanently Flooded
G Intermittently Exposed

Tidal

H Permanently Flooded
J Intermittently Flooded
K Artificially Flooded
W Intermittently Flooded/Temporary
Y Saturated/Semipermanent/ Seasonal
Z Intermittently Exposed/Permanent
U Unknown

CoastalHalinityInlandSalinitypHModifiersfor

K Artificially Flooded
L Subtidal
M Irregularly Exposed
N Regularly Flooded
P Irregularly Flooded

*S Temporary-Tidal
*R Seasonal-Tidal
*T Semipermanent -Tidal
V Permanent -Tidal
U Unknown

*These water regimes are only used in tidally influenced, freshwater systems.

WATER CHEMISTRY

1 Hyperhaline
2 Euhaline
3 Mixohaline (Brackish)
4 Polyhaline
5 Mesohaline
6 Oligohaline
0 Fresh

7 Hypersaline
8 Eusaline
9 Mixosaline
0 Fresh

all Fresh Water

a Acid
t Circumneutral
i Alkaline

SOIL

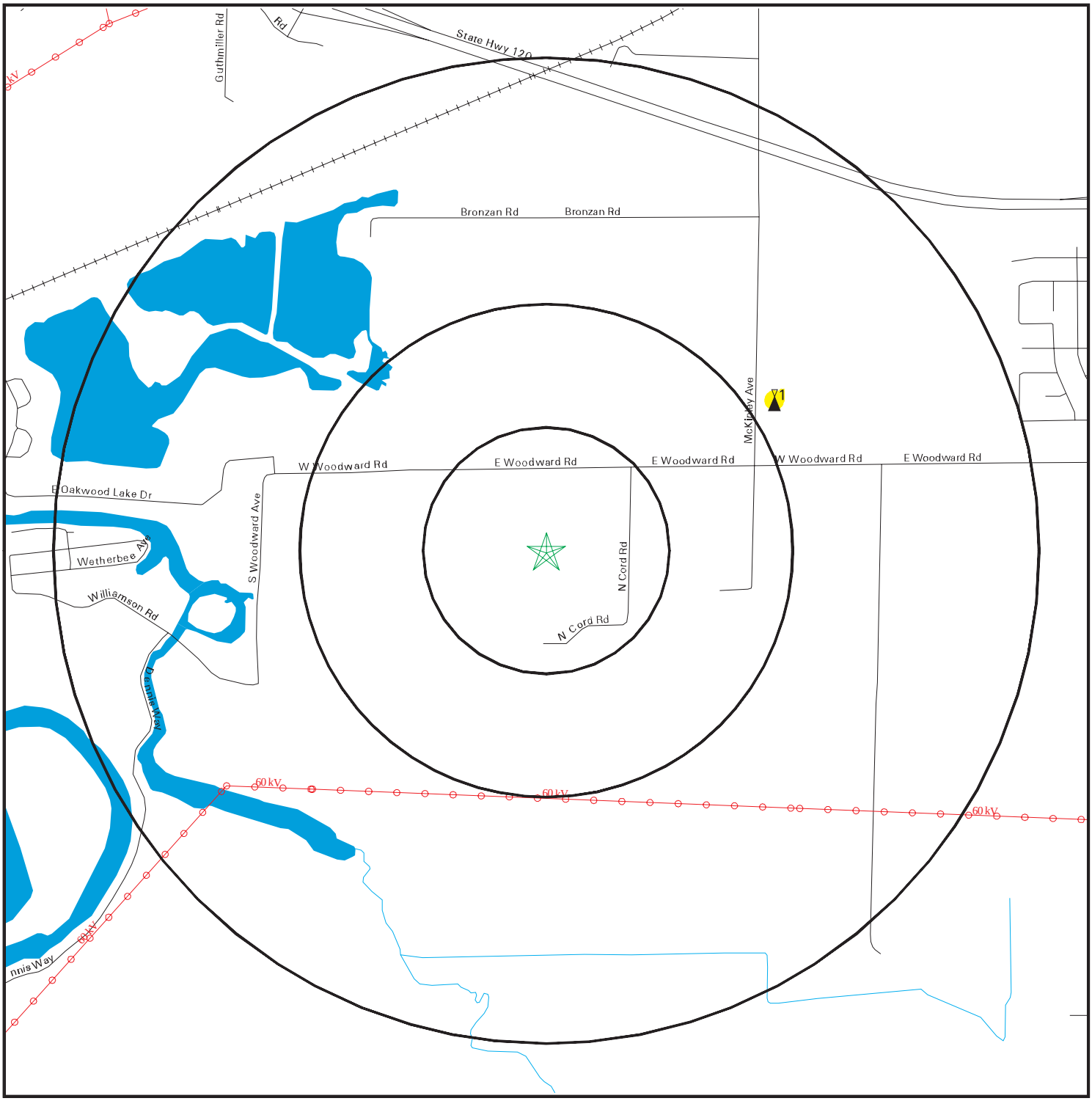
g Organic
n Mineral

SPECIAL MODIFIERS

b Beaver
d Partially Drained/Ditched
f Farmed
h Diked/Impounded
r Artificial Substrate
s Spoil
x Excavated

Source: U.S. Department of the Interior
Fish and Wildlife Service
National Wetlands Inventory

FCC & FAA Sites Map



SITE NAME:	Trails of Manteca	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Rob Campbell
		INQUIRY #:	1939860.8s
LAT/LONG:	37.7730 / 121.2784	DATE:	May 29, 2007

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FCC & FAA SITES MAP FINDINGS
TOWERS

Map ID
Direction
Distance
Distance (ft.)

EDR ID
Database

1
ENE
1/2-1 mi
2927

TOW100000048062
TOWER

Tower ID:	30784		
Tower Owner Name:	, MANTECA, CA		
Latitude:	37 46' 135999"	Latitude (in seconds):	135999
Longitude:	121 16' 8"	Longitude (in seconds):	436568
Transmitter Latitude:	374639	Transmitter Longitude	1211608
Construction Date:		Activation Date:	Aug 28 1975
FAA Date:	Jul 15 1975	FCC Date:	Jul 11 1975
File Number:	BP-14,016	FAA ID:	75-WE-340-OE
Antenna Height:	0.0000	Antenna Height (M):	0.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	364.3000	Elevation FAA:	364.3000
Elevation FAA (M):	111.0000	Elevation (M):	111.0000
Structure Height:	349.3000	Structure Height (M):	106.5000
Structure Height FAA:	349.3000	Structure Height FAA (M):	106.5000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	0.0000	Tower Height (M):	0.0000
Structure Type:	TOW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	38918	Record Action:	OLD
ID Exam:		ID_ASB_ACC:	Y
Paint and Lighting Specs:	1 12 21 3		
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

FCC & FAA SITES MAP FINDINGS
AIRPORTS

EDR ID
Database

No Sites Reported.

FCC & FAA SITES MAP FINDINGS
POWERLINES

EDR ID
Database

POW0008575
POWERLINES

Msid:	MSX1013842- 1	Voltage:	60
Rangeflg:	1	Hi_range:	92
Type:	AC	Status:	AC
Corridor:	N	Ownr_id:	PGECRP
Own_name:	PG and E Corporation	Opr_id:	PGE
Ownr_flg:	S	Coname:	Pacific Gas and Electric Co.
Physaddres:	77 Beale St.	Physcity:	San Francisco
Physstate:	California	Physlposta:	94177
Mailaddres:	PO Box 770000	Mailcity:	San Francisco
Mailstate:	California	Mailpostal:	94177
Phone:	415-973-7000	Fax:	Not Reported
Webpage:	www.pge.com		

POW0009164
POWERLINES

Msid:	MSX1014495- 1	Voltage:	60
Rangeflg:	1	Hi_range:	92
Type:	AC	Status:	AC
Corridor:	N	Ownr_id:	PGECRP
Own_name:	PG and E Corporation	Opr_id:	PGE
Ownr_flg:	S	Coname:	Pacific Gas and Electric Co.
Physaddres:	77 Beale St.	Physcity:	San Francisco
Physstate:	California	Physlposta:	94177
Mailaddres:	PO Box 770000	Mailcity:	San Francisco
Mailstate:	California	Mailpostal:	94177
Phone:	415-973-7000	Fax:	Not Reported
Webpage:	www.pge.com		

POW0009168
POWERLINES

Msid:	MSX1014499- 1	Voltage:	60
Rangeflg:	1	Hi_range:	92
Type:	AC	Status:	AC
Corridor:	N	Ownr_id:	PGECRP
Own_name:	PG and E Corporation	Opr_id:	PGE
Ownr_flg:	S	Coname:	Pacific Gas and Electric Co.
Physaddres:	77 Beale St.	Physcity:	San Francisco
Physstate:	California	Physlposta:	94177
Mailaddres:	PO Box 770000	Mailcity:	San Francisco
Mailstate:	California	Mailpostal:	94177
Phone:	415-973-7000	Fax:	Not Reported
Webpage:	www.pge.com		

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Various Federal laws and executive orders address specific environmental concerns. NEPA requires the responsible offices to integrate to the greatest practical extent the applicable procedures required by these laws and executive orders. EDR provides key contacts at agencies charged with implementing these laws and executive orders to supplement the information contained in this report.

NATURAL AREAS
Officially designated wilderness areas
Government Records Searched in This Report

FED_LAND: Federal Lands
Source: USGS
Telephone: 703-648-5094
Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.
- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.
Date of Government Version: 12/31/2005

Federal Contacts for Additional Information

National Park Service, Pacific West Region
600 Harrison Street, Suite 600
San Francisco, CA 94107
415-427-1300

USDA Forest Service, Pacific Southwest
630 Sansome Street
San Francisco, CA 94111
415-705-2557

BLM - California State Office
2800 Cottage Way, Room W-1834
Sacramento, CA 95825-1886
916-978-4400

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

Officially designated wildlife preserves, sanctuaries and refuges
Government Records Searched in This Report

FED_LAND: Federal Lands
Source: USGS
Telephone: 703-648-5094
Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.
- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.
Date of Government Version: 12/31/2005

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

State Contacts for Additional Information

Department of Fish & Game 916-653-7667

Wild and scenic rivers

Government Records Searched in This Report

FED_LAND: Federal Lands
Source: USGS
Telephone: 703-648-5094
Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.
- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

Endangered Species

Government Records Searched in This Report

Endangered Species Protection Program Database
A listing of endangered species by county.
Source: Environmental Protection Agency
Telephone: 703-305-5239

CA Endangered Species: Natural Diversity Database
Source: Dept. of Fish and Game.
Telephone: 916-324-3812

Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

State Contacts for Additional Information

Natural Heritage Program, Dept. of Fish & Game 916-322-2493

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

LANDMARKS, HISTORICAL, AND ARCHEOLOGICAL SITES
Historic Places
Government Records Searched in This Report

National Register of Historic Places:
The National Register of Historic Places is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. These contribute to an understanding of the historical and cultural foundations of the nation.
The National Register includes:
- All prehistoric and historic units of the National Park System;
- National Historic Landmarks, which are properties recognized by the Secretary of the Interior as possessing national significance; and
- Properties significant in American, state, or local prehistory and history that have been nominated by State Historic Preservation Officers, federal agencies, and others, and have been approved for listing by the National Park Service.

Date of Government Version: 03/23/2006

CA Historic Landmarks: CA Historical Landmarks
Source: Office of Historic Preservation.
Telephone: 916-653-6624

Federal Contacts for Additional Information

Park Service; Advisory Council on Historic Preservation
1849 C Street NW
Washington, DC 20240
Phone: (202) 208-6843

State Contacts for Additional Information

Office of Historic Preservation, Ept. Of Parks & Recreation 916-653-6624

Indian Religious Sites
Government Records Searched in This Report

Indian Reservations:
This map layer portrays Indian administrated lands of the United States that have any area equal to or greater than 640 acres.
Source: USGS
Phone: 888-275-8747
Date of Government Version: 12/31/2005

Federal Contacts for Additional Information

Department of the Interior- Bureau of Indian Affairs
Office of Public Affairs
1849 C Street, NW
Washington, DC 20240-0001
Office: 202-208-3711
Fax: 202-501-1516

National Association of Tribal Historic Preservation Officers
1411 K Street NW, Suite 700
Washington, DC 20005
Phone: 202-628-8476
Fax: 202-628-2241

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

State Contacts for Additional Information
A listing of local Tribal Leaders and Bureau of Indian Affairs Representatives can be found at:
http://www.doi.gov/bia/areas/agency.html

Phoenix Area Office, Bureau of Indian Affairs
One North First Street P.O. Box 10
Phoenix, AZ 85001
602-379-6600

Sacramento Area Office, Bureau of Indian Affairs
2800 Cottage Way
Sacramento, CA 95825
916-979-2600

Cultural Division, Yuork Tribe
1034 6th Street
Eureka, CA 95501

Scenic Trails

State Contacts for Additional Information
Pacific Crest Trail Association
5325 Elkhorn Boulevard, #256
Sacramento, California 95842
916-349-2109

FLOOD PLAIN, WETLANDS AND COASTAL ZONE

Flood Plain Management
Government Records Searched in This Report
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.

Federal Contacts for Additional Information
Federal Emergency Management Agency 877-3362-627

State Contacts for Additional Information
Office of Emergency Services 916-262-1843

Wetlands Protection
Government Records Searched in This Report
NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2004 from the U.S. Fish and Wildlife Service.

Federal Contacts for Additional Information
Fish & Wildlife Service 813-570-5412

State Contacts for Additional Information
Department of Fish & Game 916-653-7667

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Coastal Zone Management
Government Records Searched in This Report

CAMA Management Areas
Dept. of Env., Health & Natural Resources
919-733-2293

Federal Contacts for Additional Information

Office of Ocean and Coastal Resource Management
N/ORM, SSMC4
1305 East-West Highway
Silver Spring, Maryland 20910
301-713-3102

State Contacts for Additional Information

California Coastal Commission 415-904-5200

FCC & FAA SITES MAP
For NEPA actions that come under the authority of the FCC, the FCC requires evaluation of Antenna towers and/or supporting structures that are to be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law.

Government Records Searched in This Report

Cellular
Federal Communications Commission
Mass Media Bureau
2nd Floor - 445 12th Street SW
Washington DC 20554 USA
Telephone (202) 418-2700
Portions copyright (C) 1999 Percon Corporation. All rights reserved.

Tower
Federal Communications Commission
Mass Media Bureau
2nd Floor - 445 12th Street SW
Washington DC 20554 USA
Telephone (202) 418-2700
Portions copyright (C) 1999 Percon Corporation. All rights reserved.

Antenna Registration
Federal Communications Commission
Mass Media Bureau
2nd Floor - 445 12th Street SW
Washington DC 20554 USA
Telephone (202) 418-2700
Portions copyright (C) 1999 Percon Corporation. All rights reserved.

AM Tower
Federal Communications Commission
Mass Media Bureau
2nd Floor - 445 12th Street SW
Washington DC 20554 USA
Telephone (202) 418-2700

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

FAA Digital Obstacle File
National Oceanic and Atmospheric Administration
Telephone: 301-436-8301
Describes known obstacles of interest to aviation users in the US. Used by the Federal Aviation Administration (FAA) and the National Oceanic and Atmospheric Administration to manage the National Airspace System.

Airport Landing Facilities
Federal Aviation Administration
Telephone (800) 457-6656
Private and public use landing facilities.

Electric Power Transmission Line Data
PennWell Corporation
Telephone: (800) 823-6277
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Excessive Radio Frequency Emission
For NEPA actions that come under the authority of the FCC, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the determination of whether the particular facility, operation or transmitter would cause human exposure to levels of radio frequency in excess of certain limits.

Federal Contacts for Additional Information
Office of Engineering and Technology
Federal Communications Commission
445 12th Street SW
Washington, DC 20554
Phone: 202-418-2470

OTHER CONTACT SOURCES

NEPA Single Point of Contact
State Contacts for Additional Information
Grants Coordination
State Clearinghouse
P.O. Box 3044
Room 222
Sacramento, CA 95812-3044
916-445-0613

STREET AND ADDRESS INFORMATION

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Certified Sanborn® Map Report

Sanborn® Library search results
Certification # EE6B-4FF4-8E90

Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number 1939860.3

May 29, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Certified Sanborn® Map Report

5/29/07

Site Name:
Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Client Name:
Terrasearch Inc.
257 Wright Brothers Avenue
Livermore, CA 94550

EDR Inquiry # 1939860.3

Contact: Rob Campbell

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Terrasearch Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Trails of Manteca
Address: 2368 East Woodward Avenue
City, State, Zip: Manteca, CA 95337
Cross Street:
P.O. # 11515.G
Project: Nextbay Propert
Certification # EE6B-4FF4-8E90

Sanborn® Library search results
Certification # EE6B-4FF4-8E90

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

Total Maps: 0

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The EDR-City Directory
Abstract

Trails of Manteca
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 1939860.6

Wednesday, May 30, 2007



The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1971 through 2006. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: May 30, 2007

Target Property:
2368 East Woodward Avenue
Manteca, CA 95337

Year	Uses	Source
1971	Address Not Listed in Research Source	Haines Criss-Cross Directory
1976	Picchi Farms Inc	Haines Criss-Cross Directory
1981	Picchi Farms Inc	Haines Criss-Cross Directory
1986	Address Not Listed in Research Source	Haines Criss-Cross Directory
1991	Address Not Listed in Research Source	Haines Criss-Cross Directory
1996	Address Not Listed in Research Source	Haines Criss-Cross Directory
2001	Address Not Listed in Research Source	Haines Criss-Cross Directory
2006	Address Not Listed in Research Source	Haines Criss-Cross Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
Manteca, CA 95337

Year	Uses	Source
1971	Address Not Listed in Research Source	Haines Criss-Cross Directory
1976	Address Not Listed in Research Source	Haines Criss-Cross Directory
1981	Address Not Listed in Research Source	Haines Criss-Cross Directory
1986	Address Not Listed in Research Source	Haines Criss-Cross Directory
1991	Address Not Listed in Research Source	Haines Criss-Cross Directory
1996	Address Not Listed in Research Source	Haines Criss-Cross Directory
2001	****East Woodward Avenue****	Haines Criss-Cross Directory
	No Return (2401)	Haines Criss-Cross Directory
	No Return (2441)	Haines Criss-Cross Directory
	No Return (2495)	Haines Criss-Cross Directory

Year	***Uses***	***Source***
2001	No other addresses in 2200-2495 range	Haines Criss-Cross Directory
2006	****East Woodward Avenue****	Haines Criss-Cross Directory
	No Return (2401)	Haines Criss-Cross Directory
	No Return (2441)	Haines Criss-Cross Directory
	No Return (2495)	Haines Criss-Cross Directory
	No other addresses in 2200-2495 range	Haines Criss-Cross Directory

G.2 - Phase II Environmental Site Assessment

Project No. 11515.E1
April 14, 2008

Ms. Arlene Utal
Weatherbee Properties, LLC
3000 Danville Boulevard, Suite F-545
Alamo, California 94507

Subject: Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
PHASE I & LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

Reference:

1) Phase I and Updated Phase II Environmental Site Assessment
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
*By **TERRASEARCH, inc***.
D*ated May 29, 2007*

2) Phase I Environmental Site Assessment
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
*By **TERRASEARCH, inc***.
D*ated April 25, 2005*

3) Phase II Environmental Site Assessment
Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
*By **TERRASEARCH, inc***.
D*ated June 13, 2005*

Dear Ms. Utal:

At your request, ***TERRASEARCH, inc***. is pleased to present the results of the Phase I Environmental Site Assessment (ESA), which reviews and incorporates, as appropriate the findings of previous environmental work performed for the subject site. The purpose of this Phase I Environmental Site Assessment is to evaluate potential adverse environmental conditions on the subject property and immediately surrounding the property, as defined in CERCLA liability, 42 USC §9601(35) and §9607(b)(3). This report provides a summary of environmental services and results from previous reports and additional services and findings and recommendations performed under the current scope of services for the subject property.

The subject property is comprised of five (5) parcels APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03 located at 2368, 20601 and 20611 Woodward Avenue in Manteca, California. This Phase I ESA references previous environmental site assessments performed by ***TERRASEARCH, inc***. for the subject property (see above references). The purpose of conducting this Phase I Environmental Site Assessment is to provide an independent, professional opinion regarding recognized environmental conditions (RECs), if any, associated with the subject site and to assess the compatibility of the environmental condition of the subject site with respect to the planned land use. This Phase I Environmental Site Assessment conforms to ASTM E1527-2005 standard for conducting Phase I Environmental Site Assessments. The subject property was evaluated for the presence of potentially adverse environmental conditions and the surrounding area was evaluated for secondary potential contaminated sites within a 1-mile radius of the subject site. This Phase I Environmental Site Assessment was prepared for the use of our client, Weatherbee Properties, LLC. Per EPA AAI Rule, the findings and opinions of this report expire 180 days from the date of issuance.

Site Location

The subject property is located in the southern portion of San Joaquin County, in the southwestern portion of Manteca, California. The subject site is comprised of five adjoining parcels totaling approximately 480 acres (APNs 241-240-02; -03; 241-040-04; -05 and 241-260-05) and located at 2368, 20601 and 20611 Woodward Avenue, California. Currently the subject site is occupied by five structures, one trailer home, an almond orchard, alfalfa fields, irrigation system, farming equipment, two portable above ground storage tanks (ASTs) an abandoned fuel pump and a collection of debris (see Figure 1, Site Vicinity Map and Site Plan).

Site Topography and Geology

Based on the most recent USGS historical topographic dated 1987, the local topography is approximately 15-feet above mean sea level (msl) on the north-northwestern portion, while ranging from 20 feet to 25 feet above msl on the south-southwestern and eastern portions at the site. Weatherbee Lake is situated immediately west and the San Joaquin River is mapped approximately 3,500 feet west of the site. Drainage appears to follow the local topography from southeast toward to the northwest, along the local topography.

According to the Geologic Map of California by Charles W. Jennings (1977), published by California Department of Conservation, Division of Mines and Geology, the material underlying the subject site are consisted of Quaternary, Pleistocene-Holocene (Q) consolidated and semi-consolidated alluvium, lake, playa and terrace deposits. Deposits mostly consist of non-marine but include marine deposits near the coast**.**

Based on the geotechnical and environmental investigations performed by ***TERRASEARCH, inc.***, depth to ground water beneath the subject site is ranging from 11-feet to 18-feet bgs. Localized groundwater appears to flow toward the northwest based on local topography.

Field Reconnaissance

A ***TERRASEARCH, inc.*** representative visited the subject site on April 10, 2008 and made the following observations:

- The site was located less than 0.25-mile southwest from the intersection of East Woodward Avenue and McKinley Road. An elevated road (approximately 15 feet high and 20 feet wide at the crown) was observed on the central portion of the subject site, between the South Woodward Avenue and the southeastern boundary of subject site. The slope of the elevated road was approximately 2.5:1 (horizontal to vertical) on both sides and traversed northwest to southeast. Because of the uniformity of the side slopes of the road, the road appeared to be of engineered fill construction. Digital photographs of the subject site are shown on Figures 3 through 10.

- The subject site was bounded by East Woodward Avenue and Oakwood Shores residential development to north; Walthall Slough, an irrigation ditch and a field of seasonal crops (oats) to the south; open land and oat field to the east. South Woodward Avenue, Weatherbee Lake, a portion of Oakwood Shores development and residences to the west.

At the time of the initial Site visit conducted on April 19, 2005 the subject site was comprised of the following five adjoining parcels:

APN 241-260-05 (2368 East Woodward Avenue) was primarily occupied by five structures, an almond orchard, open fields, a levee road and seasonal grasses and weeds. This portion of the subject site was connected to East Woodward Avenue by a gravel driveway. A PG&E power line and associated poles were observed along the eastern and northern boundaries of the subject site. A barn with a concrete floor and metal pole construction (pole barn), a single story residence, a trailer, a dilapidated bunk house (storage), an out-building storage structure, a warehouse with a concrete slab floor, three portable ASTs (empty), farm equipment, debris piles, large amount of debris (tires, trash, plastic and metal items) was observed in the central portion of this parcel near and around the structures. The residence and trailer home were locked at the time of our site visit. The dilapidated bunk house was accessible and was used for storage of household items. Trash cans, a propane tank, pole-mounted transformers, one portable empty AST was observed near the residence. These features are discussed below:

- No leaks were observed around the portable ASTs or pole mounted transformers.

- The storage structure located south of residence was constructed of corrugated sheet-metal with a partial dirt area on a primarily concrete floor. A few isolated oil and diesel-stained soil areas were observed on the floor of the structure, along with a few full 5-gallon waste oil and gasoline containers and a few car batteries. Large amounts of refuse items, such as tires, scrap metal/lumber, furniture, appliances, empty containers, farm equipment, empty plastic and metal containers, a partially buried AST within the debris pile, abandoned trucks and cars and tractors were observed within and outside the corrugated metal storage structure.

Areas directly north and south of the metal storage structure were covered by tar emulsion surface.

- An abandoned fuel pump with a cement pad was observed adjacent to the northwest corner of storage structure. According to Ms. Diane Wurzel, an underground storage tank (UST) was removed immediately adjacent to the fuel pump by the tenant**,** who has leased the property for the last few years. The tenant was not present on the property at the time of our visit. However, Ms. Wurzel was not aware of any information regarding the removal and/or disposal of the UST.

- The warehouse, which was made of corrugated sheet-metal, was constructed on a concrete floor and situated immediately west of the residence. The exterior of the warehouse was partially painted. Two 55-gallon drums filled with waste oil were observed immediately northeast of the warehouse on the concrete slab. A large number of empty and full containers of pesticides, insecticides, herbicides and a few waste oil containers were observed within the warehouse. A debris pile and a few minor stains were observed around the warehouse.

- There were several deep irrigation ditches, irrigation stand pipes, irrigation structures and valves through out the subject site. An abandoned pump station structure with aged steel pipes was observed on the west side of the subject site, near South Woodward Avenue.

- A burned car body and several tires were observed near the irrigation pump-houses on the northwestern portion of the subject site, between the elevated road and the almond orchard. A few burn pits (associated with tree burning operations) were observed throughout the almond orchard area.

APNs 241-240-02 & -03 comprised the southern portion of the subject site. Both parcels were covered by oats and alfalfa fields. Irrigation stand pipes, valves and an elevated road were observed on this portion of subject site. A water pump station was observed on the southern boundary near the Walt Hall slough. No leak was observed beneath the pole-mounted transformer, which was located near the water pump station. A dirt pile was located on the northeast corner of APN 241-240-02. An on-site gas pipeline warning sign was observed on the eastern portion on western edge of the levee road.

APNs 241-040-04 & -05 (20601 and 20611 South Woodward Avenue) comprised the far western portion of the subject site and was located across South Woodward Avenue directly northeast of Weatherbee Lake. The levee road traversed the central portion of the subject site and was observed on the central portion of these parcels. A water pump station and irrigation system was observed on the western boundary of these parcels. A PG&E power line with associated poles and three pole-mounted transformers were observed next to the irrigation structure. No leaks were observed beneath the transformers. The northern perimeter of the site was bounded by an off-site, graded property, with Lakeview Drive (Oakwood Shores Development) and a few residences further north. Weatherbee Lake residential community was located on the adjacent property to the southwest of this portion of the subject site. Dense trees and seasonal grasses

covered the southwestern portion and the western boundary of these parcels was secured by cyclone fencing. The following paragraphs describe these features:

- PG & E power lines, utility lines and buried cable warning signs were located along the northern and western boundaries of the subject site. A few pole-mounted and newer slab-mounted transformers were also observed to the north, east and west of the subject site. No leaks were observed beneath these transformers.

REGIONAL AND SITE HISTORY REVIEW

The history of the site was developed in previous reports and deduced at the time of those reports from examination of historical aerial photographs, and historical topographic maps. A Sanborn Map and City Directory search were also conducted for the subject site. The following description is drawn from previous reports.

TERRASEARCH, inc. has examined twelve (12) aerial photographs and seven (7) historical topographic maps of the subject site and vicinity, which were provided by Pacific Aerial Surveys and EDR. Data for the photographs are tabulated below:

AERIAL PHOTOGRAPHS EXAMINED

Flight Date	Approximate Scale	Identification Number
1957	1:6660	Cartwright, 1939860.5
1963	1:6660	Mark Hurd, 1939860.5
05-01-1968	1:30000	AV844-32-07, 08
1982	1:8280	WSA, 1939860.5
04-26-1985	1:63360	AV2600-18-20, 21
05-05-1989	1:63360	AV-3600-18-31, 32
07-24-1992	1:12000	AV-4230-0156-50; AV-4230-0157-49
1993	1:7992	USGS, 1939860.5
08-06-1996	1:12000	AV-5202-12-45; AV-5202-13-42
1998	1:7992	USGS, 1939860.5
09-22-1999	1:12000	AV-6100-156-51; AV-6100-157-53
09-09-2002	1:24000	AV-8244-8-26

HISTORICAL TOPOGRAPHIC MAPS

Date	Scale	USGS Topographic Map
1915	1:31680	7.5-Minute Lathrop Quadrangle
1952	1:24000	7.5-Minute Lathrop Quadrangle
1968	1:24000	7.5-Minute Lathrop Quadrangle
1976	1:24000	7.5-Minute Lathrop Quadrangle
1987	1:24000	7.5-Minute Lathrop Quadrangle
1994	1:24000	7.5-Minute Lathrop Quadrangle
1996	1:24000	7.5-Minute Lathrop Quadrangle

Regional History

On June 21, 1805, under orders from the Spanish Governor of California, Lieutenant Gabriel Moraga brought his cavalry from the Presidio of San Francisco to explore the interior valley. According to written history, Moraga was the first non-native explorer to enter what is now the San Joaquin Valley. In 1808, Moraga traveled inland from mission San Jose in an attempt to find potential locations for Spanish missions, as well as to track down Indians that had left the mission. During these travels, he named a small creek "San Joaquin" after Saint Joachim. Later, it was discovered that the creek fed into a larger river, which happened to be a major tributary through the valley. The subject site lies adjacent to this river. As a result, the river's name was extended to the entire central valley, becoming known as the San Joaquin Valley. In 1850, at the time of statehood, San Joaquin County was created.

Today, San Joaquin County covers approximately 1,400 square miles and 921,600 acres of land. Located in the Central Valley, east of the San Francisco Bay Area, the county is made up seven cities, including Stockton, Escalon, Lathrop, Lodi, Manteca, Ripon and Tracy and thirteen unincorporated towns, including August, Country Club, Farmington, French Camp, Garden Acres, Kennedy, Lincoln Village, Linden, Lockeford, Morada, North and South Woodbridge and Taft Mosswood. In addition, the Community of Mountain House is included within San Joaquin County. As of 2006, the population of the county was approximately 620,000.

The first inhabitants of the south county attracted by bordering Stanislaus and San Joaquin Rivers and French Camp Slough were members of the Yokuts tribe of American Indians. They lived in this area not less than 4000 years ago. Cutle Salmon and Peter Clapp were the early pioneers of the San Joaquin County.

The City of Manteca is located in the central valley of California, about 80 miles east of San Francisco. Manteca was founded by Joshua Cowell in 1861. Cowell claimed about 1,000 acres (4 km²) and built their houses on what is now the corner of Main and Yosemite Avenue, where the Bank of America building still stands. In 1873, the Central Pacific Railroad was put directly through town and "Cowell Station," a boxcar on the side of the tracks, was made a stop. Joshua Cowell's brother, Wright Cowell, had already named a "Cowell Station" near the City of Tracy, California. Therefore, the name "Monteca" was chosen instead. However, an unfortunate misprinting of the train tickets caused the city's name to read "Manteca," which stands for "butter" or "lard" in Spanish. Since it would have been expensive and difficult to reprint the tickets, the name of the city was changed instead. In 1918, Manteca was incorporated as a city and Joshua Cowell became its first mayor.

As recently as the 1970s, Manteca "The Family City" existed primarily on agriculture and was still a stop between two freeways, Interstate 5 and California State Highway 99. The continuing rise in bay area real estate prices has caused more workers to look eastward for a cheaper place to live and a better place to raise their families. Since the construction of the 120 bypass portion of California State Route 120, Manteca has become a popular choice for these commuters. The 1990s saw a phenomenal increase in the city's population.

A recurring name in Manteca is "East Union". It was first used in 1857 for a school established in what is now Manteca. The school was named East Union in order to differentiate it from Union School, which is in an area now within Lathrop, California. A cemetery named East Union was established in 1872 and remains one of San Joaquin County's oldest landmarks. In 1966, the city of Manteca started another high school to relieve overcrowding in Manteca High School. The new school was given the name East Union High School in tribute to an old farmhouse school. Projects such as now finished Big League Dreams Sports Park, The Promenade Shops at Orchard Valley, an outdoor lifestyle mall, a performing arts center, convention center, the newly finished Stadium Center, and many upscale hotels.

According to the United States Census Bureau, the city has a total area of 41.2 km² (15.9 mi²), all land.Neighboring towns include Lathrop, Ripon, Escalon, and Tracy. Manteca is also in between the larger cities of Modesto and Stockton.

The city of Manteca is located in San Joaquin County, in the Stockton metro area. The latitude of Manteca is 37.797N and the longitude is -121.215W and is located in the Pacific Standard time zone. Elevation is 36 feet and the estimated population, in 2003, was 59,500. There are twenty two elementary and six high schools in the city of Manteca and is a part of the Manteca Unified School District.

SITE HISTORY

All of the land from Bronzan Road to Weatherbee was once the ranch of George Wetherbee, who came to the area in March of 1877 to the center of the land where Manteca is now. An old house and a barn existed on this area at this time. He started working for a dollar a day. Wetherbee and his wife died in late 1940s are buried in the East Union Cemetery of Manteca.

Walter Woodward came to Manteca in 1905 and farmed his land (160 acres) and lived at the present intersection of Airport Way and Woodward Road and died on September 21, 1939. In 1968, structures consisting of residences, a warehouse and storage barn and a pole barn were constructed on the northern portion of the subject site. Currently the property is used for agricultural purposes including almond orchards on the northwestern portion. A residence, a warehouse and a storage barn are also present on the north side of the subject site.

Aerial Photographic Site Features

Aerial photographs indicated few changes at the subject site over the past 45 years (1957 to 2002). In 1957, the subject site was located within an agricultural district of San Joaquin County and surrounded by similar agricultural properties. The site consisted of a vacant land with a few structures, which were located on the eastern portion. A levee existed on the southern portion of the subject site. The Walthall Slough was observed directly south of the site. Row crops were observed on the northwest portion of the site in 1963 and most of the site was vacant. In 1968, irrigation ditches and a levee road trending northwest to southeast were observed on the site. Parcels APNs 241-040-04 & -05 (20601 and 20611 South Woodward Avenue) appeared vacant and was covered with isolated trees. A driveway was observed east of 20601 South Woodward Avenue. An object similar to a structure and the current pumping station were observed on the above mentioned parcels. A total of six structures consisted of four barns and one residence (current residence) and an out building were observed east of the residence at 2368 East Woodward Avenue. Weatherbee Lake and residences were located to the west, Walt Hall Slough and vacant land were observed to the south, vacant land and ranches were observed to the east, Woodward Avenue and vacant land bounded the site to the north. San Joaquin River was observed to the west and railroad tracks were situated farther north of the site. No changes were observed on the site in 1982 and 1985. However, a residential development and lake were observed immediately northwest, across Woodward Avenue. State Highway 120 and 205 were situated north and northwest of the site. Seasonal crops were observed on the site in 1989. Ranches and other agricultural development increased in the surround area and around Weatherbee Lake. By 1992, row crops were observed on the site. A parking lot was constructed northwest across Woodward Avenue and orchards were observed to the southeast. The subject site remained unchanged in 1993 and 1996. Orchards were observed on the northwestern portion of the subject site in the aerial photos of 1998. Row crops were observed throughout the site. A total of seven structures (barns, residence and outbuildings) were present at 2368 East Woodward Avenue. Irrigation ditches were observed on the site and dense trees were observed on the western portion of the site, near Weatherbee Lake.

Historical Topographic Map Features

The topographic map of 1915 mapped the subject site as vacant land and a few round hills situated east of the San Joaquin River. Minor ponds were mapped on the western, southern and central portions of the property. A dredger cut (elevated road) was mapped traversing from the southeast toward the northwest portions of the property. The Walthall Slough was mapped immediately west-southwest. Unnamed streets and Western Pacific Railroad tracks were

situated to the north. Rustic School was situated farther to the east of the subject site. By 1952, a canal was mapped on the central portion of the site, alongside the levee road and Woodward Avenue was mapped directly north and northwest of subject site. Two water-wells were mapped immediately off-site and north of Woodward Avenue. Weatherbee Lake and the associated residential community were mapped west-northwest of the site. A pump and water-well were mapped southeast of site. The Town of Manteca was mapped farther to the northeast of subject site. A total of seven large and small structures (current barns and residence) along with a driveway were mapped on the eastern portion of subject property by 1968. The canal was not mapped; however, a levee road and a driveway were mapped on the southwestern, western and southern portions of the property. The subject property remained unchanged in 1976 and ponds were still mapped southwest of structures and on the northwest portion of site. A few residences and reservoirs were mapped to the immediate northwest and farther to the north of subject site. No change was observed on the site in 1978. By 1994, a driveway and a structure were mapped on the southwestern portion and a new driveway was mapped on the northeastern portion of subject site. Highway 120 was mapped farther to the north of the site. No change was apparent on the subject site in 1996. A total of eight structures, levee road and ponds were still present on the subject site.

Sanborn Map Review

No Sanborn Fire Insurance Maps were available for the subject site or its surrounding.

City Directory Review

From 1968 through 2000, the site address was not listed in 1968, 1972, 1978, 1983, and 1996 according to Polk's City Directory and was listed in 2000 as a residence.

Review of Chain-of-Ownership and Lien Search

The Chain-of-Ownership and Lien Search were not received by the preparation date of this report. However, according to the EDR Environmental Lien Search Report dated June 11, 2007, APNs 241-240-02; -03, 241-040-04; 241-040-05 and 241-260-05 are owned by Weatherbee Properties, LLC and no environmental lien or other activity and use limitations (AULs) were found for the subject site.

Review of City and County Building Records

TERRASEARCH, inc. visited the San Joaquin County Community Development Department and spoke with Ms. Trudy Reed to ascertain the past use and permit history of the subject site. According to Ms. Reed and based on the computerized data from 1992 up to present, files existed for APNs 241-040-04 & -05 (20601 and 20611 South Woodward Avenue). These files documented the rezoning history of above mentioned parcels from agricultural to residential properties. She further stated these parcels are owned by Baird Land Inc. In addition, we reviewed non-computerized files of permit history, which included historical building permits

from 1942 to 1992 for San Joaquin County. Only one permit (#162905) was found, which was issued on September 19, 1989 for 20611 South Woodward Avenue. The permit was electrical and was issued to change electrical service to 100 amps.

According to the San Joaquin County official, parcels APN 241-260-05; 241-240-02 & -03 were recently annexed to the City of Manteca; therefore, no files were located for these parcels.

TERRASEARCH, inc. visited the City of Manteca Community Development Department and spoke with the Building; Planning and Public Works Departments officials to ascertain the past use and permit history of the subject site. According to Ms. Blaise Kuhl and Ms. Marilyn Bates parcels APNs 241-260-05; 241-240-02 and -03 were recently annexed to the City of Manteca. Therefore, no file existed for the subject parcels within the City of Manteca Community Development Department.

The San Joaquin County Assessor's Office was contacted regarding Assessor's Parcel Number (APN) and usage history of the subject site. The Assessor's Official verified five parcels comprised of APN 241-260-05 (2368 East Woodward Avenue) as a 236.49 acres used for irrigated crops; APN 241-240-02 as a 102.32 acres (vacant land); APN 241-240-03 as a 138.68 acres (vacant land); APN 241-040-04 (rural residential - 20601 Woodward Avenue) as a 0.94 acres and APN 241-040-05 (rural residential - 20611 Woodward Avenue) as a 1.73 acres. The entire property comprised of approximately 480 acres, which is owned by Baird Land Inc. She further stated they had no record of the construction history on the subject site.

Based on our site observations no structures exist on APNs 241-040-04 and -05. Review of PG & E files by Jacobson Consulting revealed that Occidental Petroleum Corporation placed an underground gas pipeline that started from Mullins Gas Field south of the property to a fertilizer plant north of the site in 1963. The pipeline bisects the northeastern and southeastern corners of the property (as shown on Figure 2). However, the exact location of the pipeline is not known. PG&E owned the pipeline in 1965 through present and according to PG&E, the underground pipeline is steel in construction and not in use.

Interview with Property Owner

TERRASEARCH, inc. contacted the current property owner Ms. Diane Wurzel the President of Baird Land, Inc. and conducted the following interview via the Property Owner Questionnaire and personal communications. Ms. Wurzel stated that her grandfather Ernest Baird, Sr. purchased the property in late 1930s or 1940s. The property was used only for farming purposes. The wood barn was used to store bails of alfalfa and was rebuilt approximately 15 years ago. Ms. Wurzel stated that most of the structures were comprised of metal and wood and was not aware that lead-based paint (LBP) or ACMs were used on any structures. Ms. Wurzel stated that there used to be a gas pump for farm vehicles in the 1950s and 1960s. To her knowledge there are no archeological findings, french drains, underground storage tanks, water-wells, monitoring, oil/gas wells on the site. Barns, storage buildings, above ground tanks and trash were present on the site at the time of the interview. She did not know the name of the

previous property owner. Ms. Wurzel did not know of any environmental factors that could or have potentially affected the subject site.

Potential Primary Environmental Concerns

TERRASEARCH, inc. contacted San Joaquin County Office of Emergency Services Hazardous Materials Program and spoke with Ms. Michelle Halliwell to review any files that would identify hazardous material storage or site contamination. No files were found and according to Ms. Michelle Halliwell files would be located at the San Joaquin County Environmental Health Department.

TERRASEARCH, inc. also contacted the Environmental Health Division of San Joaquin County (EHDSC) to review any files that would identify hazardous material storage or site contamination, USTs cleanups/removal on the subject site. According to the EHDSC official, no file existed for the subject site that would identify the presence and/or removal of USTs on the subject site. We also contacted the City of Manteca Fire Department (CMFD) and Lathrop-Manteca Fire Prevention District (LMFPD) and spoke to Ms. Angela Manding to inquire if any file existed for the subject site and no files were found.

TERRASEARCH, inc. also contacted the Sacramento Office of Regional Water Quality Control Board (RWQCB) and spoke with Mr. Windy Orr to inquire if any environmental and/or spills-leaks-investigation-contamination (SLIC) files were available for review. According to the RWQCB, no files were available for the subject site.

TERRASEARCH, inc. also contacted the San Joaquin County Department of Agriculture (SJCDA) to inquire if any files existed that would identify the usage of chemicals on the subject site. No files were found for the subject site.

The following is a summary of the Hazardous Substances in connection with identified uses:

Asbestos-Containing Materials (ACMs) and/or Lead-Based Paint (LBP)

Due to the age of the residential structure, which existed on the subject site prior to 1978, ACMs and LBP may have been applied to the construction of residence. The bunk house and barns were not painted and composed of corrugated metal sheet.

Radon Gas

According to the EDR Radius Report, indoor radon average is < 2 pCi/L, which is below the EPA action level of 4 pCi/L. Properties planned for residential development that report radon gas levels greater than 4 pCi/L require mitigation prior to development. The United States Geological Survey (USGS) considers this a low exposure potential area for radon.

Facility Storage Tanks (above or below ground)

No UST was observed on the subject site. A total of three portable empty ASTs were observed on the subject site, which appeared to be used for the transportation of fertilizer and/or diesel products. The ASTs were empty at the time of our site visit. ASTs were observed south of storage barn and warehouse, and north of bunk house. One partially exposed AST (empty), which is buried under debris was also observed west of pole barn.

One abandoned fuel pump was located adjacent to the northwest corner of the above mentioned storage barn. According to Ms. Diane Wurzel the tenant removed the UST near the fuel pump area; however, to her knowledge, no permits or soil samples were obtained for and during the UST removal activities. Furthermore, she did not know where the removed UST was transported.

Transformers or Other Electrical Equipment that use Dielectric Fluid

There were a total of nine (9) pole mounted transformers on or adjacent to the subject site. These transformers were located on the southern and western portions of the subject site and near the residence at 2368 East Woodward Avenue. In addition, a cement pad mounted transformer was located to the west and a few pole mounted transformers were observed to the east and west of the subject site. No leaks were observed beneath any of these transformers.

Potential Environmental Concerns

Since the site was formerly and currently being used for agricultural purposes, metal and organochloride pesticides may have been applied to the site. However, our Phase II ESA (Reference 3) did not detect any organochloride or metal pesticide, or herbicide residues within the surficial soil beneath the entire site. However, elevated concentrations of petroleum-hydrocarbons, VOCs and PCBs were detected within soil and groundwater near the barns and ASTs at the subject site; however, the lateral and vertical extent of these chemicals is not known.

A large amount of debris and farm equipment including tires, partially buried AST, car batteries, motor oil and waste oil containers, pesticide, insecticide and herbicide containers may have leaked organochloride pesticides, herbicides and petroleum-hydrocarbons into the surficial soil beneath these containers, debris piles.

TERRASEARCH, inc. visually observed the exterior of the residence located at the subject site. The construction materials used prior to 1978 contained ACMs and were often painted with LBP; therefore, the residence on the property may contain ACM and/or LBP and may pose a lead-based material (LBM) hazard.

An LBM hazard is defined as a condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, and lead-contaminated paint that are deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces *that would result in adverse human health effects* as established by the appropriate federal agency. LBP is considered to be hazardous under the following conditions:

Children under age seven chewing or mouthing on painted surfaces or when they are exposed to LBP dust, soil contaminated with lead, LBP which is in deteriorated condition.

Prolonged or repeated exposure of other facility occupants or workers to airborne LBP dust.

Certain types of paint applied before 1980 are more likely to contain lead. These are oil-based paints used in industrial facilities as well as residences, applied primarily to kitchens, bathrooms, and interior and exterior wood trim in residences. Latex paint for architectural use, which normally does not contain lead, became popular after 1960, and nearly all paint applied after 1980 to the interior and exterior of houses and non-industrial buildings was latex. However, because of their durable properties and lack of federal regulation, LBP continued to be used in industrial facilities, on steel structures, and for pavement markings. Additionally, LBP may also be found in non-industrial facilities, primarily in primers on ferrous metal surfaces.

A second concern may be the presence of asbestos containing material (ACM) within ceiling and floor tiles in all the structures, especially the tile siding on the walls of hallways and rest room floors etc. Asbestos products were used heavily in building construction from 1960 to 1980, and have been used as thermal, fireproof, and acoustical insulation after 1980. It has also been woven into fabrics for use in expansion joints of ductwork as well as for fireproof curtains. It has been used as a strengthening agent in concrete, floor tile, mortar, grout, and drywall speckling compounds. In general, asbestos has been identified in over 3000 materials typically used in buildings.

Secondary Contamination Source Sites

For the purposes of this investigation, a search was made of 73 State and Federal regulatory agency lists of contaminated or potentially contaminated sites, or properties where transportation, handling, storage, and/or disposal of hazardous materials occurs or has occurred.

In accordance with recently adopted standards by the American Standard for Testing and Materials (ASTM, 2005), 73 databases were searched within a 1-mile radius of the site. Details and explanations of these databases are discussed within the attached EDR Radius Report. It should be noted that listings reported without location data were found to be more distant than the standard minimum search distance. In addition, some of the databases consist of lists of handlers, transporters, and generators of toxic materials rather than contaminated sites.

Out of all databases searched, no secondary potential site was identified within a 1-mile radius of the subject site.

Based on EDR report dated April 8 and 11, 2008, the subject site is located within a FEMA 100 and 500-year flood Zone, however according to the FEMA Flood Zone Map the site is divided into two separate zones. The northern portion of the site, north of the levee, is classified as Zone B which according to FEMA is *"areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where*

contributing drainage area is less than one square mile; or areas protected by levees from the base flood." The southern portion of the site, south of the levee, is classified as Zone A21 which is *"areas of 100-year flood; base flood elevations."*

In addition, one 60-KV PG & E power line was mapped through the central portion of the subject site; however, this was not observed on the subject site. State Highway 120 and the Western Pacific Railroad track was mapped farther to the north of the subject property. A federal wetland was mapped directly to the southwest and west of the subject site.

No Coal Gas site was found in a search of Real Property Scan's ENVIROHAZ database.

Based on the EDR NEPA Check dated May 29, 2007, no mapped sites were found in EDR's search of available government records within the search radius around the target property. However, based on the site observations the Weatherbee Lake and Walthall Slough are located immediately west and south of the subject site.

One USGS water-well was identified within a 0.5-mile radius on the subject property as follows:

FED USGS (002S006E20G002M) – Located within 0.25-0.5-mile north-northeast and off-site. The water-well depth was reported 220 feet bgs and the groundwater table, which was measured on 05-03-1974, was reported 28.10 feet bgs. The well was reportedly constructed on 05-03-1974.

EDR mapped an Oil/Gas well (API #07720332) within 0.25 to 0.5-mile west of the subject site. EDR reported that the well was drilled and abandoned in 2006. However, according to the Division of Oil, gas, & Geothermal Resouces (DOGGR) data the well spud date was 8-3-1979 and was abandoned on 8-21-1979. Copies are attached.

PHASE II ENVIRONMENTAL SITE ASSESSMENT

A Phase II ESA of the property, dated June 13, 2005 (Reference 3) was performed by ***TERRASEARCH, inc***. Based on the laboratory analytical results of soil samples collected from the site and debris piles organochloride pesticides, herbicides and metals arsenic, lead and/or mercury were determined to have not impacted the surficial soil and/or debris piles at the site. A low concentration of total extractable petroleum hydrocarbons reported as diesel (TEPHd) was detected at 66 µg/L within groundwater collected near the abandoned gas pipeline; however, no detectable concentrations of total petroleum hydrocarbons reported as gasoline (TPHg), TEPH reported as motor-oil or volatile organic compounds (VOCs) were detected in any soil or groundwater samples collected from the borings at the site.

Elevated concentrations of petroleum-hydrocarbons, PCBs as Aroclor 1260 and moderate concentrations of VOCs were detected near the above-ground storage tank (AST) and stained soil area (north of the warehouse) in both soil and groundwater samples. In addition, elevated concentrations of beta- and gamma-BHC (organochloride pesticides) were detected south of the

residence and may indicate former pesticide storage and/or pesticide mixing areas. TPHg, TEPHd, TEPHmo and Aroclor 1260 were detected above Preliminary Remediations Goals (PRGs) and Environmental Screening Levels (ESLs) and remediations to establish the lateral and vertical extent of these chemicals were made at the time as required foundational information to design appropriate remediation methods for the soil contamination around the barn area.

SOIL REMEDIATION ON THE AST SITE

On April 19, 2005, an above ground storage tank (AST) was observed on the northern portion of the subject site north of warehouse. The AST was mounted on a steel rack on the concrete slab. The soil beneath the AST was impacted by petroleum hydrocarbons. ***TERRASEARCH, inc***. conducted a Phase II ESA dated June 13, 2005 for the subject site. According to the Phase II ESA findings high concentrations of PCBs as Aroclor 1260 in the soil, and elevated concentrations of petroleum hydrocarbon constituents were reported in the soil and groundwater beneath the AST location.

On March 17 and 18, 2008, a ***TERRASEARCH, inc***. representative visited the subject site, equipped with Photoionization Detector (PID), RAE2000PID to observe the excavation and removal of petroleum hydrocarbon impacted soil from beneath the AST location. PID was leased from Equipco Rentals of Concord, California and was utilized to establish the vertical and lateral extent of the petroleum hydrocarbon impacted yellow brown silty sand and to monitor health and safety conditions.

Jim Thorpe, Inc. (JT) of Lodi (License #495699) was hired by the client (property owner) to perform the soil remediation operations. At the direction of the client, JT performed the excavation and transportation of the excavated soil. Jim Thorpe, Inc. used an excavator and two 16 wheel dump trucks for soil remediation purposes. The petroleum hydrocarbon impacted soil was excavated and loaded into dump trucks. Discoloration was also observed in the soil beneath the AST. The PID readings were reduced nearly zero in the excavation. The petroleum hydrocarbon impacted soil was excavated to approximately 8 feet bgs and above the groundwater margin. Petroleum hydrocarbon impacted soil laterally extended toward east beneath the concrete slab. Therefore, approximately 10 feet of the slab and the contaminated soil were also removed. Discolored soil at the bottom of the excavation was targeted for sampling and analysis. Groundwater was not encountered and is estimated at approximately two feet beneath the bottom of the excavation.

The AST excavation was approximately 23-feet by 24-feet by 8-feet bgs. A total of approximately 313.85-tons of contaminated soil was excavated from the area beneath the former diesel AST. In addition approximately 11.6 tons of concrete slab debris was also removed. The excavated soil and concrete was loaded into Jim Thorpe, Inc. (JT) supplied 16 wheels dump trucks and according to JT, above mentioned excavated soil and concrete debris was transported under manifest to Forward Class II Land Fill in Manteca, California.

Upon the completion of the impacted soil excavation activities, a ***TERRASEARCH, inc.*** field representative collected two (2) discrete confirmation soil samples (CB-1 and CB-2) from the

bottom of the excavation at approximately 8-feet bgs. In addition, four (4) discrete confirmation soil samples (CS-1, CS-2, CS-3 and CS-4) were also collected from the south, north, east and west walls of the excavation respectively. All six (6) discrete soil samples were collected using clean brass liners, which were completely filled, sealed with Teflon tape, capped, labeled and placed into a pre-chilled ice chest for temporary storage. The ice-chest was constantly kept at a temperature of approximately four degrees Celsius for temporary storage. All 6 confirmation soil samples were delivered under chain-of-custody documentation to McCampbell Analytical, Inc., a State-certified hazardous waste testing laboratory (Certification No. 1644) of Pittsburg, California, for analysis. Soil samples CB-1 and CB-2 were analyzed for total petroleum hydrocarbons reported as gasoline (TPHg), total extractable petroleum hydrocarbons reported as diesel and motor oil (TEPH), volatile organics (VOCs) and PCBs using EPA Methods 8015 (modified), 8260B and 8080. The four (4) discrete soil samples (CS-1, CS-2, CS-3 and CS-4) were analyzed for total extractable petroleum hydrocarbons reported as diesel (TPHd) using EPA Method 8015 (modified).

Laboratory analytical results of confirmation soil samples CB-1 (south) and CB-2 (north) reported no detectable concentrations of TPHg (less than 1.0 milligram per kilo gram [mg/Kg]); BTEX (less than 0.005 mg/Kg); TEPHd reported as diesel (less than 1.0 mg/Kg) and TEPHmo as motor oil (less than 5.0 mg/Kg); VOCs (less than 0.005 mg/Kg to less than 0.1 mg/Kg); PCBs (less than 0.025 mg/Kg).

Laboratory results of confirmation soil samples CS-1 (south wall); CS-2 (north wall); CS-3 (east wall) and CS-4 (west wall) revealed non-detectable concentrations (less than 1.0 mg/Kg) of TEPHd at the four walls of the excavation.

DATA GAPS

The following Data Gaps were recognized and addressed satisfactorily to set aside concerns of missed information:

- A total of twelve “orphaned sites” were not mapped for the database report. This data gap was filled by reviewing the location of the streets or by physically driving the neighborhood of the subject site to confirm that these orphaned sites were outside the search radius. ***TERRASEARCH, inc***. suggests the orphaned sites are not a Data Gap.

- No Chain-of-Ownership and Lien Search, was received by the preparation date of this report. However, it was filled by the EDR Environmental Lien Search Report dated June 11, 2007. This Lien Search indicated that APNs 241-240-02; -03, 241-040-04; 241-040-05 and 241-260-05 are owned by Weatherbee Properties, LLC and no environmental lien or other activity and use limitations (AULs) were found for the subject site. ***TERRASEARCH, inc***. suggests that the Chain-of-Ownership and Lien Search are not a Data Gap.

Therefore, no significant Data Gaps were identified at the site which would alter our environmental conclusions.

SUMMARY OF FINDINGS

- The subject property is located in the southern portion of San Joaquin County, in the southwestern portion of Manteca, California. The site is comprised of five adjoining parcels totaling approximately 480 acres (APNs 241-240-02; -03; 241-040-04; -05 and 241-260-05) and located at 2368, 20601 and 20611 Woodward Avenue, California. Currently the subject site is occupied by five structures, one trailer home, an almond orchard, alphalpha and oat fields, irrigation system, farming equipment, portable ASTs, an abandoned fuel pump and a considerable amount of debris. Based on the historical aerial photographic, historical topographic map, property owner interview and file review data structures existed on the eastern portion of the subject site. The subject site was and is being used for agricultural purposes (orchards and row crops) since 1968. In addition, the levee road and irrigation system were present on the subject site since at least 1968. Since the structures were constructed prior to 1978, ACM and/or LBP may be present on and/or within the construction materials.

- The subject site is bounded by East Woodward Avenue and Oakwood Shores residential development to north, Walthall Slough, an irrigation ditch and a field of seasonal crops (oats) to the south; open land and oat field to the east. South Woodward Avenue, Weatherbee Lake, a portion of Oakwood Shores development, residences, walnut orchard and a chicken farm bordered the subject site to the west. Digital photos of the site are shown on Figures 3 through 8.

- Based on the site observations a total of three small and large portable ASTs are located on the subject site. Furthermore, one partially buried AST was observed beneath a debris pile immediately west of the pole barn.

- According to Ms. Diane Wurzel interview there was a gasoline UST on the subject site during the 1950s and 1960s, which was used to fuel farm equipment. In addition, an abandoned fuel pump was observed adjacent to the northwest corner of the barn/storage structure. During our site visit and personal communication, Ms. Wurzel mentioned that the tenant removed a UST adjacent to the abandoned fuel pump approximately 15 to 20 years ago. However, Ms. Wurzel stated that no permits or soil samples were obtained during the UST removal process.

- Based on visual observations, two 55-gallon drums filled with waste-oil were observed immediately northeast of the warehouse. A few diesel and waste-oil stained soil locations were observed inside the barn/storage structures. A large amount of debris, including pesticide, insecticide and herbicide containers, motor oil and waste oil containers, partially buried AST, abandoned appliances, batteries, tires, burned car body, concrete debris, plastic and steel trash material are present on the subject site, primarily near the barn/storage and warehouse structures.

- Abandoned appliances and an empty car fuel tank were observed on the subject site in a northerly ditch located south of East Woodward Avenue.

- An on-site Gas Pipeline warning sign was observed on the eastern portion on western edge of the levee road. An abandoned gas pipeline is situated on the northeastern and southeastern portions of the property. Leaks from this former gas pipeline were not reported and are not known. In addition, hard surface areas of oily-tar driveways were observed alongside the northern and southern boundary of the barn/storage structure and were utilized as farm roads.

- Two 55-gallon drums filled with waste-oil, a few diesel and waste-oil stained soil locations inside the barn/storage structures, a large collection of debris, including pesticide, insecticide and herbicide containers (empty and full), motor oil and waste oil containers, partially buried AST beneath debris pile, abandoned appliances, batteries, tires, plastic and steel trash material are present on the subject site, primarily near the barn/storage and warehouse structures. In addition, according to the property owner Ms. Diane Wurzel interview a gasoline UST existed on the subject site during the 1950s and 1960s, which was used to fuel farm equipment. During our site visit and personal communication, Ms. Wurzel mentioned that the tenant removed a UST adjacent to the abandoned fuel pump approximately 15 to 20 years ago. However, Ms. Wurzel stated that no permits or soil samples were obtained during the UST removal process. Based on these findings ***TERRASEARCH, inc.*** recommended the performance of Phase II ESA on the site, which will cover debris piles, stained soils, former UST area and structures. These areas will be tested for organochloride and metal pesticides, petroleum hydrocarbon constituents, CAM 17 Metals, PCBs, ACMs and LBP. In addition, the performance of drilling along the abandoned gas pipeline was recommended. The soil and groundwater samples from the pipeline should be analyzed for TPHg, TEPHmo; TEPHd, VOCs and lead.

- A Phase II ESA (Reference 3), which was performed by ***TERRASEARCH, inc***., indicated organochloride pesticides, herbicides and metals arsenic, lead and/or mercury did not impact the surficial soil at the subject site and the three debris stockpiles do not contain hazardous wastes and do not pose a significant environmental risk to the subject site. TEPHd was detected within groundwater collected near the abandoned gas pipeline; however, no detectable concentrations of TPHg, TEPHmo or VOCs were detected in any soil samples or groundwater samples collected from the borings. Minor leaking may have occurred in the immediate vicinity of the abandoned gas pipeline; however, it appeared the leaking was not significant and did not warrant further environmental assessment. Elevated concentrations of petroleum-hydrocarbons, PCBs as Aroclor 1260 and moderate concentrations of VOCs were detected near the AST and stained soil area (north of the warehouse) in both soil and groundwater samples. Elevated concentrations of beta- and gamma-BHC (organochloride pesticides) were detected south of the residence and may indicate former pesticide storage and/or pesticide mixing areas. TPHg, TEPHd, TEPHmo and Aroclor 1260 were detected above PRGs and ESLs and will require remediation; however, the lateral and vertical extent of these chemicals is not known and further environmental assessment is warranted. A verbal recommendation was made on March 18, 2008 to contact the central Vally Water Quality Control Board regarding the preliminary findings and soil excavating activities. We recommend preparing a letter report of findings and excavation

activities for the client to submit to the Central Valley Water Quality Control Board as a fallw up to the initial report.

- In March of 2008, ***TERRASEARCH, inc***. conducted remediation of the soil located beneath the former AST location north of warehouse. At the direction of the client the soil was excavated and transported by JT supplied 16 wheels dump trucks to Forward Class II Land Fill in Manteca, California. PID was used to establish the vertical and lateral extent of the excavation, based on the readings reaching nearly zero. Upon the completion of excavation confirmation samples were collected from the bottom and walls of the excavation. Based on the laboratory analytical results of confirmation soil samples no petroleum hydrocarbons and BTEX and PCBs were detected in any of the confirmatory soil samples iondication that all impacted soil has been removed. Discolored soil at the bottom of the excavation was targeted for sampling and analysis. This soil sample indicated non-detect for all constituents analyzed. Groundwater was not encountered and is estimated at two feet or more beneath the bottom of the excavation.

- A PG & E power line, utility boxes and buried cable warning signs are present to the immediate north and west of subject site along the south and east sides of Woodward Avenue. PG & E power line with associated poles and a few pole mounted transformers are present on the subject site, which are located around the structures; near the on-site southerly and westerly located water pump stations. However, no evidence of leak was observed beneath the pole mounted transformers. No evidence of polychlorinated biphenyls (PCBs) was observed on the subject site.

- The United States Geological Survey (USGS) considers this a low exposure potential area for radon. No archeological findings, pits, ponds or noxious odors were noted at the subject site.

- Based on EDR information dated April 8 and 11, 2008, no secondary contamination source was reported within 1-mile of the subject site. No USGS water-well was identified within a 0.25-mile radius of the subject site. Twelve (12) orphan sites were reported within the vicinity of the subject site, which are located outside the search area. Therefore, the possibility of the groundwater contamination beneath the subject site is highly remote.

SITE-SPECIIFC RECOMMENDATIONS

In view of the above findings, it is the opinion of ***TERRASEARCH, inc***., that further environmental assessment of the subject site **is warranted**, and should include the following prior to development of the land:

- Retaining the services of State-certified LBP and asbestos professional(s) to perform a LBP and ACM survey on the structures for testing and confirmation of LBP and ACM within and around the structures.

- In order to address findings of residual organochloride pesticides in soil in the northern portion near the residence. A near surface soil sampling plan should be initiated. The proposed plan would consist of 12 hand-augered borings advanced in the vicinity of boring B1 and B2 and the residence to approximately 2 feet bgs. Soil samples will be collected at 1 and 2 feet bgs for laboratory analysis. The 24 soil samples collected from the hand-augered borings will be capped, labeled and placed within a pre-chilled ice-chest for temporary storage and delivered under chain-of-custody documentation to a State-certified hazardous waste testing laboratory for analysis. The soil samples will be analyzed for organochloride pesticides using EPA Method 8080.

- Regarding suspected groundwater contamination from beneath soil excavation north of the warehouse, ***TERRASEARCH, inc***., recommends beginning groundwater monitoring in conjunction with consultation with Central Valley Regional Water Quality Control Board.

- All debris items, including the burned car body, chemical containers (pesticide, insecticide, herbicide, motor oil, gasoline and waste oil) and two waste-oil drums, all ASTs, fuel pump, abandoned appliances and furniture, batteries, tires, car and truck bodies, concrete debris and other trash materials present on the subject site must be removed and properly disposed in accordance with local, County and State regulations.

- Existing irrigation system consisted of concrete and PVC pipes, concrete debris, stand pipes, concrete structures, pumping stations and valves should be properly located, removed and backfilled in accordance with local, county and state requirements.

GENERAL RECOMMENDATIONS

- Due to the age of the on-site structures septic tanks and water-wells may be present around the structures. If any exists, then care should be taken to carefully remove the septic tanks and associated leach fields.

- If any water-well is located and not needed for future use, should be properly destroyed in accordance with local, county and state regulations.

- The presence of any unusual odor, suspicious materials during the mass grading operations should be notified to the Soil Engineer and Property Owner immediately.

- If any pipe that may lead to any underground fuel storage tank is identified during grading and/or demolition operations, the Soil Engineer and Environmental Engineer should be notified immediately for further evaluation. Further, if any PVC, concrete and/or metal pipes are identified during mass grading operations, the Soil Engineer and Environmental Engineer should be notified immediately for further evaluation.

- During grading activities of the property, soil technicians and operators must be aware of any USTs, buried debris, or other potential adverse environmental condition which may be

discovered on the property. If any one of these conditions is encountered, then the Soil Engineer must be notified and the specific condition appropriately remedied in accordance with the local, county and state requirements.

LIMITATIONS

This Updated Phase I Environmental Site Assessment complies with the US EPA 40 CFR 312 "Standards and Practices for All Appropriate Inquiries" referred to as the "AAI Rule" that was finalized in November of 2005 and conforms to the recommended guidelines established by ASTM designation E1527-2005 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. This report has been prepared for the specific application to this project in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in this area. This report contains information reported to ***TERRASEARCH, inc***., by other sources, accordingly, and errors or omissions may be present that ***TERRASEARCH, inc***. cannot be responsible for. The findings of this report apply to the present condition of the subject site only (as of April 10, 2008); the opinions expressed herein are subject to revision in light of new information relevant to the site and/or in its immediate surroundings. Results from Phase I environmental investigations are based on surficial evidence and public records and databases only. Subsurface conditions of the site cannot be properly evaluated without performing a subsurface environmental investigation and actually testing of the soil, and groundwater for potential contaminants.

All deliverables specified in the work orders (e.g.: drawings and specification, studies, plans, reports) and all material provided by ***TERRASEARCH, inc***. to the Client are instruments of service and as such is the property of ***TERRASEARCH, inc*** and that ***TERRASEARCH, inc*** retains copyright authority and any reuse must be specifically authorized by ***TERRASEARCH, inc***. Clients shall be permitted to retain copies, including reproduced copies for the specifically stated use of the document and for information, reference and record keeping. The drawings and specifications, studies, plans, reports, and any other materials resulting from ***TERRASEARCH, inc***.'s work under this Agreement are not intended or represented to be suitable for reuse by Client or others on extensions or modifications of this Project or any other project. Reuse of reports, or other materials, by Client or others without written permission, remuneration, and/or adaptation by ***TERRASEARCH, inc***. for the specific purpose intended shall be at the user's sole risk, without liability on ***TERRASEARCH, inc***. 's part.

TERRASEARCH, inc. is not and will not be interpreted to be a generator, storer, transporter or disposer of hazardous waste, hazardous substance, pollutants or contaminants found or identified at the site. ***TERRASEARCH, inc***. shall have no responsibility for the transportation, storage, treatment, or disposition of contaminated waste materials of any kind, whether or not directly or indirectly generated from ***TERRASEARCH, inc***.'s performance of the Work hereunder. Even where ***TERRASEARCH, inc***. is directed to assist with disposal arrangements, Client shall be responsible for and make the final determination regarding the location and methods for disposal of any waste materials.

In the event that it is alleged or determined that consultant has undertaken or assumed any of the activities enumerated in the preceding paragraph, Client assumes the risks of and agrees to indemnify, defend and hold ***TERRASEARCH, inc***. harmless from any and all claims, damages, suits, losses, or expenses (including attorneys' fees and other costs of defense) in any way arising from such activities.

Client warrants and guarantees that title to all hazardous waste, hazardous substances, pollutants, and contaminants originating at or removed from the site of the Work by consultant will remain in and with the owner of the site. Client further warrants and guarantees that it will not challenge the ownership of the substances enumerated above by any means, including suits in state or federal court, arbitration, or actions in any other forums.

Client is responsible for communicating to ***TERRASEARCH, inc.*** all material information in its possession about the subject site, including all material written and non-written information. This information includes but is not limited to chemical contamination on the site, prior uses of the site, individuals who may have knowledge of the site's history and names and address of all prior owners.

Client shall fully indemnify, defend and hold harmless ***TERRASEARCH, inc.*** (including its officers, employees, shareholders, and directors) from and against all suits, claims, judgments, losses, expenses, costs, including reasonable attorney's fees and expert costs, interest, penalties and judgments with respect to breaches of this Agreement by Client and negligence of Client, its contractors, sub-contractors and other design professionals. These indemnity rights shall survive the termination or completion of ***TERRASEARCH, inc.***'s services pursuant to this Agreement.

INFORMATION SOURCES

ASTM, 2005. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*: ASTM Standards E1527-05.

City of Manteca Building and Planning Department.

City of Manteca Public Works Department.

City of Manteca Fire Prevention Department (CMFPD)

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Environmental Data Resources, Inc. (EDR) Aerial Photography Print Service dated April 8, 2008.

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San Joaquin County Department of Agriculture (SJCDA).

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United States Geological Survey, 7.5-Minute Topographic Maps, Lathrop Quadrangle, dated 1952, 1968, 1976, 1987, 1994 and 1996, Scale 1:24,000.

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Historical Documents

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George H. Tinkham, 1923, History of San Joaquin County, California with Biographical Sketches

Kristen Santos, Phyllis Soderstorm, Thea Sountag Harris and Monica Harris, 2003 - Images of America, Manteca

Hohenthal, Caswell and others, 1972 - Stream in a Thirsty Land

ENVIRONMENTAL PROFESSIONAL QUALIFICATION

This Phase I Environmental Site Assessment was performed by Mr. A. Wakil Mateen, a qualified Environmental Professional as defined in 40 CFR Part 312.10.

Mr. Mateen holds a Baccalaureate degree from Kabul University Polytechnic Institute Afghanistan in Geology and Mining (an accredited institution of higher education) and a Masters of Science degree from University Moscow Russia (an accredited institution of higher education) in the discipline of Engineering Geology. Mr. Mateen holds a valid Registered Environmental Assessor license in the State of California (07771).

Mr. Mateen has over 10 years of environmental, geological and hydrogeological experience, more specifically in environmental assessments including Phase I and Phase II ESAs, which exceeds the regulatory requirement of three years of relevant experience.

Mr. Mateen remains current in his field and has received 1.6 Continuing Education Units (CEUs) and 12 Professional Development Hours (PDHs) in the previous 12 month period. He is also compliant with OSHA HAZWOPER 8-hour refresher requirements, including medical surveillance.



As required in 40 CFR 312.27, Mr. Mateen directly conducted the Field Visit including the visual inspection of the Site, adjacent properties and surrounding areas. The photo above was taken at the site on April 10, 2008.

"All Appropriate Inquiry" was also conducted by Mr. Mateen as were all interviews. The record Search, historical photo and topographic map search were conducted by EDR, Inc.

The findings, opinions and recommendations of this Phase I Environmental Site Assessment are those of ***TERRASEARCH, inc.*** as formulated by Mr. Mateen.

Should you have any questions or need further information, please do not hesitate to call upon us at your convenience.

Reviewed by:

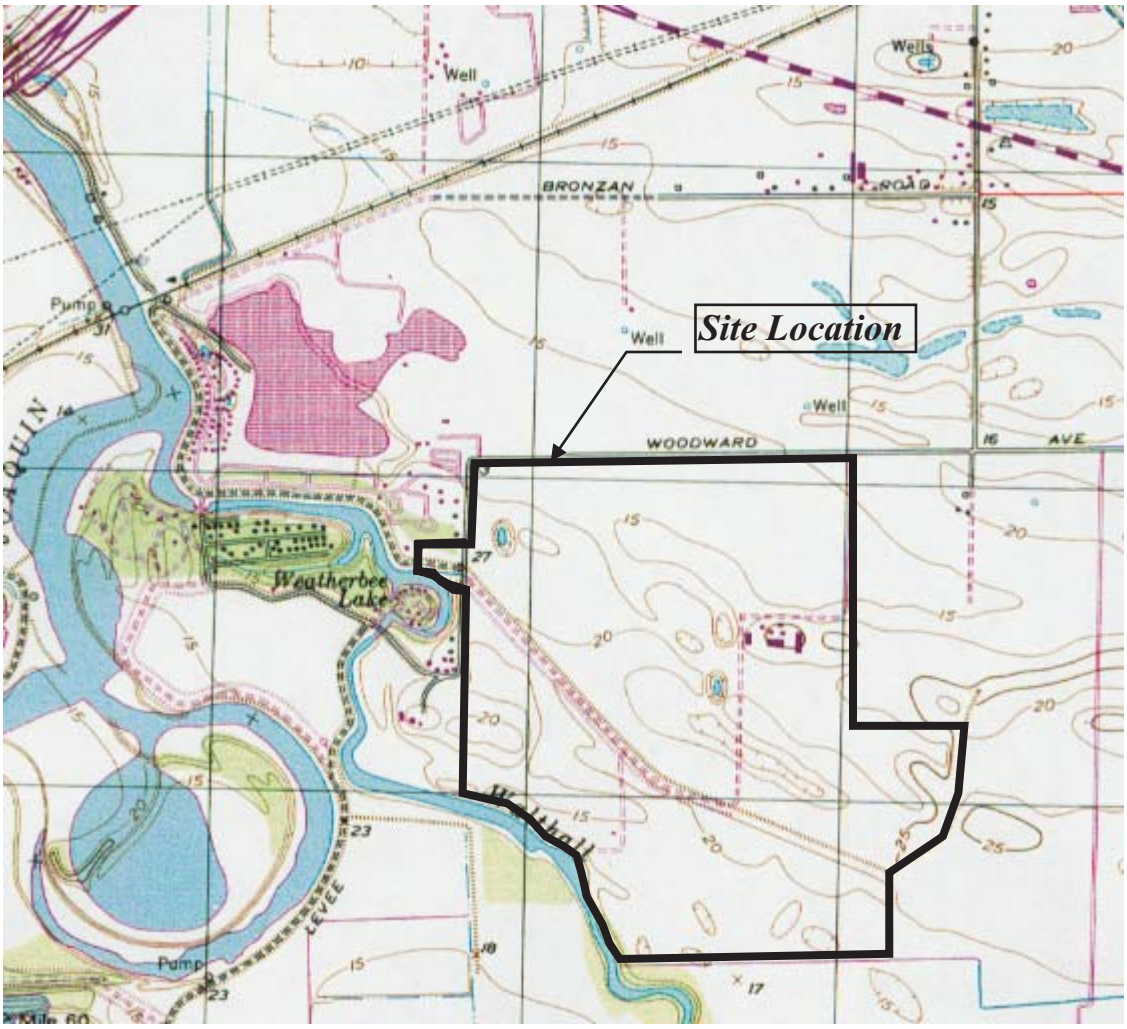


Simon Makdessi, P.E., G.E.
Senior Engineer/Vice President

Very truly yours,
TERRASEARCH, inc.

A. Wakil Mateen, R.E.A. I
Environmental Specialist

Copies: 3 to Weatherbee Properties, LLC



Source: USGS, Lathrop Quadrangle, 7.5-Minute, 1:24,000 (1996)

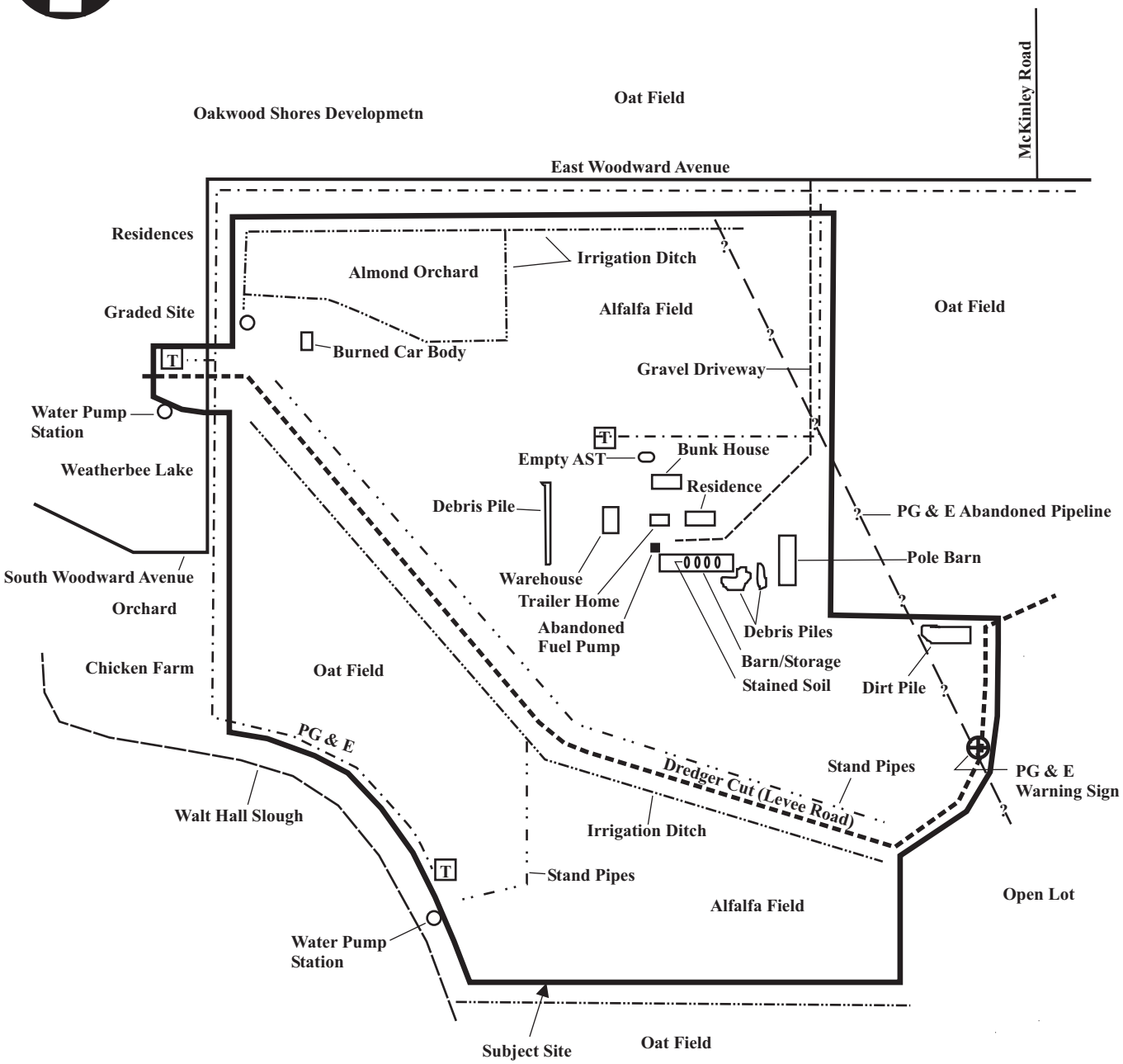
VICINITY MAP

Environmental • Geotechnical • Special Inspections • Materials Testing
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257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-8862

UPDATED PHASE I ENVIRONMENTAL SITE ASSESSMENT
20601, 20611 AND 2368 WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	AWM

FIGURE
1



Legend:

T - Pole Mounted Transformers

AST - Above Ground Storage Tanks

0 - Stained Soil Locations at Storage/barn

SITE PLAN

Environmental • Geotechnical • Special Inspections • Materials Testing

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20601, 20611 AND 2368 WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	SCALE
11515.E1	04/2008	N.T.S.

FIGURE 2

SITE PHOTOGRAPHS



Figure 3A: Viewing west over the northern portion of the subject site and East Woodward Avenue.



Figure 3B: Viewing from the northeast corner across the subject site.

SITE PHOTOGRAPHS

Environmental • Geotechnical • Special Inspections • Materials Testing
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UPDATED PHASE I ENVIRONMENTAL SITE ASSESSMENT
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MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	AWM

FIGURE 3



Figure 4A: Viewing south, a field of seasonal crops (oats) immediately east of the subject site.



Figure 4B: Viewing over a Levee Road, located on the central portion of the subject site.

SITE PHOTOGRAPHS

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
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MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
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FIGURE
4



Figure 5A: Farming equipment and a pole barn on the eastern portion of the subject site.



Figure 5B: The northwestern portion of the site is occupied by almond orchard.

SITE PHOTOGRAPHS

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FIGURE
5



Figure 6A: Discarded items on the subject site, immediately west of pole barn.



Figure 6B: A single story residence on the northern portion of the subject site.

SITE PHOTOGRAPHS

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FIGURE 6



Figure 7A: A warehouse on the central northern portion of the subject site.



Figure 7B: Two 55-gallon drums containing waste oil adjacent to the north side of warehouse.

SITE PHOTOGRAPHS

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MANTECA, CALIFORNIA

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FIGURE 7



Figure 8A: Viewing southeast, across the southeastern portion of the site.



Figure 8B: A gas pipeline warning sign on the eastern boundary near Levee Road.

SITE PHOTOGRAPHS

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FIGURE
8



Figure 9A: A view of the central portion of the subject site.



Figure 9B: Walthall Slough adjacent to the southern boundary of the subject site.

SITE PHOTOGRAPHS

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-6662

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MANTECA, CALIFORNIA

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FIGURE 9



Figure 10A: Viewing over the southern portion of the subject site.



Figure 10B: A chicken farm on the adjacent property to the west.

SITE PHOTOGRAPHS

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
TERRASEARCH INC.
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MANTECA, CALIFORNIA

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FIGURE 10

EDR, INC. RADIUS REPORT



The EDR Radius Map
with GeoCheck®

Trails of Manteca/Project #11515.E2
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 2190076.2s

April 08, 2008

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

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

2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

COORDINATES

Latitude (North):	37.773100 - 37° 46' 23.2''
Longitude (West):	121.279340 - 121° 16' 45.6''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651543.1
UTM Y (Meters):	4181829.5
Elevation:	17 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37121-G3 LATHROP, CA
Most Recent Revision:	1994

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
Proposed NPL Proposed National Priority List Sites
Delisted NPL National Priority List Deletions
NPL LIENS Federal Superfund Liens
CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP CERCLIS No Further Remedial Action Planned
LIENS 2 CERCLA Lien Information
CORRACTS Corrective Action Report
RCRA-TSDF RCRA - Transporters, Storage and Disposal
RCRA-LQG RCRA - Large Quantity Generators

EXECUTIVE SUMMARY

RCRA-SQG RCRA - Small Quantity Generators
RCRA-CESQG RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen RCRA - Non Generators
US ENG CONTROLS Engineering Controls Sites List
US INST CONTROL Sites with Institutional Controls
ERNS Emergency Response Notification System
HMIRS Hazardous Materials Information Reporting System
DOT OPS Incident and Accident Data
US CDL Clandestine Drug Labs
US BROWNFIELDS A Listing of Brownfields Sites
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
LUCIS Land Use Control Information System
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
ODI Open Dump Inventory
DEBRIS REGION 9 Torres Martinez Reservation Illegal Dump Site Locations
MINES Mines Master Index File
TRIS Toxic Chemical Release Inventory System
TSCA Toxic Substances Control Act
FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS FIFRA/TSCA Tracking System Administrative Case Listing
SSTS Section 7 Tracking Systems
ICIS Integrated Compliance Information System
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
RADINFO Radiation Information Database
FINDS Facility Index System/Facility Registry System
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

HIST Cal-Sites Historical Calsites Database
CA BOND EXP. PLAN Bond Expenditure Plan
SCH School Property Evaluation Program
Toxic Pits Toxic Pits Cleanup Act Sites
SWF/LF Solid Waste Information System
CA WDS Waste Discharge System
WMUDS/SWAT Waste Management Unit Database
Cortese "Cortese" Hazardous Waste & Substances Sites List
SWRCY Recycler Database
LUST Geotracker's Leaking Underground Fuel Tank Report
CA FID UST Facility Inventory Database
SLIC Statewide SLIC Cases
UST Active UST Facilities
HIST UST Hazardous Substance Storage Container Database
AST Aboveground Petroleum Storage Tank Facilities
LIENS Environmental Liens Listing
SWEEPS UST SWEEPS UST Listing
CHMIRS California Hazardous Material Incident Report System
Notify 65 Proposition 65 Records
DEED Deed Restriction Listing
VCP Voluntary Cleanup Program Properties

EXECUTIVE SUMMARY

DRYCLEANERS Cleaner Facilities
WIP Well Investigation Program Case List
CDL Clandestine Drug Labs
RESPONSE State Response Sites
HAZNET Facility and Manifest Data
AIRS Emissions Inventory Data
HAULERS Registered Waste Tire Haulers Listing
ENVIROSTOR EnviroStor Database

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 not identified.

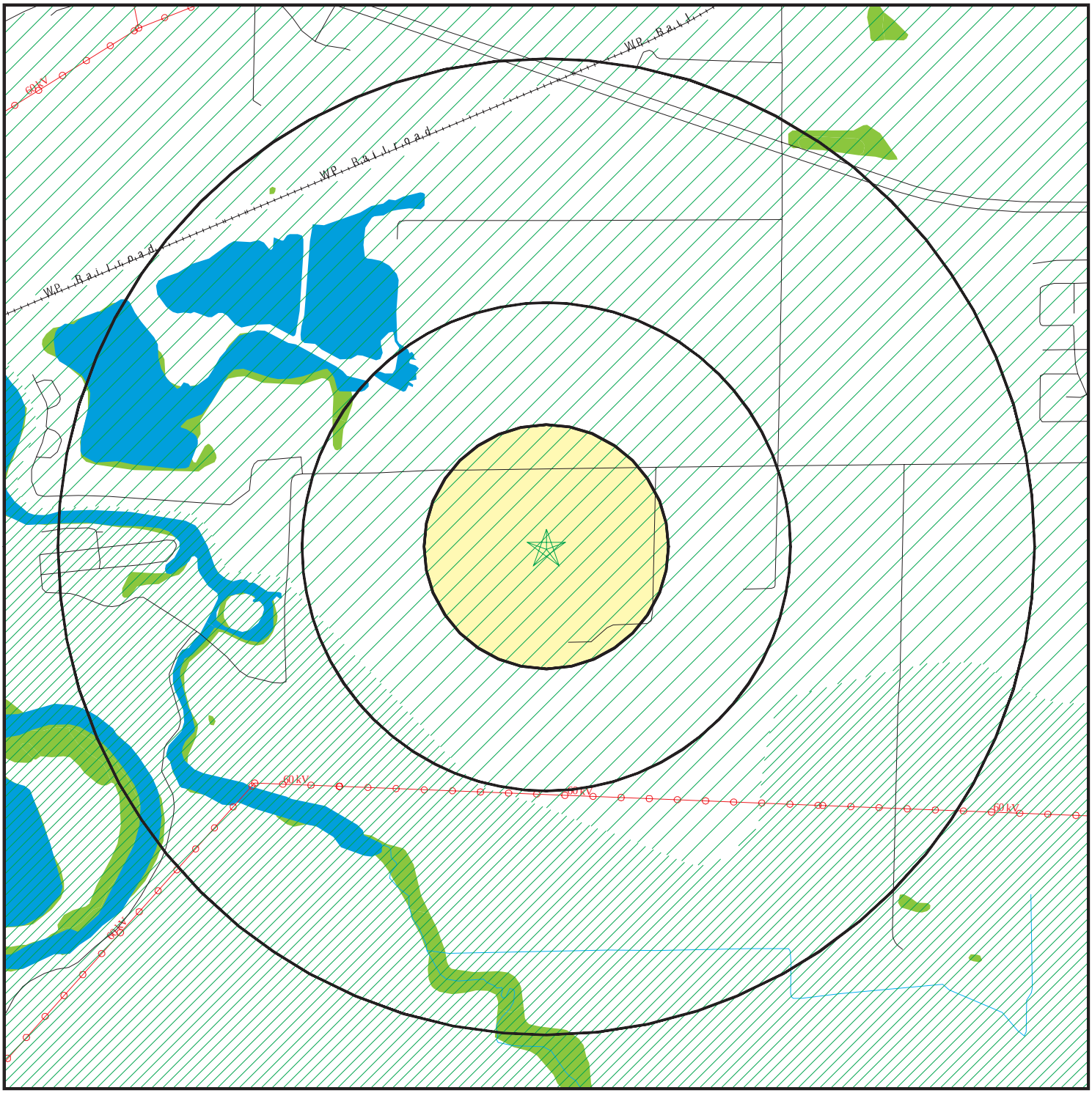
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

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

Site Name	Database(s)
WHISKEY SLOUGH ROAD 1/8 MILE NORTH OF CITY OF HOLT	CHMIRS, SLIC
MANTECA UNIFIED SCHOOL DI	Cortese
MANTECA WELLS WATER CORP-PRIMARY	UST
MANTECA SERVICE CENTER	AST
S. SAN JOAQUIN IRRIGATION DIST	AST
CITY OF MANTECA	HAZNET
CITY OF MANTECA WATER WELL #12	HAZNET
MANTECA USD - NILE GARDENS ELEMENTARY	HAZNET
28906 SO MANTECA ROAD	HMIRS
SECTION OF MANTECA AND RIVER RD.	ERNS
CITY OF MANTECA	AIRS
CITY OF MANTECA	AIRS

OVERVIEW MAP - 2190076.2s



- 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

0 1/4 1/2 1 Miles

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

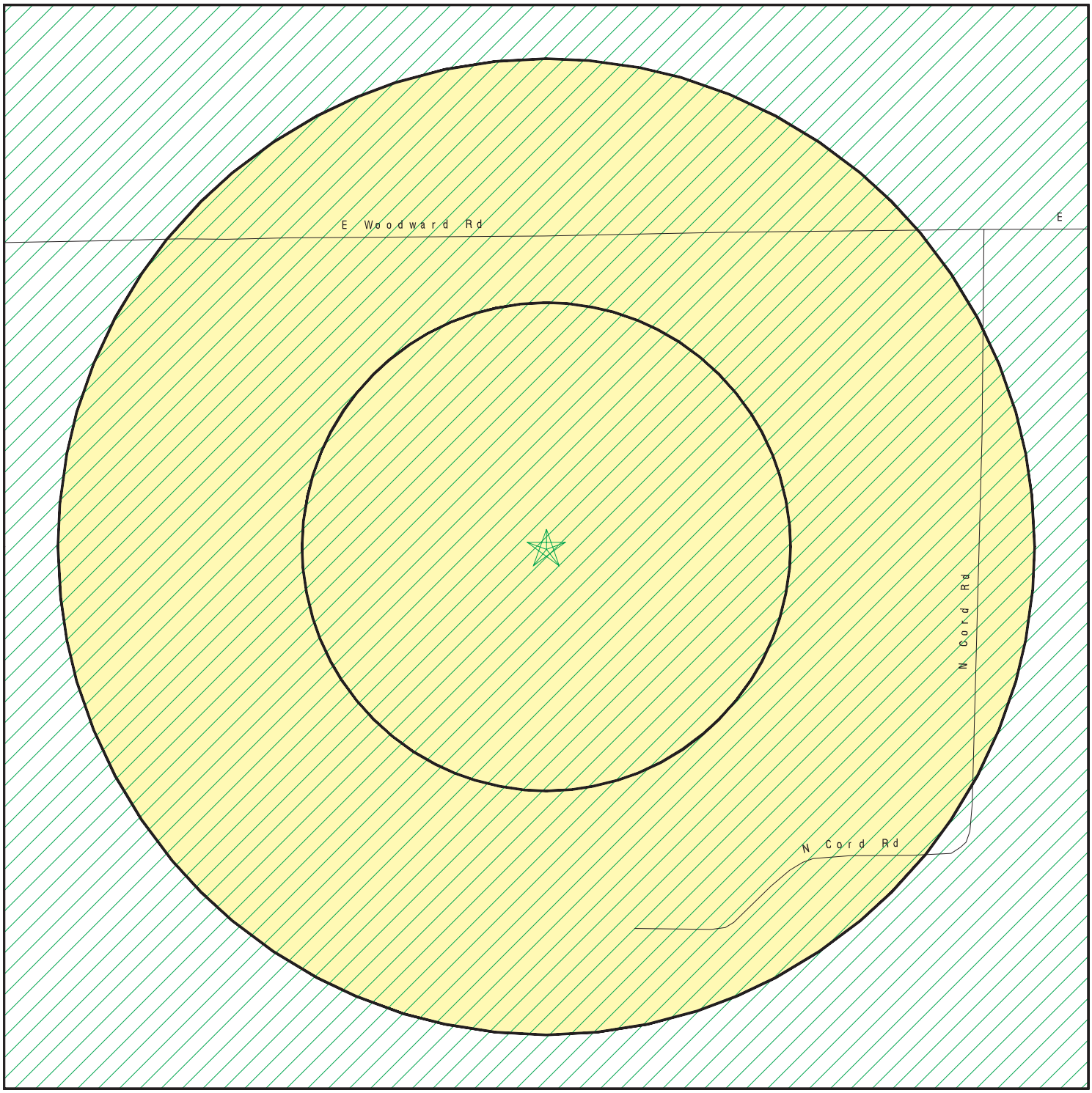
N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Trails of Manteca/Project #11515.E2	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Wakil Mateen
LAT/LONG:	37.7731 / 121.2793	INQUIRY #:	2190076.2s
		DATE:	April 08, 2008 7:18 pm

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DETAIL MAP - 2190076.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Trails of Manteca/Project #11515.E2	CLIENT: Terrasearch Inc.
ADDRESS: 2368 East Woodward Avenue Manteca CA 95337	CONTACT: Wakil Mateen INQUIRY #: 2190076.2s
LAT/LONG: 37.7731 / 121.2793	DATE: April 08, 2008 7:18 pm

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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
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA-TSDF		0.500	0	0	0	NR	NR	0
RCRA-LQG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
RCRA-NonGen		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
US CDL		TP	NR	NR	NR	NR	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
HIST Cal-Sites		1.000	0	0	0	0	NR	0
CA BOND EXP. PLAN		1.000	0	0	0	0	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
SWF/LF		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
CA WDS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
LIENS		TP	NR	NR	NR	NR	NR	0
SWEEPS UST		0.250	0	0	NR	NR	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
DEED		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RESPONSE		1.000	0	0	0	0	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
HAULERS		TP	NR	NR	NR	NR	NR	0
ENVIROSTOR		1.000	0	0	0	0	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MANTECA	S103957090	CITY OF MANTECA	CORPORATION YARD	95337	HAZNET
MANTECA	S107142311	CITY OF MANTECA WATER WELL #12	1170 HOLT LN	95337	HAZNET
MANTECA	A100226308	MANTECA SERVICE CENTER	10901 E. HWY. 120		AST
MANTECA	A100226524	S. SAN JOAQUIN IRRIGATION DIST	11011 E. HWY. 120		AST
MANTECA	S104857260	MANTECA UNIFIED SCHOOL DI	2901 LOUISE	95337	Cortese
MANTECA	2005702905	28906 SO MANTECA ROAD	28906 SO MANTECA ROAD		HMIRS
MANTECA	S104566249	MANTECA USD - NILE GARDENS ELEMENTARY	5700 E NILE AVE	95337	HAZNET
MANTECA	U004024304	MANTECA WELLS WATER CORP-PRIMARY	220 W OAK ST	95337	UST
MANTECA	90170150	SECTION OF MANTECA AND RIVER RD.	SECTION OF MANTECA AND RIVER RD.		ERNS
MANTECA	S106920533	CITY OF MANTECA	VARIOUS LOCATIONS	95337	AIRS
MANTECA	S106920526	CITY OF MANTECA	376 VICTORY LANE	95337	AIRS
SAN JOAQUIN COUNTY	S105637094		WHISKEY SLOUGH ROAD 1/8 MILE NORTH OF CITY OF HOLT		CHMIRS, SLIC

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
Date Data Arrived at EDR: 02/08/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 38

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
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 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

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
Date Data Arrived at EDR: 02/04/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 42

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

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
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
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 01/09/2008
Date Data Arrived at EDR: 02/05/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 15

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/20/2008
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
Date Data Arrived at EDR: 12/06/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 76

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/17/2008
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
Date Data Arrived at EDR: 03/07/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2007
Date Data Arrived at EDR: 12/18/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/03/2008
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.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 01/18/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/31/2008
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: 01/18/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/31/2008
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
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 54

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/23/2008
Next Scheduled EDR Contact: 04/21/2008
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: 10/31/2007
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 60

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

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

Date of Government Version: 02/14/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 22

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
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.

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: 01/03/2008
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 03/10/2008
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: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
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.

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: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
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: 12/28/2007
Date Data Arrived at EDR: 12/28/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 27

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: 11/20/2007
Date Data Arrived at EDR: 01/03/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 48

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.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 69

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: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/15/2008
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 01/30/2008
Number of Days to Update: 8

Source: EPA/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: 01/15/2008
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: 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.

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: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
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: 07/27/2007
Date Data Arrived at EDR: 08/13/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 02/07/2008
Next Scheduled EDR Contact: 04/14/2008
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: 02/07/2008
Next Scheduled EDR Contact: 05/05/2008
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: 01/29/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/31/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

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: 01/04/2008
Date Data Arrived at EDR: 01/10/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 41

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/31/2008
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
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 03/03/2008
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
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/13/2008
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
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
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
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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: 02/27/2008
Next Scheduled EDR Contact: 02/25/2008
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: 02/11/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

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

Date of Government Version: 12/12/2007
Date Data Arrived at EDR: 12/13/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 63

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.

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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 01/09/2008
Next Scheduled EDR Contact: 04/07/2008
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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 02/05/2008
Next Scheduled EDR Contact: 05/05/2008
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, Calveras, 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: 01/01/2008
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 04/03/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Quarterly

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: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 01/09/2008
Next Scheduled EDR Contact: 04/07/2008
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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

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: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/09/2008
Next Scheduled EDR Contact: 04/07/2008
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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 510-286-0457
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: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Varies

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: 03/03/2008
Next Scheduled EDR Contact: 05/19/2008
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: 10/02/2007
Date Data Arrived at EDR: 10/03/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 35

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: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
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: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 30

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 01/09/2008
Next Scheduled EDR Contact: 04/07/2008
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: 12/26/2007
Date Data Arrived at EDR: 12/28/2007
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/24/2008
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
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 02/06/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/05/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007
Date Data Arrived at EDR: 11/27/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

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
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
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).

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: 02/19/2008
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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/03/2008
Date Data Arrived at EDR: 01/04/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 41

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: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
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: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

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

Date of Government Version: 10/25/2007
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 22

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 01/23/2008
Next Scheduled EDR Contact: 04/21/2008
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: 09/30/2007
Date Data Arrived at EDR: 10/15/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 04/21/2008
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: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
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: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
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: 01/18/2008
Next Scheduled EDR Contact: 04/14/2008
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 identifes 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.

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: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/12/2008
Date Data Arrived at EDR: 02/14/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 29

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Varies

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: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
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: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

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
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

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
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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: 12/21/2007
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
No description is available for this data

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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
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: 303-312-6137
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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).

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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
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: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
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: 01/16/2008
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 28

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 02/04/2008
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 12/17/2007
Date Data Arrived at EDR: 12/18/2007
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 52

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/04/2008
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.

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: 02/19/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/29/2007
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 23

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/14/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

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: 05/30/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Annually

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: 02/25/2008
Next Scheduled EDR Contact: 05/12/2008
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: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
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: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 29

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: 04/07/2008
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: 12/03/2007
Date Data Arrived at EDR: 12/19/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 57

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: 12/03/2007
Date Data Arrived at EDR: 12/21/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 55

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

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 12/03/2007
Date Data Arrived at EDR: 12/19/2007
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 51
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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 02/27/2008
Next Scheduled EDR Contact: 04/28/2008
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: 02/27/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

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: 12/28/2007
Date Data Arrived at EDR: 12/28/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 48

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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 08/22/2007
Date Data Arrived at EDR: 10/03/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 35

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 04/02/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite 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

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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/09/2008
Date Data Arrived at EDR: 01/11/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 34
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: 02/01/2008
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 Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Varies

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

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

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 03/03/2008
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: 09/24/2007
Date Data Arrived at EDR: 10/23/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 15

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/24/2008
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: 01/07/2008
Date Data Arrived at EDR: 01/30/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 9

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/24/2008
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
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 23

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/04/2007
Date Made Active in Reports: 05/24/2007
Number of Days to Update: 20

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/31/2008
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.

Date of Government Version: 11/26/2007
Date Data Arrived at EDR: 01/07/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 38

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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 11/26/2007
Date Data Arrived at EDR: 01/07/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 38

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: 12/26/2007
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 30

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/09/2008
Next Scheduled EDR Contact: 04/07/2008
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: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
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

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: 11/26/2007
Date Data Arrived at EDR: 11/29/2007
Date Made Active in Reports: 02/05/2008
Number of Days to Update: 68

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/28/2008
Next Scheduled EDR Contact: 05/26/2008
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
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 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

TRAILS OF MANTECA/PROJECT #11515.E2
2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

TARGET PROPERTY COORDINATES

Latitude (North):	37.77310 - 37° 46' 23.2''
Longitude (West):	121.27934 - 121° 16' 45.6''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651543.1
UTM Y (Meters):	4181829.5
Elevation:	17 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37121-G3 LATHROP, CA
Most Recent Revision:	1994

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).

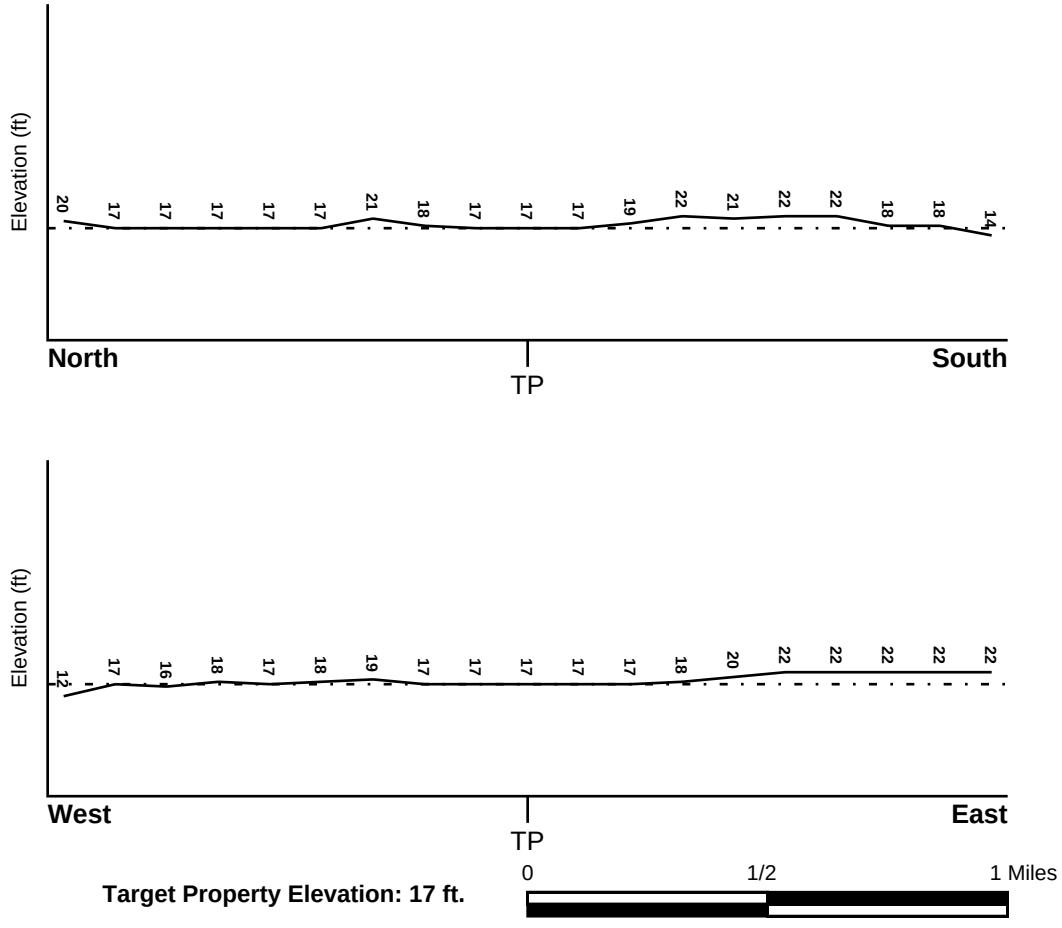
TOPOGRAPHIC INFORMATION

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 North

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 17 ft.

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	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0602990595C

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LATHROP	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.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
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

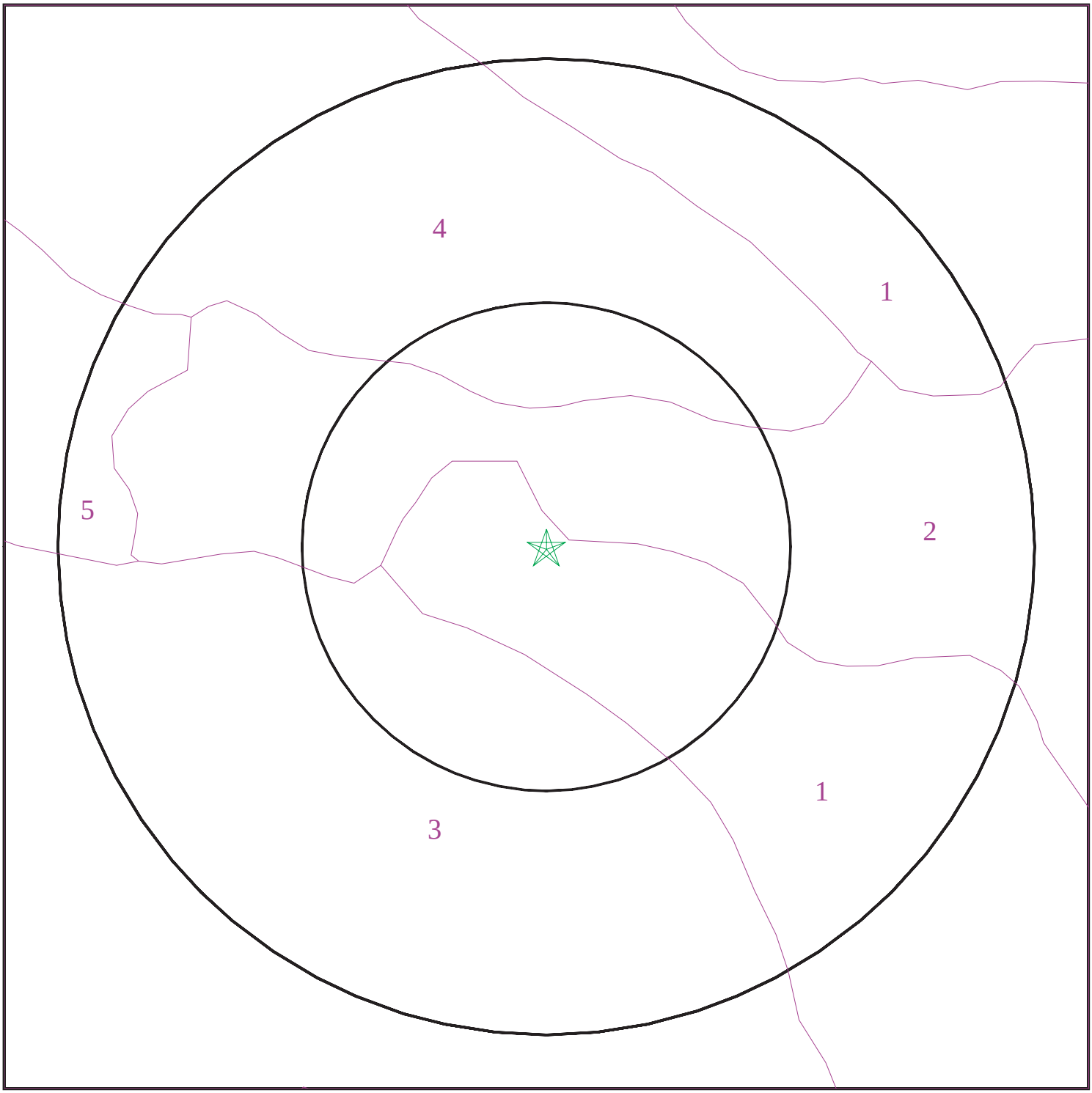
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed 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 - 2190076.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Trails of Manteca/Project #11515.E2	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Wakil Mateen
LAT/LONG:	37.7731 / 121.2793	INQUIRY #:	2190076.2s
		DATE:	April 08, 2008 7:18 pm

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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: DELLO

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: Very poorly 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							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy sand	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: 141 Min: 42	Max: 8.4 Min: 6.6
2	7 inches	59 inches	sand	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: 141 Min: 42	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: TINNIN

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	27 inches	loamy coarse 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: 8.4 Min: 6.6
2	27 inches	53 inches	loamy coarse 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: 8.4 Min: 6.6
3	53 inches	74 inches	loamy coarse 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: 8.4 Min: 6.6

Soil Map ID: 3

Soil Component Name: COLUMBIA

Soil Surface Texture: fine 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: Somewhat poorly 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							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	fine 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: 42 Min: 14	Max: 7.8 Min: 6.1
2	11 inches	59 inches	stratified sand to silt 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: 42 Min: 14	Max: 7.8 Min: 6.1

Soil Map ID: 4

Soil Component Name: GUARD

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 152 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 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: 1.4 Min: 0.42	Max: 8.4 Min: 7.9
2	14 inches	72 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: 1.4 Min: 0.42	Max: 8.4 Min: 7.9

Soil Map ID: 5

Soil Component Name: MERRITT

Soil Surface Texture: silty clay 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: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 153 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	silty 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%), silt.	Max: 14 Min: 4	Max: 9 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	16 inches	48 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 9 Min: 7.9
3	48 inches	59 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 9 Min: 7.9

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

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS3222572	1/4 - 1/2 Mile NNE
3	USGS3222758	1/4 - 1/2 Mile ESE
8	USGS3222717	1/2 - 1 Mile SE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

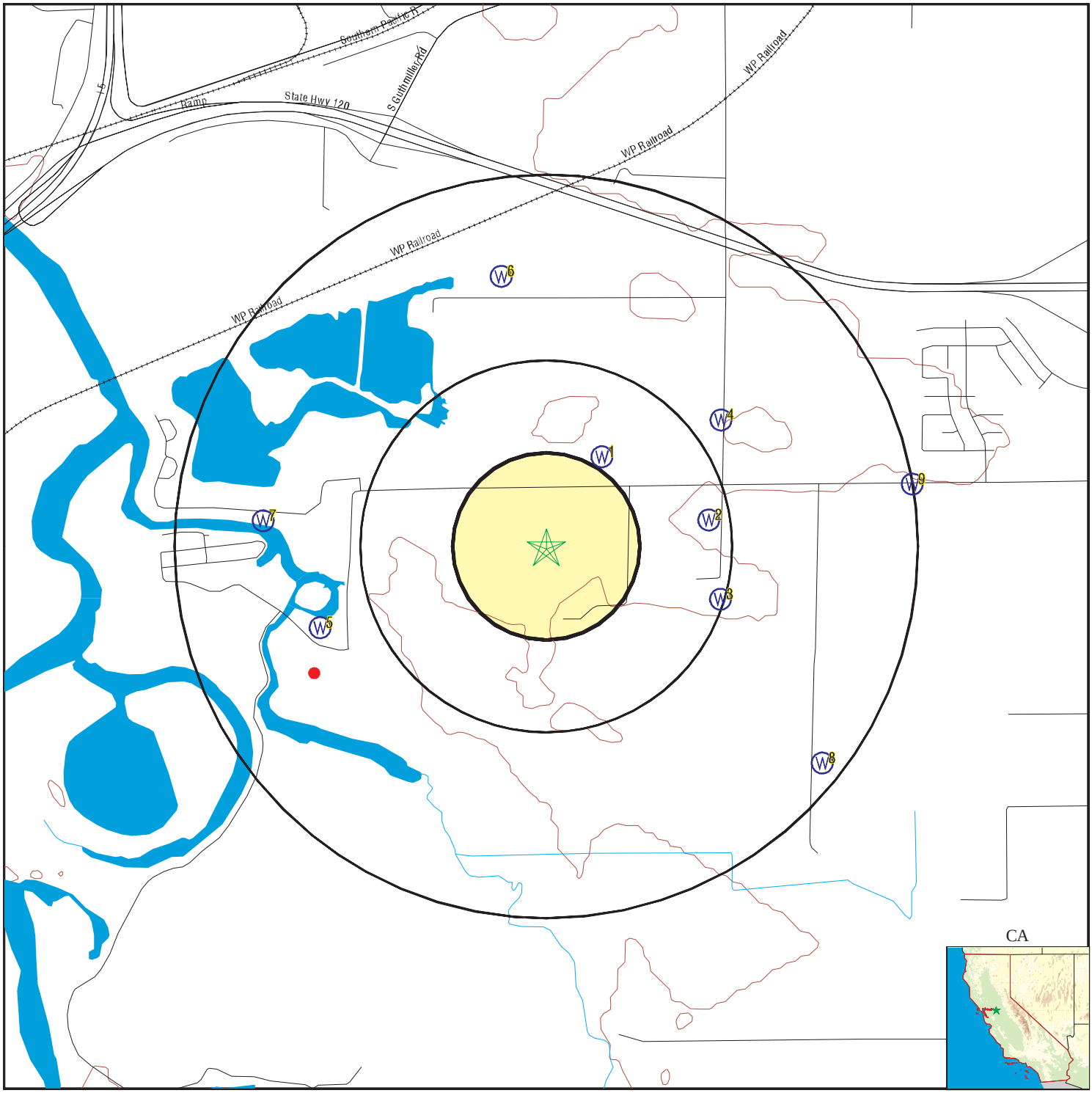
MAP ID	WELL ID	LOCATION FROM TP
2	CADW10000038249	1/4 - 1/2 Mile East
4	CADW10000038265	1/2 - 1 Mile NE
5	2547	1/2 - 1 Mile WSW
6	CADW10000038287	1/2 - 1 Mile North
7	2545	1/2 - 1 Mile West
9	CADW10000038254	1/2 - 1 Mile East

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/2 - 1 Mile WSW	

PHYSICAL SETTING SOURCE MAP - 2190076.2s



- 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

SITE NAME:	Trails of Manteca/Project #11515.E2	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Wakil Mateen
		INQUIRY #:	2190076.2s
LAT/LONG:	37.7731 / 121.2793	DATE:	April 08, 2008 7:18 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
NNE **FED USGS** **USGS3222572**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	374636121163201
Site name:	002S006E20G002M		
Latitude:	374636		
Longitude:	1211632	Dec lat:	37.7765945
Dec lon:	-121.27660902	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SESWNES11T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	15.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19740305
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:	220	Hole depth:	260
Source of depth data:	Not Reported		
Project number:	8479423710		
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:	1974-03-05	Ground water data end date:	1974-03-05
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-03-05	28.10	

2
East **CA WELLS** **CADW10000038249**
1/4 - 1/2 Mile
Higher

Longn:	-121.2703
Latn:	37.7742
Stwellno:	02S06E11J001M
Districtco:	7
Wellusecod:	I
Countycode:	39
Gwcode:	502201
Site id:	CADW10000038249

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

3
ESE
1/4 - 1/2 Mile
Higher | **FED USGS** | **USGS3222758**

Agency cd:	USGS	Site no:	374616121161101
Site name:	002S006E11R001M		
Latitude:	374616		
Longitude:	1211611	Dec lat:	37.77103905
Dec lon:	-121.27077545	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	NESESES11T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	15.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19741025
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 ABOVE AND BELOW E-CLAY (MIOCENE-PLEISTOCENE)		
Well depth:	280	Hole depth:	310
Source of depth data:	Not Reported		
Project number:	8479423710		
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:	1979-05-22
Water quality data end date:	1979-05-22	Water quality data count:	1
Ground water data begin date:	1974-10-25	Ground water data end date:	1974-10-25
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-25	21.20	

4
NE
1/2 - 1 Mile
Higher | **CA WELLS** | **CADW10000038265**

Longn:	-121.2697
Latn:	37.7781
Stwellno:	02S06E11H001M
Districtco:	8
Wellusecod:	Z
Countycode:	39
Gwcode:	502201
Site id:	CADW10000038265

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

5
WSW
1/2 - 1 Mile
Lower | **CA WELLS** | **2547**

Water System Information:

Prime Station Code:	02S/06E-10R01 M	User ID:	39C
FRDS Number:	3901122001	County:	San Joaquin
District Number:	69	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	374612.0 1211722.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	3901122		
System Name:	ISLANDER MARINA		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	05/24/2004 00:00:00	Findings:	2.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/03/2004 00:00:00	Findings:	3.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/18/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/24/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	03/18/2002 00:00:00	Findings:	36.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06/17/2002 00:00:00	Findings:	49 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12/13/2002 00:00:00	Findings:	32.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/14/2003 00:00:00	Findings:	4.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06/19/2003 00:00:00	Findings:	37.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09/26/2003 00:00:00	Findings:	41.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/22/2004 00:00:00	Findings:	1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	03/22/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	03/22/2004 00:00:00	Findings:	35.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04/15/2004 00:00:00	Findings:	.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04/15/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	04/15/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		

Sample Collected:	04/27/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	04/27/2004 00:00:00	Findings:	1.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	05/18/2004 00:00:00	Findings:	2.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/23/2004 00:00:00	Findings:	2.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/14/2004 00:00:00	Findings:	2.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/28/2004 00:00:00	Findings:	2.5 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/05/2004 00:00:00	Findings:	2.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/25/2004 00:00:00	Findings:	1.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/19/2004 00:00:00	Findings:	1.9 UG/L
Chemical:	1,2-DICHLOROETHANE		

6
North **CA WELLS** **CADW10000038287**
1/2 - 1 Mile
Higher

Longn:	-121.2805
Latn:	37.7837
Stwellno:	02S06E02P001M
Districtco:	7
Wellusecod:	I
Countycode:	39
Gwcode:	502201
Site id:	CADW10000038287

7
West **CA WELLS** **2545**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	02S/06E-10J02 M	User ID:	PTA
FRDS Number:	3910023001	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	374627.0 1211732.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01 - EQUIPMENT YARD		
System Number:	3910023		
System Name:	Oakwood Lake Water District		
Organization That Operates System:			
	874 E. WOODWARD		
	MANTECA, CA 95337		
Pop Served:	400	Connections:	435
Area Served:	OAKWOOD LAKE RESORT		
Sample Collected:	03/13/2003 00:00:00	Findings:	259 UG/L
Chemical:	BORON		

Sample Collected:	05/06/2004 00:00:00	Findings:	104 UG/L
Chemical:	BORON		
Sample Collected:	06/03/2004 00:00:00	Findings:	890 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	06/03/2004 00:00:00	Findings:	69 MG/L
Chemical:	CHLORIDE		
Sample Collected:	06/03/2004 00:00:00	Findings:	306 UG/L
Chemical:	IRON		
Sample Collected:	06/03/2004 00:00:00	Findings:	257 UG/L
Chemical:	MANGANESE		
Sample Collected:	06/03/2004 00:00:00	Findings:	510 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03/22/2005 00:00:00	Findings:	856 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/22/2005 00:00:00	Findings:	70 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/22/2005 00:00:00	Findings:	746 UG/L
Chemical:	IRON		
Sample Collected:	03/22/2005 00:00:00	Findings:	184 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/24/2005 00:00:00	Findings:	10 UNITS
Chemical:	COLOR		
Sample Collected:	05/24/2005 00:00:00	Findings:	885 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	05/24/2005 00:00:00	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	05/24/2005 00:00:00	Findings:	265 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	05/24/2005 00:00:00	Findings:	265 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	05/24/2005 00:00:00	Findings:	215 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05/24/2005 00:00:00	Findings:	66 MG/L
Chemical:	CALCIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	12 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	99 MG/L
Chemical:	SODIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	3.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	70 MG/L
Chemical:	CHLORIDE		
Sample Collected:	05/24/2005 00:00:00	Findings:	15 UG/L
Chemical:	ARSENIC		
Sample Collected:	05/24/2005 00:00:00	Findings:	233 UG/L
Chemical:	BARIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	800 UG/L
Chemical:	IRON		
Sample Collected:	05/24/2005 00:00:00	Findings:	165 UG/L
Chemical:	MANGANESE		

Sample Collected:	05/24/2005 00:00:00	Findings:	488 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05/24/2005 00:00:00	Findings:	2.2 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	03/21/2006 00:00:00	Findings:	668 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/21/2006 00:00:00	Findings:	83 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/21/2006 00:00:00	Findings:	210 UG/L
Chemical:	IRON		

8
SE
1/2 - 1 Mile
Higher

FED USGS **USGS3222717**

Agency cd:	USGS	Site no:	374553121155301
Site name:	002S006E13C001M		
Latitude:	374553		
Longitude:	1211553	Dec lat:	37.76465029
Dec lon:	-121.26577521	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SENENWS13T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	21.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19720413
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:	280	Hole depth:	291
Source of depth data:	Not Reported		
Project number:	8479423710		
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

9
East
1/2 - 1 Mile
Higher

CA WELLS **CADW10000038254**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Longn:	-121.2603
Latn:	37.7756
Stwellno:	02S06E12L001M
Districtco:	8
Wellusecod:	Z
Countycode:	39
Gwcode:	502201
Site id:	CADW10000038254

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance		Database	EDR ID Number
WSW 1/2 - 1 Mile		**OIL_GAS**	**CAOG30000186412**

Apinumber:	07720332	Operator:	Hunnicutt & Camp Drilling Co.
Lease:	Maehl Unit 1	Well no:	1
Field:	Not Reported	Caoilgas m2 area:	Not Reported
Map:	606	Status cod:	006
Source:	Not Reported		
Latitude:	37.768226		
Longitude:	-121.289694		
Td:	0		
Sec:	10		
Twn:	2S	Rge:	6E
Bm:	MD		
X coord1:	0		
Y coord1:	0		
Zone:	Not Reported	Spuddate:	10/12/2006 00:00:00
Abanddate:	09/06/2006 00:00:00	Comments:	Not Reported
District:	6	Mapinfo id:	190930
Site id:	CAOG30000186412		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for SAN JOAQUIN County: 3

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 SAN JOAQUIN COUNTY, CA

Number of sites tested: 20

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.530 pCi/L	90%	10%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.050 pCi/L	100%	0%	0%

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.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) 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^{R} 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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

STREET AND ADDRESS INFORMATION

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The EDR Radius Map
with GeoCheck®

Trails of Manteca (West Side)/11515.E2
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 2193168.1s

April 11, 2008

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

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

2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

COORDINATES

Latitude (North):	37.767380 - 37° 46' 2.6''
Longitude (West):	121.283340 - 121° 17' 0.0''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651202.4
UTM Y (Meters):	4181188.2
Elevation:	22 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37121-G3 LATHROP, CA
Most Recent Revision:	1994

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
Proposed NPL Proposed National Priority List Sites
Delisted NPL National Priority List Deletions
NPL LIENS Federal Superfund Liens
CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP CERCLIS No Further Remedial Action Planned
LIENS 2 CERCLA Lien Information
CORRACTS Corrective Action Report
RCRA-TSDF RCRA - Transporters, Storage and Disposal
RCRA-LQG RCRA - Large Quantity Generators

EXECUTIVE SUMMARY

RCRA-SQG RCRA - Small Quantity Generators
RCRA-CESQG RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen RCRA - Non Generators
US ENG CONTROLS Engineering Controls Sites List
US INST CONTROL Sites with Institutional Controls
ERNS Emergency Response Notification System
HMIRS Hazardous Materials Information Reporting System
DOT OPS Incident and Accident Data
US CDL Clandestine Drug Labs
US BROWNFIELDS A Listing of Brownfields Sites
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
LUCIS Land Use Control Information System
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
ODI Open Dump Inventory
DEBRIS REGION 9 Torres Martinez Reservation Illegal Dump Site Locations
MINES Mines Master Index File
TRIS Toxic Chemical Release Inventory System
TSCA Toxic Substances Control Act
FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS FIFRA/TSCA Tracking System Administrative Case Listing
SSTS Section 7 Tracking Systems
ICIS Integrated Compliance Information System
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
RADINFO Radiation Information Database
FINDS Facility Index System/Facility Registry System
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

HIST Cal-Sites Historical Calsites Database
CA BOND EXP. PLAN Bond Expenditure Plan
SCH School Property Evaluation Program
Toxic Pits Toxic Pits Cleanup Act Sites
SWF/LF Solid Waste Information System
CA WDS Waste Discharge System
WMUDS/SWAT Waste Management Unit Database
Cortese "Cortese" Hazardous Waste & Substances Sites List
SWRCY Recycler Database
LUST Geotracker's Leaking Underground Fuel Tank Report
CA FID UST Facility Inventory Database
SLIC Statewide SLIC Cases
UST Active UST Facilities
HIST UST Hazardous Substance Storage Container Database
AST Aboveground Petroleum Storage Tank Facilities
LIENS Environmental Liens Listing
SWEEPS UST SWEEPS UST Listing
CHMIRS California Hazardous Material Incident Report System
Notify 65 Proposition 65 Records
DEED Deed Restriction Listing
VCP Voluntary Cleanup Program Properties

EXECUTIVE SUMMARY

DRYCLEANERS Cleaner Facilities
WIP Well Investigation Program Case List
CDL Clandestine Drug Labs
RESPONSE State Response Sites
HAZNET Facility and Manifest Data
AIRS Emissions Inventory Data
HAULERS Registered Waste Tire Haulers Listing
ENVIROSTOR EnviroStor Database

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 not identified.

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

EXECUTIVE SUMMARY

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

Site Name	Database(s)
WHISKEY SLOUGH ROAD 1/8 MILE NORTH OF CITY OF HOLT	CHMIRS, SLIC
MANTECA UNIFIED SCHOOL DI	Cortese
MANTECA WELLS WATER CORP-PRIMARY	UST
MANTECA SERVICE CENTER	AST
S. SAN JOAQUIN IRRIGATION DIST	AST
CITY OF MANTECA	HAZNET
CITY OF MANTECA WATER WELL #12	HAZNET
MANTECA USD - NILE GARDENS ELEMENTARY	HAZNET
28906 SO MANTECA ROAD	HMIRS
SECTION OF MANTECA AND RIVER RD.	ERNS
CITY OF MANTECA	AIRS
CITY OF MANTECA	AIRS

OVERVIEW MAP - 2193168.1s



- 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

0 1/4 1/2 1 Miles

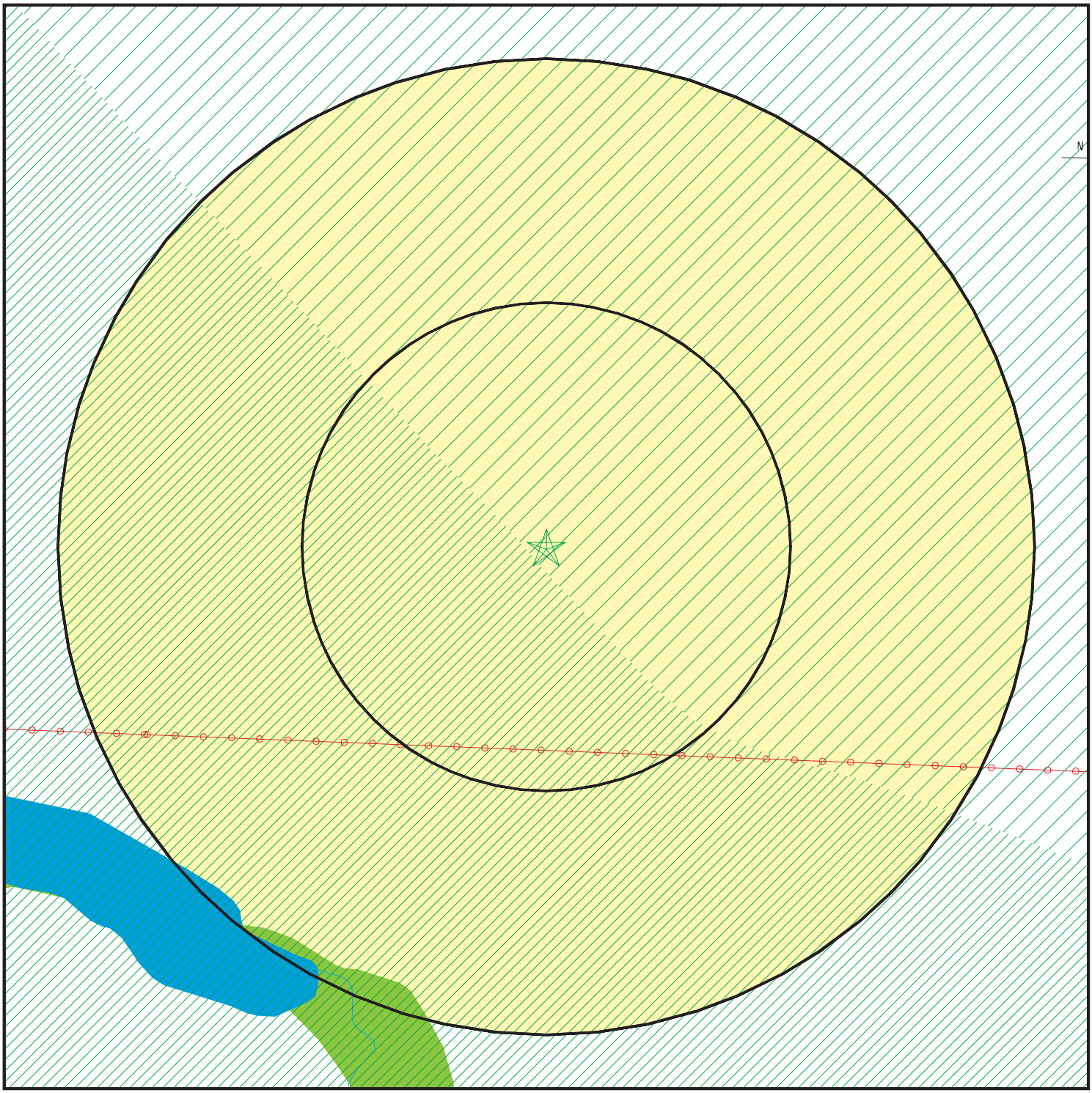
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

SITE NAME: Trails of Manteca (West Side)/11515.E2	CLIENT: Terrasearch Inc.
ADDRESS: 2368 East Woodward Avenue Manteca CA 95337	CONTACT: Wakil Mateen
LAT/LONG: 37.7674 / 121.2833	INQUIRY #: 2193168.1s DATE: April 11, 2008 5:33 pm

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DETAIL MAP - 2193168.1s



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

SITE NAME:	Trails of Manteca (West Side)/11515.E2	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Wakil Mateen
LAT/LONG:	37.7674 / 121.2833	INQUIRY #:	2193168.1s
		DATE:	April 11, 2008 5:33 pm

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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
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA-TSDF		0.500	0	0	0	NR	NR	0
RCRA-LQG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
RCRA-NonGen		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
US CDL		TP	NR	NR	NR	NR	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
HIST Cal-Sites		1.000	0	0	0	0	NR	0
CA BOND EXP. PLAN		1.000	0	0	0	0	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
SWF/LF		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
CA WDS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
LIENS		TP	NR	NR	NR	NR	NR	0
SWEEPS UST		0.250	0	0	NR	NR	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
DEED		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RESPONSE		1.000	0	0	0	0	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
HAULERS		TP	NR	NR	NR	NR	NR	0
ENVIROSTOR		1.000	0	0	0	0	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	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	Site	Database(s)	EDR ID Number EPA ID Number

MAP FINDINGS

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MANTECA	S103957090	CITY OF MANTECA	CORPORATION YARD	95337	HAZNET
MANTECA	S107142311	CITY OF MANTECA WATER WELL #12	1170 HOLT LN	95337	HAZNET
MANTECA	A100226308	MANTECA SERVICE CENTER	10901 E. HWY. 120		AST
MANTECA	A100226524	S. SAN JOAQUIN IRRIGATION DIST	11011 E. HWY. 120		AST
MANTECA	S104857260	MANTECA UNIFIED SCHOOL DI	2901 LOUISE	95337	Cortese
MANTECA	2005702905	28906 SO MANTECA ROAD	28906 SO MANTECA ROAD		HMIRS
MANTECA	S104566249	MANTECA USD - NILE GARDENS ELEMENTARY	5700 E NILE AVE	95337	HAZNET
MANTECA	U004024304	MANTECA WELLS WATER CORP-PRIMARY	220 W OAK ST	95337	UST
MANTECA	90170150	SECTION OF MANTECA AND RIVER RD.	SECTION OF MANTECA AND RIVER RD.		ERNS
MANTECA	S106920533	CITY OF MANTECA	VARIOUS LOCATIONS	95337	AIRS
MANTECA	S106920526	CITY OF MANTECA	376 VICTORY LANE	95337	AIRS
SAN JOAQUIN COUNTY	S105637094		WHISKEY SLOUGH ROAD 1/8 MILE NORTH OF CITY OF HOLT		CHMIRS, SLIC

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
Date Data Arrived at EDR: 02/08/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 38

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
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 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

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
Date Data Arrived at EDR: 02/04/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 42

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

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
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
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 01/09/2008
Date Data Arrived at EDR: 02/05/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 15

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/20/2008
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
Date Data Arrived at EDR: 12/06/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 76

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/17/2008
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
Date Data Arrived at EDR: 03/07/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2007
Date Data Arrived at EDR: 12/18/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/03/2008
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.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
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: 01/18/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/31/2008
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: 01/18/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/31/2008
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
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 54

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/23/2008
Next Scheduled EDR Contact: 04/21/2008
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: 10/31/2007
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 60

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

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

Date of Government Version: 02/14/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 22

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
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.

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: 01/03/2008
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 03/10/2008
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: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
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.

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: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
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: 12/28/2007
Date Data Arrived at EDR: 12/28/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 27

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: 11/20/2007
Date Data Arrived at EDR: 01/03/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 48

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.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 69

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: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/15/2008
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 01/30/2008
Number of Days to Update: 8

Source: EPA/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: 01/15/2008
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: 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.

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: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
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: 07/27/2007
Date Data Arrived at EDR: 08/13/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 02/07/2008
Next Scheduled EDR Contact: 04/14/2008
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: 02/07/2008
Next Scheduled EDR Contact: 05/05/2008
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: 01/29/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/31/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

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: 01/04/2008
Date Data Arrived at EDR: 01/10/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 41

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/31/2008
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
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 03/03/2008
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
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/13/2008
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
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
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
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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: 02/27/2008
Next Scheduled EDR Contact: 02/25/2008
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: 02/11/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

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

Date of Government Version: 12/12/2007
Date Data Arrived at EDR: 12/13/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 63

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.

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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 02/05/2008
Next Scheduled EDR Contact: 05/05/2008
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, Calveras, 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: 01/01/2008
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 04/03/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Quarterly

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: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

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: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 510-286-0457
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: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Varies

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: 03/03/2008
Next Scheduled EDR Contact: 05/19/2008
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: 10/02/2007
Date Data Arrived at EDR: 10/03/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 35

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: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
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: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 30

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 04/09/2008
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
Date Data Arrived at EDR: 03/25/2008
Date Made Active in Reports: 04/09/2008
Number of Days to Update: 15

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/24/2008
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
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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
Date Data Arrived at EDR: 02/06/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/05/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007
Date Data Arrived at EDR: 11/27/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

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
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
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).

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: 02/19/2008
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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/03/2008
Date Data Arrived at EDR: 01/04/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 41

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: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
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: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

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

Date of Government Version: 10/25/2007
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 22

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 01/23/2008
Next Scheduled EDR Contact: 04/21/2008
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: 09/30/2007
Date Data Arrived at EDR: 10/15/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 04/21/2008
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: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
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: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
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: 01/18/2008
Next Scheduled EDR Contact: 04/14/2008
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 identifes 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.

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: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/12/2008
Date Data Arrived at EDR: 02/14/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 29

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Varies

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: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
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: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

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
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

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
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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: 12/21/2007
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
No description is available for this data

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: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
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
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: 303-312-6137
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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).

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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
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: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
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: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
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: 01/16/2008
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 28

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 02/04/2008
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 12/17/2007
Date Data Arrived at EDR: 12/18/2007
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 52

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/04/2008
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.

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: 02/19/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/29/2007
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 23

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/14/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

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: 05/30/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Annually

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: 02/25/2008
Next Scheduled EDR Contact: 05/12/2008
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: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
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: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 29

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: 04/07/2008
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: 12/03/2007
Date Data Arrived at EDR: 12/19/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 57

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: 12/03/2007
Date Data Arrived at EDR: 12/21/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 55

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

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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 02/27/2008
Next Scheduled EDR Contact: 04/28/2008
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: 02/27/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

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: 12/28/2007
Date Data Arrived at EDR: 12/28/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 48

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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
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: 08/22/2007
Date Data Arrived at EDR: 10/03/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 35

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 04/02/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite 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

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: 01/15/2008
Next Scheduled EDR Contact: 04/14/2008
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: 01/09/2008
Date Data Arrived at EDR: 01/11/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 34

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: 02/01/2008
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 Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Varies

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

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

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 03/03/2008
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: 09/24/2007
Date Data Arrived at EDR: 10/23/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 15

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/24/2008
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: 01/07/2008
Date Data Arrived at EDR: 01/30/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 9

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/24/2008
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
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 23

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/04/2007
Date Made Active in Reports: 05/24/2007
Number of Days to Update: 20

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/31/2008
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.

Date of Government Version: 11/26/2007
Date Data Arrived at EDR: 01/07/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 38

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: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 11/26/2007
Date Data Arrived at EDR: 01/07/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 38

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: 12/26/2007
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 30

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: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
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

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: 02/28/2008
Next Scheduled EDR Contact: 05/26/2008
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
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 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

TRAILS OF MANTECA (WEST SIDE)/11515.E2
2368 EAST WOODWARD AVENUE
MANTECA, CA 95337

TARGET PROPERTY COORDINATES

Latitude (North):	37.76738 - 37° 46' 2.6''
Longitude (West):	121.28334 - 121° 17' 0.0''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	651202.4
UTM Y (Meters):	4181188.2
Elevation:	22 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37121-G3 LATHROP, CA
Most Recent Revision:	1994

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).

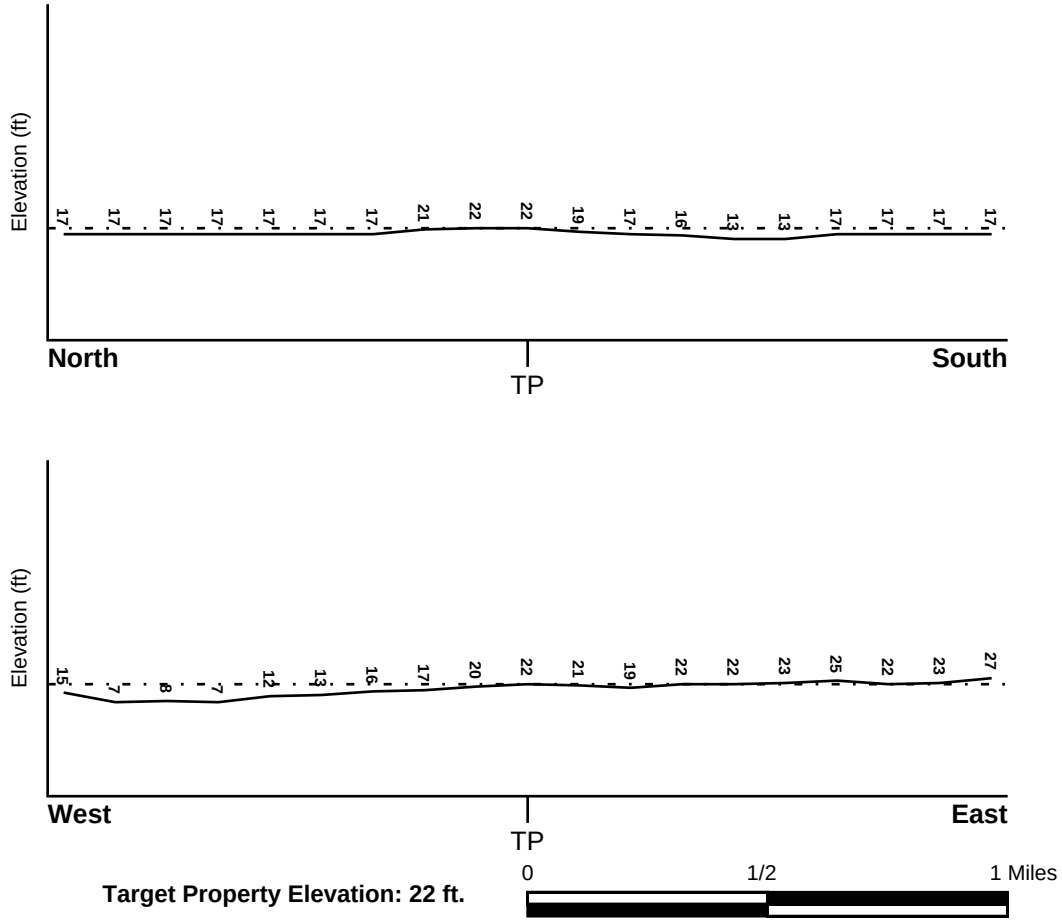
TOPOGRAPHIC INFORMATION

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 WSW

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	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0602990595C

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LATHROP	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.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
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

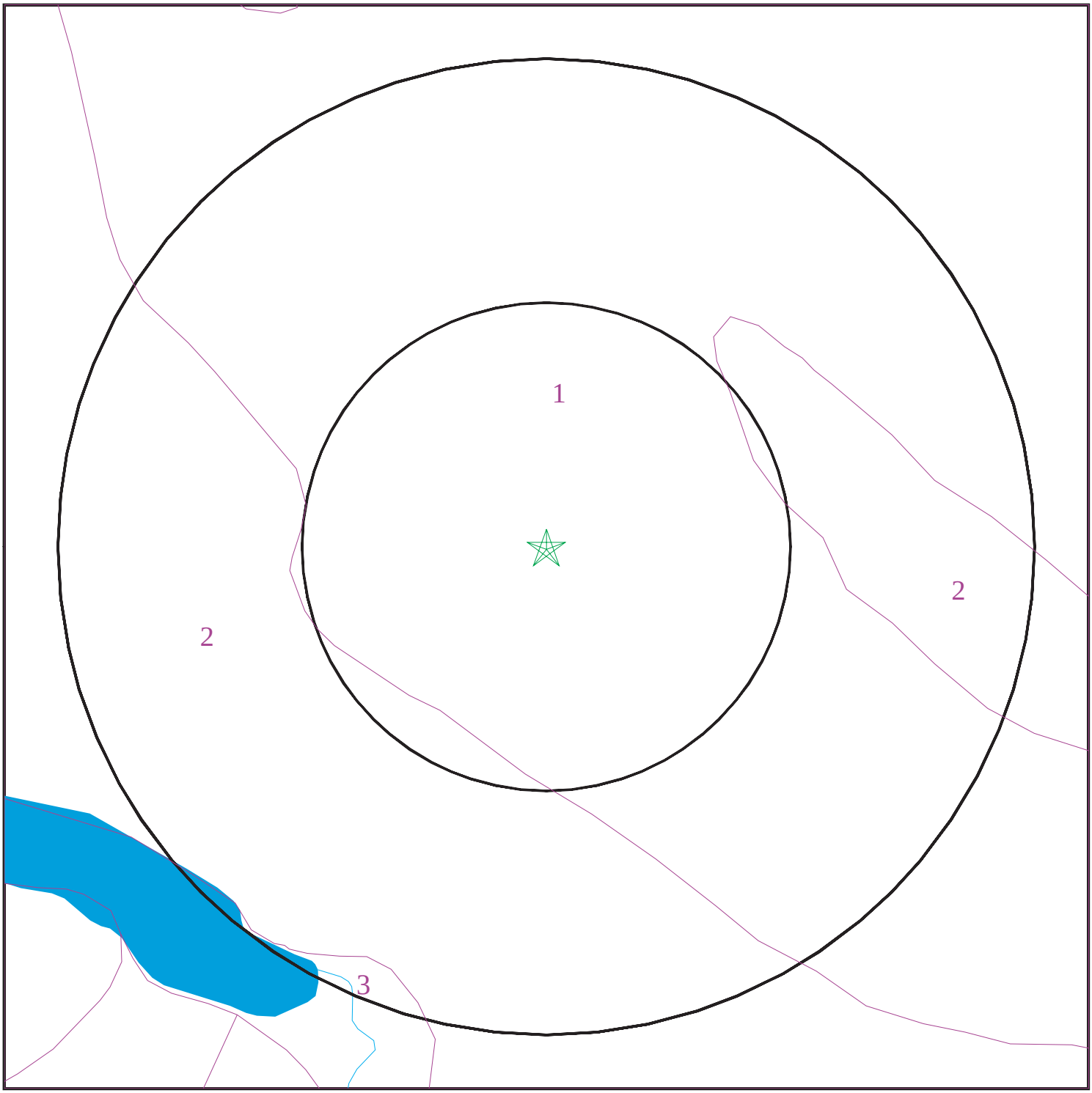
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed 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 - 2193168.1s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Trails of Manteca (West Side)/11515.E2	CLIENT:	Terrasearch Inc.
ADDRESS:	2368 East Woodward Avenue Manteca CA 95337	CONTACT:	Wakil Mateen
LAT/LONG:	37.7674 / 121.2833	INQUIRY #:	2193168.1s
		DATE:	April 11, 2008 5:33 pm

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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: COLUMBIA

Soil Surface Texture: fine 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: Somewhat poorly 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							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	fine 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: 42 Min: 14	Max: 7.8 Min: 6.1
2	11 inches	59 inches	stratified sand to silt 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: 42 Min: 14	Max: 7.8 Min: 6.1

Soil Map ID: 2

Soil Component Name: MERRITT

Soil Surface Texture: silty clay 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: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 153 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	silty 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%), silt.	Max: 14 Min: 4	Max: 9 Min: 7.9
2	16 inches	48 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 9 Min: 7.9
3	48 inches	59 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 9 Min: 7.9

Soil Map ID: 3

Soil Component Name: Water

Soil Surface Texture: silty clay 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:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

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

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
3	USGS3222758	1/2 - 1 Mile ENE
4	USGS3222572	1/2 - 1 Mile NNE
7	USGS3222717	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	2547	1/4 - 1/2 Mile WNW
2	2545	1/2 - 1 Mile NW
5	CADW10000038249	1/2 - 1 Mile NE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

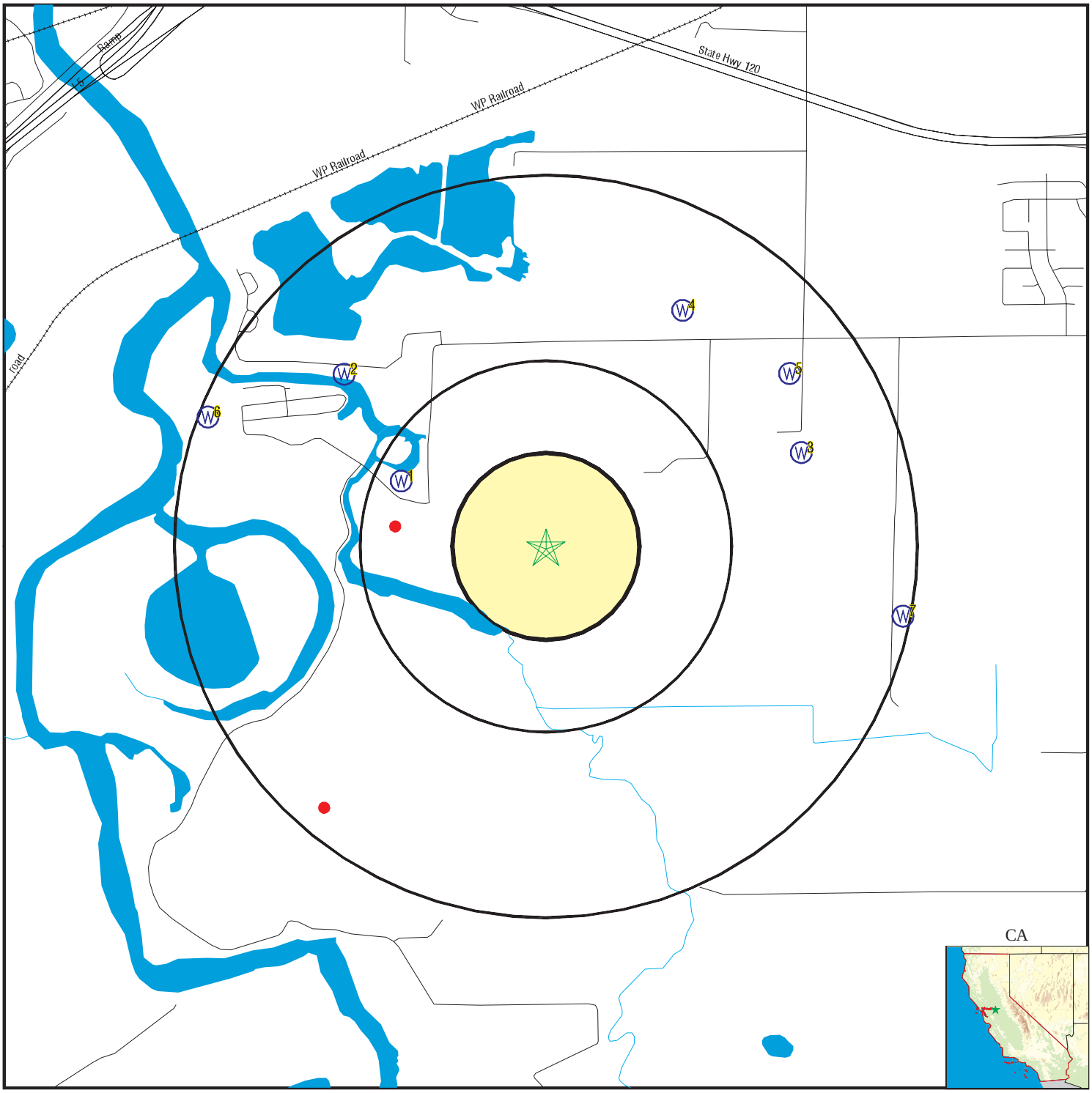
MAP ID	WELL ID	LOCATION FROM TP
6	2546	1/2 - 1 Mile WNW

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/4 - 1/2 Mile West	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 2193168.1s



- 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

No contour lines were detected within this map area.

SITE NAME: Trails of Manteca (West Side)/11515.E2	CLIENT: Terrasearch Inc.
ADDRESS: 2368 East Woodward Avenue Manteca CA 95337	CONTACT: Wakil Mateen INQUIRY #: 2193168.1s
LAT/LONG: 37.7674 / 121.2833	DATE: April 11, 2008 5:33 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
WNW
1/4 - 1/2 Mile
Lower | **CA WELLS** | **2547**

Water System Information:

Prime Station Code:	02S/06E-10R01 M	User ID:	39C
FRDS Number:	3901122001	County:	San Joaquin
District Number:	69	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	374612.0 1211722.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	3901122		
System Name:	ISLANDER MARINA		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	05/24/2004 00:00:00	Findings:	2.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/03/2004 00:00:00	Findings:	3.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/18/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	06/24/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	03/18/2002 00:00:00	Findings:	36.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06/17/2002 00:00:00	Findings:	49 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12/13/2002 00:00:00	Findings:	32.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/14/2003 00:00:00	Findings:	4.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06/19/2003 00:00:00	Findings:	37.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09/26/2003 00:00:00	Findings:	41.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/22/2004 00:00:00	Findings:	1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	03/22/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	03/22/2004 00:00:00	Findings:	35.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04/15/2004 00:00:00	Findings:	.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04/15/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	04/15/2004 00:00:00	Findings:	1.6 UG/L
Chemical:	1,2-DICHLOROETHANE		

Sample Collected:	04/27/2004 00:00:00	Findings:	1.1 UG/L
Chemical:	1,1-DICHLOROETHANE		
Sample Collected:	04/27/2004 00:00:00	Findings:	1.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	05/18/2004 00:00:00	Findings:	2.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/23/2004 00:00:00	Findings:	2.1 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/14/2004 00:00:00	Findings:	2.6 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	07/28/2004 00:00:00	Findings:	2.5 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/05/2004 00:00:00	Findings:	2.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/25/2004 00:00:00	Findings:	1.3 UG/L
Chemical:	1,2-DICHLOROETHANE		
Sample Collected:	08/19/2004 00:00:00	Findings:	1.9 UG/L
Chemical:	1,2-DICHLOROETHANE		

2
NW
1/2 - 1 Mile
Lower

CA WELLS **2545**

Water System Information:

Prime Station Code:	02S/06E-10J02 M	User ID:	PTA
FRDS Number:	3910023001	County:	San Joaquin
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	374627.0 1211732.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01 - EQUIPMENT YARD		
System Number:	3910023		
System Name:	Oakwood Lake Water District		
Organization That Operates System:			
	874 E. WOODWARD MANTECA, CA 95337		
Pop Served:	400	Connections:	435
Area Served:	OAKWOOD LAKE RESORT		
Sample Collected:	03/13/2003 00:00:00	Findings:	259 UG/L
Chemical:	BORON		
Sample Collected:	05/06/2004 00:00:00	Findings:	104 UG/L
Chemical:	BORON		
Sample Collected:	06/03/2004 00:00:00	Findings:	890 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	06/03/2004 00:00:00	Findings:	69 MG/L
Chemical:	CHLORIDE		
Sample Collected:	06/03/2004 00:00:00	Findings:	306 UG/L
Chemical:	IRON		
Sample Collected:	06/03/2004 00:00:00	Findings:	257 UG/L
Chemical:	MANGANESE		
Sample Collected:	06/03/2004 00:00:00	Findings:	510 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

Sample Collected:	03/22/2005 00:00:00	Findings:	856 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/22/2005 00:00:00	Findings:	70 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/22/2005 00:00:00	Findings:	746 UG/L
Chemical:	IRON		
Sample Collected:	03/22/2005 00:00:00	Findings:	184 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/24/2005 00:00:00	Findings:	10 UNITS
Chemical:	COLOR		
Sample Collected:	05/24/2005 00:00:00	Findings:	885 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	05/24/2005 00:00:00	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	05/24/2005 00:00:00	Findings:	265 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	05/24/2005 00:00:00	Findings:	265 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	05/24/2005 00:00:00	Findings:	215 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05/24/2005 00:00:00	Findings:	66 MG/L
Chemical:	CALCIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	12 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	99 MG/L
Chemical:	SODIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	3.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	70 MG/L
Chemical:	CHLORIDE		
Sample Collected:	05/24/2005 00:00:00	Findings:	15 UG/L
Chemical:	ARSENIC		
Sample Collected:	05/24/2005 00:00:00	Findings:	233 UG/L
Chemical:	BARIUM		
Sample Collected:	05/24/2005 00:00:00	Findings:	800 UG/L
Chemical:	IRON		
Sample Collected:	05/24/2005 00:00:00	Findings:	165 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/24/2005 00:00:00	Findings:	488 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05/24/2005 00:00:00	Findings:	2.2 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	03/21/2006 00:00:00	Findings:	668 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/21/2006 00:00:00	Findings:	83 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/21/2006 00:00:00	Findings:	210 UG/L
Chemical:	IRON		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

3
ENE
1/2 - 1 Mile
Lower

FED USGS **USGS3222758**

Agency cd:	USGS	Site no:	374616121161101
Site name:	002S006E11R001M		
Latitude:	374616		
Longitude:	1211611	Dec lat:	37.77103905
Dec lon:	-121.27077545	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	NESESES11T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	15.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19741025
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 ABOVE AND BELOW E-CLAY (MIOCENE-PLEISTOCENE)		
Well depth:	280	Hole depth:	310
Source of depth data:	Not Reported		
Project number:	8479423710		
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:	1979-05-22
Water quality data end date:	1979-05-22	Water quality data count:	1
Ground water data begin date:	1974-10-25	Ground water data end date:	1974-10-25
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-25	21.20	

4
NNE
1/2 - 1 Mile
Lower

FED USGS **USGS3222572**

Agency cd:	USGS	Site no:	374636121163201
Site name:	002S006E20G002M		
Latitude:	374636		
Longitude:	1211632	Dec lat:	37.7765945
Dec lon:	-121.27660902	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SESWNES11T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	15.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19740305
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:	220	Hole depth:	260
Source of depth data:	Not Reported		
Project number:	8479423710		
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:	1974-03-05	Ground water data end date:	1974-03-05
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-03-05	28.10	

5
NE
1/2 - 1 Mile
Higher

CA WELLS **CADW10000038249**

Longn:	-121.2703
Latn:	37.7742
Stwellno:	02S06E11J001M
Districtco:	7
Wellusecod:	I
Countycode:	39
Gwcode:	502201
Site id:	CADW10000038249

6
WNW
1/2 - 1 Mile
Lower

CA WELLS **2546**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	02S/06E-10L01 M	User ID:	39C
FRDS Number:	3901123001	County:	San Joaquin
District Number:	69	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	374621.0 1211756.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	3901123		
System Name:	TURTLE BEACH		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	11/08/2006 00:00:00	Findings:	7.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/08/2006 00:00:00	Findings:	1785 UG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	05/08/2002 00:00:00	Findings:	36.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/14/2002 00:00:00	Findings:	39.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/13/2002 00:00:00	Findings:	40.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02/12/2003 00:00:00	Findings:	42 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05/21/2003 00:00:00	Findings:	43 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/18/2003 00:00:00	Findings:	37.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/12/2003 00:00:00	Findings:	39.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05/12/2004 00:00:00	Findings:	36.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/04/2004 00:00:00	Findings:	36.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/17/2004 00:00:00	Findings:	32.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02/09/2005 00:00:00	Findings:	36.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05/11/2005 00:00:00	Findings:	33.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/10/2005 00:00:00	Findings:	35 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11/09/2005 00:00:00	Findings:	40.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03/17/2006 00:00:00	Findings:	38 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05/10/2006 00:00:00	Findings:	37.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08/09/2006 00:00:00	Findings:	34.3 MG/L
Chemical:	NITRATE (AS NO3)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
7 **East** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS3222717**

Agency cd:	USGS	Site no:	374553121155301
Site name:	002S006E13C001M		
Latitude:	374553		
Longitude:	1211553	Dec lat:	37.76465029
Dec lon:	-121.26577521	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SENENWS13T02SR06EM
Location map:	LATHROP	Map scale:	24000
Altitude:	21.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19720413
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:	280	Hole depth:	291
Source of depth data:	Not Reported		
Project number:	8479423710		
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

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction
Distance | Database | EDR ID Number

West
1/4 - 1/2 Mile | **OIL_GAS** | **CAOG30000186412**

Apinumber:	07720332	Operator:	Hunnicutt & Camp Drilling Co.
Lease:	Maehl Unit 1	Well no:	1
Field:	Not Reported	Caoilgas m2 area:	Not Reported
Map:	606	Status cod:	006
Source:	Not Reported		
Latitude:	37.768226		
Longitude:	-121.289694		
Td:	0		
Sec:	10		
Twn:	2S	Rge:	6E
Bm:	MD		
X coord1:	0		
Y coord1:	0		
Zone:	Not Reported	Spuddate:	10/12/2006 00:00:00
Abanddate:	09/06/2006 00:00:00	Comments:	Not Reported
District:	6	Mapinfo id:	190930
Site id:	CAOG30000186412		

SW
1/2 - 1 Mile | **OIL_GAS** | **CAOG30000186385**

Apinumber:	07700122	Operator:	Great Basins Petroleum Co.
Lease:	Picchi	Well no:	66X-15
Field:	McMullin Ranch Gas	Caoilgas m2 area:	Not Reported
Map:	606	Status cod:	006
Source:	Not Reported		
Latitude:	37.757241		
Longitude:	-121.293189		
Td:	0		
Sec:	15		
Twn:	2S	Rge:	6E
Bm:	MD		
X coord1:	0		
Y coord1:	0		
Zone:	Not Reported	Spuddate:	10/12/2006 00:00:00
Abanddate:	09/06/2006 00:00:00	Comments:	Not Reported
District:	6	Mapinfo id:	190191
Site id:	CAOG30000186385		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for SAN JOAQUIN County: 3

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 SAN JOAQUIN COUNTY, CA

Number of sites tested: 20

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.530 pCi/L	90%	10%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.050 pCi/L	100%	0%	0%

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^{R} 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.

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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Certified Sanborn® Map Report

Sanborn® Library search results
Certification # 5A97-4F32-8CA0

Trails of Manteca/Project #11515.E2
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number 2190076.3

April 08, 2008

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Certified Sanborn® Map Report

4/08/08

Site Name:
Trails of Manteca/Project
2368 East Woodward Avenue
Manteca, CA 95337

EDR Inquiry # 2190076.3

Client Name:
Terrasearch Inc.
257 Wright Brothers Avenue
Livermore, CA 94550

Contact: Wakil Mateen

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Terrasearch Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Trails of Manteca/Project #11515.E2
Address: 2368 East Woodward Avenue
City, State, Zip: Manteca, CA 95337
Cross Street:
P.O. # NA
Project: NA
Certification # 5A97-4F32-8CA0

Sanborn® Library search results
Certification # 5A97-4F32-8CA0

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

Total Maps: 0

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The EDR-City Directory
Abstract

Trails of Manteca/Project #11515.E2
2368 East Woodward Avenue
Manteca, CA 95337

Inquiry Number: 2190076.6

Thursday, April 10, 2008

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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Date EDR Searched Historical Sources: April 9, 2008

Target Property:
2368 East Woodward Avenue
Manteca, CA 95337

Year	Uses	Source
1968	Address Not Listed in Research Source	Polk's City Directory
1972	Address Not Listed in Research Source	Polk's City Directory
1978	Address Not Listed in Research Source	Polk's City Directory
1983	Address Not Listed in Research Source	Polk's City Directory
1996	Address Not Listed in Research Source	Polk's City Directory
2000	Residence	Polk's City Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
Manteca, CA 95337

Year	Uses	Source
1968	****E WOODWARD AVE****	Polk's City Directory
	No addresses listed prior to 4764	Polk's City Directory
1972	****E WOODWARD AVE****	Polk's City Directory
	No addresses listed prior to 4764	Polk's City Directory
1978	****E WOODWARD AVE****	Polk's City Directory
	No addresses listed prior to 4705	Polk's City Directory
1983	****E WOODWARD AVE****	Polk's City Directory
	No addresses listed prior to 4640	Polk's City Directory
1996	****E WOODWARD AVE****	Polk's City Directory
	No addresses listed between 874 and 3504	Polk's City Directory
2000	****E WOODWARD AVE****	Polk's City Directory
	No other addresses listed between 1380 and 3504	Polk's City Directory

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1968 through 2000. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.



EDR Environmental Data Resources Inc



The EDR Environmental Lien Search Report

TRAILS OF MANTECA
2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

Monday, June 11, 2007

Project Number: L07-04293

The Standard In Environmental Risk Management Information

440 Wheelers Farm Road
Milford, Connecticut 06460

Nationwide Customer Service

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

ENVIRONMENTAL LIEN REPORT

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied property information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' office, registries of deed, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved and description); and
- provide a copy of the deed or cite documents reviewed;

Thank you for your business
Please contact EDR at 1-800-352-0050
with any questions or comments

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ENVIRONMENTAL LIEN REPORT

The EDR Environmental Lien Search Report is intended to assist in the search for environmental liens filed in land title records.

TARGET PROPERTY INFORMATION

ADDRESS

Trails of Manteca
2368 East Woodward Avenue
Manteca, California

RESEARCH SOURCE

Source: San Joaquin County Assessor
San Joaquin County Recorder

DEED INFORMATION

Type of Instrument: Memorandum of Agreement

Title is vested in: Weatherbee Properties, LLC, a California limited liability company

Title received from: Baird Lands, Inc., a California Corporation

Deed Dated: 12/07/2006
Deed Recorded: 12/13/2006
Instrument: 2006-259652

Comments: Seller is the legal and beneficial owner of the subject property. "Seller and Buyer have entered into an unrecorded Real Property Purchase and Sale Agreement dated 12-07-2003, pursuant to which Seller has agreed to sell to Buyer and Buyer has agreed to purchase the Property..." No fulfillment deed was found of record.

LEGAL DESCRIPTION

102.32 acres out of the North Half of Section 14, Township 2 South, Range 6 East of the Mt Diablo Principal Meridian, San Joaquin County, State of California

Assessor's Parcel Number(s): 241-240-02

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AULs: Found ☐ Not Found ☒

MEMORANDUM OF AGREEMENT

Accommodation
First American Title
24186G

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

Eugene H. Miller, Esq.
Miller, Starr & Regalia LLP
1331 N. California Blvd., 5th Floor
Walnut Creek, CA 94596

DOC # 2006-259652
12/13/2006 07:49A Fee:22.00
Page 1 of 5
Recorded in Official Records
County of San Joaquin
GARY W. FREEMAN
Assessor-Recorder-County Clerk
Paid by FIRST AMER TITLE CO

SPACE ABOVE THIS LINE FOR RECORDER'S USE ONLY

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement ("Memorandum") is made as of ~~November~~ December 7, 2006, by and between BAIRD LANDS, INC., a California corporation ("Seller"), and WEATHERBEE PROPERTIES, LLC, a California limited liability company ("Buyer").

Recitals

A. Seller is the legal and beneficial owner of approximately 480 acres of real property identified as Assessor's Parcel Numbers 241-240-02, 241-240-03, 241-040-04, 241-040-05 and 241-260-05, located in San Joaquin County, California, in the City of Manteca, as more particularly described in attached Exhibit A ("Land").

B. Seller may also own certain tangible and intangible personal property relating to the Land (collectively, the "Intangible Property"). The Land and Intangible Property and such other tangible and intangible property acquired by Seller in connection with the Land are referred to collectively as the "Property."

C. Seller and Buyer have entered into an unrecorded Real Property Purchase and Sale Agreement dated ~~November~~ December 7, 2006 ("Agreement"), pursuant to which Seller has agreed to sell to Buyer and Buyer has agreed to purchase the Property upon the terms and conditions set forth in the Agreement.

D. Seller and Buyer desire to execute this Memorandum and are recording it in the Official Records of San Joaquin County so that third parties shall have notice of the rights and obligations of Buyer and Seller under the Agreement.

NOW, THEREFORE, in consideration of the Agreement and other good and valuable consideration, receipt of which is acknowledged, Seller and Buyer agree as follows:

1. Buyer shall purchase from Seller and Seller shall sell to Buyer the Property, upon the terms and conditions set forth in the Agreement.

2. The sole purpose of this Memorandum is to give notice of the Agreement and all of its terms, covenants and conditions to the same extent as if the Agreement were fully set forth in this Memorandum. The terms of the Agreement, not the terms of the Memorandum, are controlling. Any inconsistency shall be resolved in favor of the unrecorded Agreement.

IN WITNESS WHEREOF, the parties have executed this Memorandum as of the date first above written.

SELLER:

BAIRD LANDS, INC.,
a California corporation

By: _____
Name: DIANE WURZEL
Title: PRESIDENT

BUYER:

WEATHERBEE PROPERTIES, LLC,
a California Limited Liability Company

By: _____
Name: _____
Its: ~~Member~~ PRESIDENT

STATE OF California
COUNTY OF Contra Costa

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 24th DAY OF November, 2006
BY Diane Wurzel

_____
NOTARY PUBLIC

JEFFERY CURTIS
COMM. #1666016
Notary Public · California
Contra Costa County
My Comm. Expires May 12, 2010

Department of Conservation | Division of Oil, Gas, & Resource

Online WellRecord Query for State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Re

DOGGR Home Page | Online Production/Injection | How to P

Back | Well Details | G

Well Details

API: 07720332 Well Status: Plugged District:

Operator: Hunnicutt & Camp Drilling Co. Operator Code: 04144 Operator Status:

Lease: Maehl Unit 1 Well Number: 1 County:

Field: Any Field Field Code: 000 Area: Any Area

Section: 10 Township: 2S Range: 6E BaseMeridian: MD Latitude: 37.768226

Spud Date: 8/3/1979 Abandonment Date: 8/21/1979 Longitude: -121.289694

Well Records: (Click File Name to view the document.)

File Type	File Name	File Size	File Created On	File Modified On
	07720332_5DIL1_07-11-2006.pdf	3.73 MB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006.pdf	622.65 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_5DIL1_07-11-2006.tif	4.02 MB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_001.tif	25.56 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_002.tif	92.13 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_003.tif	25.37 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_004.tif	47.46 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_005.tif	24.75 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_006.tif	95.38 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_007.tif	29.41 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_008.tif	47.46 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_009.tif	25.38 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_010.tif	29.64 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_011.tif	57.02 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_012.tif	77.75 KB	07/21/06 12:53 PM	07/18/06 07:38 AM
	07720332_DATA_07-11-2006_013.tif	39.04 KB	07/21/06 12:53 PM	07/18/06 07:38 AM

Last edited on March 16, 2008

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RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT OF WELL ABANDONMENT

Woodland, California

Oct. 4, 1979

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING CO.
P.O. Box 399
Rio Vista, CA 94571

Your report of abandonment of well "Naehl Unit 1" 1
(Name and number)
A.P.I. No. 077-20332, Section 10, T. 2S, R. 6E, M.D. B. & M.,
---field, San Joaquin County,
dated Aug. 24, 1979, received Sept. 17, 1979, has been examined in conjunction with records filed in this office, and we have determined that all of the requirements of this Division have been fulfilled.

Environmental inspection made and approved 10/4/79

Blanket Bond
JTC:rmc

M. G. MEFFERD
State Oil and Gas Supervisor

By Original signed by John C. Sullivan
Deputy Supervisor
JOHN C. SULLIVAN

OG159 (11-76—GSR1—8M)

VISION OF OIL AND GAS

CHECK LIST - RECORDS RECEIVED AND WELL ST.

Company Hunnicutt & Camp Drilling Co Well No. "Macll Unit 1" 1

API No. 077-20332 Sec. 10, T. 2S, R. 6E, M.D. B.&M.

County San Joaquin Co. Field

RECORDS RECEIVED	DATE
Well Summary (Form OG100)	9-17-79 ✓
History (Form OG103)	
Core Record (Form OG101)	
Directional Survey	
Sidewall Samples	
Other	
Date final records received	
Electric logs:	
2 Mgst	9-17-79 ✓
2 Sonic	
2 DI-SFL 5"	✓
2 Linear DI-SFL 2"	✓

STATUS		STATUS	
Producing - Oil	___	Water Disposal	___
Idle - Oil	___	Water Flood	___
Abandoned - Oil	___	Steam Flood	___
Drilling - Idle	___	Fire Flood	___
Abandoned - Dry Hole	___	Air Injection	___
Producing - Gas	___	Gas Injection	___
Idle - Gas	___	CO_2 Injection	___
Abandoned - Gas	___	LPG Injection	___
Gas-Open to Oil Zone	___	Observation	___
Water Flood Source	___		

DATE

RECOMPLETED

REMARKS

ENGINEER'S CHECK LIST

1.	Summary, History, & Core record (dupl.)	✓
2.	Electric Log	✓
3.	Operator's Name	✓
4.	Signature	✓
5.	Well Designation	✓
6.	Location	✓
7.	Elevation	✓
8.	Notices	✓
9.	"T" Reports	✓
10.	Casing Record	
11.	Plugs	
12.	Surface Inspection	
13.	Production	
14.	E Well on Prod. Dir. Sur.	

CLERICAL CHECK LIST

1.	Location change ___ (F-OGD165)	
2.	Elevation change ___ (F-OGD165)	
3.	Form OGD121	✓
4.	Form OG159 (Final Letter)	Yes
5.	Form OGD150b (Release of Bond)	8/13
6.	Duplicate logs to archives	
7.	Notice of Records due (F-OGD170)	

ENVIRONMENTAL INSPECTION

DATE 10/4/79

APPROVED Dan Haustadt

RECORDS NOT APPROVED

Reason: Needs Surface Inspection. All else OK JTC 9/25/79

RECORDS APPROVED

RELEASE BOND

Date Eligible

(Use date last needed records were received.)

MAP AND MAP BOOK 79-9000

OGD2 (10-76-GSR1-1M)

LONG BEACH OFFICE - USE REVERSE SIDE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 679-200

DIVISION OF OIL AND GAS

Report on Operations

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING COMPANY
P.O. Box 399
Rio Vista, CA 94571

Woodland Calif.
September 5, 1979

Your operations at well "Maehl Unit 1" 1, API No. 077-20332, Sec. 10, T. 2S, R. 6E M.D., B.& M. --- Field, in San Joaquin County, were witnessed on 8-21-79. M.Hausladen, representative of the supervisor, was present from 0250 to 0345. There were also present C. R. Pettit, Driller.

Present condition of well: 8 5/8" cem. 921'. TD 9000'. Plugged with cement 973'-728'.

The operations were performed for the purpose of abandonment.

DECISION:

The location and hardness of the cement plug at 728' is approved.

KPH:kw

[illegible]
10/4/79
M Hausladen

M. G. MEFFERD
State Oil and Gas Supervisor

By John C. Sullivan
Deputy Supervisor
John C. Sullivan

OG109 (6-77-GSRI-15M)

DIVISION OF OIL AND GAS
Cementing/Plugging Memo

Operator Audnicutt & Camp Drilling Co. Well No. Maehl Unit #1
API No. 077-20332 Sec. 10, T. 2S, R. 6E, MD B&M
Field ——, County San Joaquin. On Aug 21 1979,
Mr. Hausladen, representative of the supervisor was present from 0230 to 0345.
There were also present C.R. Pettit, Driller
Casing record of well: 8 5/8" cem. 921'; TD 9000' Plugged w/cem. 973'-728'

The operations were performed for the purpose of ABDN

☐ The plugging/cementing operations as witnessed and reported are approved.
☒ The location and hardness of the cement plug @ 728' is approved.

Hole size: 12¼" fr. S' to 921', 7 7/8" to 9000' & ——" to ——'

Casing				Cemented			Top of Fill		Squeezed Away	Final Press.	Perfs.
Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus	Casing			

Casing/tubing recovered: ——" shot/cut at ——', ——', ——' pulled fr. ——';
——" shot/cut at ——', ——', ——' pulled fr. ——'.

Junk (in hole): ——

Hole fluid (bailed to) at ——'. Witnessed by ——

Mudding	Date	Bbls.	Displaced	Poured	Fill	Engr.

Cement Plugs		Placing	Placing Witnessed		Top Witnessed			
Date	Sx./cf	MO & Depth	Time	Engr.	Depth	Wt/Sample	Date & Time	Engr.
8/21	100sx "G"	DP 973'			728'		8/21/79 0345	M.H.

2nd

OGD10 (2-75-GSR1-6M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 679-199

DIVISION OF OIL AND GAS

Report on Operations

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING COMPANY
P.O. Box 399
Rio Vista, CA 94571

Woodland Calif.
September 5, 1979

Your operations at well "Maehl Unit 1" 1, API No. 077-20332, Sec. 10, T. 2S, R. 6E M.D., B.& M. ---, Field, in San Joaquin County, were witnessed on 8-4-79. J. Pynchon, representative of the supervisor, was present from 1620 to 1645. There were also present A. McGinnis, Drilling Foreman.

Present condition of well: 8 5/8" cem. 921'. TD 921' (standing cemented).

The operations were performed for the purpose of testing the blowout prevention equipment and installation.

DECISION:

The blowout prevention equipment and installation are approved.

HH:kw

M. G. MEFFERD
State Oil and Gas Supervisor

By John C. Sullivan
Deputy Supervisor
John C. Sullivan

OG109 (6-77-GSRI 15M)

1 of 2

DIVISION OF OIL AND GAS
BLOWOUT PREVENTION EQUIPMENT

Operator Hunnicutt & Camp Drilling Co. Well "Maehl Unit 1" 1 Field ____ T ____ County San Joaquin Co.

VISITS:	Date	Engineer	Time	Operator's Rep.	Title
1st	8-4-79	J Pynchon	1620 to 1645	A. McGinnis	DF
2nd			to		

Casing record of well: 8 5/8" cem. 921', TD 921' (standing cemented)

OPERATION: Testing ~~(inspecting)~~ the blowout prevention equipment and installation.
DECISION: The blowout prevention equipment and installation are approved.

Proposed Well Opns: D MPSP: ____ psi
Hole size: 12¼ " fr. 0 ' to 5 ', 7⅞ " to TD ' & ____ " to ____ '

REQUIRED BOPE CLASS TE B 2M

CASING RECORD (BOPE ANCHOR STRING ONLY)					Cement Details	Top of Cement	
Size	Weight(s)	Grade (s)	Shoe at	CP at		Casing	Annulus
8⅝	24	K55			267 sx 9 w 4% & 1 3% CaCl2 => 160 sx 5 w 3% CaCl2		SWF

BOP STACK							a	b	a/b	TEST DATA			
API Symb.	Ram Sz.	Mfr.	Model or Type	Size In.	Oper. Press	Date Last Overhaul	Gal. to Close	Rec.Time Min.	Calc.GPM Output	psi Drop to Close	Secs.to Close	Test Date	Test Press
		H	B		3M							8-4	1100
		S	DR		✓							✓	1200
		S	GSO		✓							✓	DF

ACTUATING SYSTEM			
Accum.Unit(s) Wkg.Press. 1500 psi			
Total Rated Pump Output ____ gpm			
Distance From Well Bore 75 ft.			
	Mfr.	Accum. Cap.	Precharge
1	H	80 gal.	750 psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.
Manif. at accum.unit		✓
Remote at Drlr's stn.	✓	
Other:		

EMERG. BACKUP SYST.			Press.	Wkg.Fl.
✓ N2 Cyl	No:	Tpe:	1	gal
Other:			2	gal
STD			3	gal
			4	gal
			5	gal
			6	gal

AUXILIARY EQUIPMENT	No.	Sz. (in)	Rated Press.	Connections Weld	Flan.	Thrd.
✓ Fill-Up Line						
✓ Kill Line						
✓ Control Valve(s)						
✓ Check Valve(s)						
✓ Auxil. Pump Connec.						
✓ Choke Line						
✓ Control Valve(s)						
✓ Pressure Gauge						
✓ Adjustable Choke(s)						
✓ Bleed Line						
✓ Upper Kelly Cock						
✓ Lower Kelly Cock						
✓ Standpipe Valve						
✓ Standpipe Pressure Ga.						
✓ Pipe Safety Valve						
✓ Internal Preventer						

HOLE FLUID MONITORING EQUIPMENT	Alarm		Class
	Aud.	Vis.	
✓ Calibrated Mud Pit			A
Pit Level Indicator			B
Pump Stroke Counter			B
✓ Pit Level Recorder	✓	✓	C
Flow Sensor			C
Mud Totalizer			C
Calibrated Trip Tank			C
Other:			C

REMARKS: 1 kelcock on line.

Hole Fluid Type	Weight	Storage-Pits
NDF		

OGD9 (8-76-GSR1-2M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 679-317

REPORT ON PROPOSED OPERATIONS

-- (field code)
-- (area code)
-- (pool code)

Newell B. Hunnicutt, Agent
HUNNICUTT AND CAMP DRILLING COMPANY
Post Office Box 399
Rio Vista, CA 94571

Woodland, California
September 5, 1979

Your proposal to abandon well "Maehl Unit 1" 1,
A.P.I. No. 077-20332, Section 10, T. 2S, R. 6E, M.D. B. & M.,
---, field, ---, area, ---, pool,
San Joaquin County, dated 8-22-79, received 8-23-79 has been examined in conjunction with records filed in this office.

THE PROPOSAL, COVERING WORK ALREADY COMPLETED IN ACCORDANCE WITH PRIOR AGREEMENT, IS APPROVED.

THIS DIVISION SHALL BE NOTIFIED:
a. To witness the location and hardness of the cement plug from 971' to 700'.
b. To witness the placing of the surface plug.
c. To inspect and approve the clean-up of the wellsite before approval of abandonment will be issued.

NOTE: RECORDS FOR WORK DONE UNDER THIS APPROVAL ARE DUE WITHIN 60 DAYS AFTER COMPLETION OF THE WORK AND/OR SUSPENSION OF OPERATIONS.

Blanket Bond
KPH:kw

A copy of this report must be posted at the well site prior to commencing operations.

M. G. MEFFERD, State Oil and Gas Supervisor

By John C. Sullivan
Deputy Supervisor
John C. Sullivan

OG111 (1-79-GSRI-5M)

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
AUG 23 1979
~~WOODLAND, CALIFORNIA~~

Notice of Intention to Abandon Well

This notice must be given at least five days before work is to begin.

FOR DIVISION USE ONLY			
CARDS	BOND	FORMS 114	FORMS 121
✓	B/B	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3229, Division 3, Public Resources Code, notice is hereby given that it is our intention to abandon Well No. "Maehl Unit 1-1", API No. _____,

Sec. 10, T2S, R.6E, M.D.B. & M., ~~W.W. McMillan Ranch~~ Field, San Joaquin County,

commencing work on August 20, 1979.

The present condition of the well is:

1. Total depth: 9,000'

2. Complete casing record, including plugs and perforations:

8 5/8", 24#, K-55 cemented at 921'

3. Last produced None
(Date) (Oil, B/D) (Gas, Mcf/D) (Water, B/D)

or

4. Last injected None
(Date) (Water, B/D) (Gas, Mcf/D) (Surface pressure)

Additional data for dry hole (show depths)

5. Oil or gas shows None

6. Stratigraphic markers: Top of Blewett Sands 4959'
Top of Ragged Valley Silt 5770'
Top Tracy Sand 6130'
Top of Lathrop Sands 8833'

7. Formation and age at total depth: Lathrop

8. Base of fresh water sands: 750' (?) (Actual? depth shown on "P" (Drill) is 400'

The proposed work is as follows:

1. Hang drill pipe at 971' and place cement plug up to at least 650'.
2. Place 25 lineal feet of cement inside 8 5/8" casing at surface.
3. Weld on steel plate and abandon surface location.

(Above program approved by Division of Oil & Gas 8/20/79)

Arson Shahazahian/ Sullivan 8-30-79
Arson said an error was made in not checking drill "P" ——— (Copy of rig had been lost) will not happen again OK VCI

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address P.O. Box 399 (Street)
Rio Vista, CA. 94571 (City) (State) (Zip)
Telephone Number 707-374-2425

Hunnicutt & Camp Drilling Company (Name of Operator)
By Rendell B. Hunnicutt (Name) 8/22/79 (Date)
Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

OG108 (12-73-GSR1-15M)

STATE OF CALIFORNIA—THE RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS
117 WEST MAIN STREET, SUITE No. 11
WOODLAND, CALIFORNIA 95695
(916) 662-4683

August 29, 1979

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING CO.
Post Office Box 399
Rio Vista, California 94571

Re: Hunnicutt & Camp Drilling Co.
Well "Maehl Unit 1" 1
Sec. 10, T. 2S., R. 6E., M.D.B.& M.
San Joaquin County

Dear Mr. Hunnicutt:

We are in receipt of the Notice of Intention to Abandon (Form OG 108) for the above well. Item 8 of the notice states that the base of the fresh water sands is at 750' (?). How was this figure determined? The best information that the Division has is that the base of the fresh water deposits should be encountered at a shallower depth. Our Report on Proposed Operations (P679-253, dated August 2, 1979) indicated a depth of approximately 400'.

Please inform this office of how the figure of 750' was determined. The notice cannot be answered or the abandonment approved until the information has been furnished to the Division.

Yours truly,

John C. Sullivan

JOHN C. SULLIVAN
Deputy Supervisor

JCS:kw

SAN JOAQUIN COUNTY
PLANNING
DEPARTMENT
1810 E. HAZELTON AVE., STOCKTON, CALIF. 95205. PHONE 944-2203. (AREA CODE 209)
WOODLAND, CALIFORNIA

DIVISION OF OIL AND GAS
RECEIVED
AUG 3 1979

August 1, 1979

State Division of Oil and Gas
1416 Ninth Street, Room 1316
Sacramento, California 95814

RECEIVED
AUG - 2 1979
DIVISION OF OIL & GAS
SACRAMENTO

Ladies and Gentlemen:

RE: DP-80-7

On August 1, 1979 the San Joaquin County Planning Department approved an application No. DP-80-7 to drill for gas and/or oil on property located on the south side of Williamson Road, 690' west of Woodward Avenue, southwest of Manteca.

The property is owned by R & J MAEHL, and applicant was Hunnicutt & Camp Drilling Co., P.O. Box 399, Rio Vista, CA.

Development Plans are processed as ministerial projects by San Joaquin County.

If you have any questions please do not hesitate to contact this office.

Very truly yours,

DOM DE LA TORRE
PLANNER II

DD:gm
cc: Hunnicutt & Camp Drilling Co.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 679-253

REPORT ON PROPOSED OPERATIONS

--- (field code)
--- (area code)
--- (pool code)

WELL CLASSIFICATION:
EXPLORATORY-OUTPOST

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING CO.
Post Office Box 399
Rio Vista, California 94571

Woodland, California
August 2, 1979

Your proposal to drill well "Maehl Unit 1" 1,
A.P.I. No. 077-20332, Section 10, T. 2S, R. 6E, M.D. B. & M.,
--- field, --- area, --- pool,
San Joaquin County, dated 7-31-79, received 7-31-79 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. The 8 5/8" casing is cemented with sufficient cement to fill behind this casing from the shoe to the ground surface.
2. The 4 1/2" casing is cemented with sufficient cement to fill behind this casing from the shoe to at least 500 feet above the uppermost oil or gas zone.
3. Drilling fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts is used.
4. Blowout prevention equipment conforming to Class III B 2M requirements is installed on the 8 5/8" casing and maintained in operating condition at all times. See Manual M07 and attached sheet.
5. Adequate blowout prevention equipment is installed on the 4 1/2" casing and maintained in operating condition at all times.
6. Water with any beneficial use is protected from contamination at all times.
7. THIS DIVISION IS NOTIFIED:
   a. Before deviating from the proposed casing program and/or placing any plugs in the hole. Additional requirements shall be outlined at that time.
   b. To witness a test of the installed blowout prevention equipment prior to drilling out the shoe of the 8 5/8" casing. The blind/blank rams shall be tested by the operator prior to calling the Division inspector. Test information of the blind/blank ram test shall be entered on the tour sheet along with the signature of the person in charge.
   c. To witness a test of the 4 1/2" water shut-off.

NOTE: 1. RECORDS FOR WORK DONE UNDER THIS APPROVAL ARE DUE WITHIN 60 DAYS AFTER COMPLETION OF THE WORK AND/OR SUSPENSION OF OPERATIONS.

2. Information on file in this office indicates that the base of useable fresh water deposits should be encountered at a depth of approximately 400'.

Blanket Bond Arson Shahazarian / Campion 25' surface
JWP:kw

BFW = 750 700
shoe = 921 971

A copy of this report must be posted at the well site prior to commencing operations.

M. G. MEFFERD, State Oil and Gas Supervisor

By John C. Sullivan jwp
Deputy Supervisor
John C. Sullivan

OG111 (1-79-GSRI-5M)

Exploratory outpost BFW = 400'

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS
Notice of Intention to Drill New Well

DIVISION OF OIL AND GAS
RECEIVED
JUL 31 1979
WOODLAND, CALIFORNIA

C.E.Q.A. INFORMATION			
EXEMPT ☐ CLASS____	NEG. DEC. ☐ S.C.H. NO.____	E.I.R. ☐ S.C.H. NO.____	DOCUMENT NOT REQUIRED BY LOCAL JURISDICTION XX
See Reverse Side			

FOR DIVISION USE ONLY					
MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
604	JK	V	8/1/82	✓	✓

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to commence drilling well "Maehl Unit 1" #1, API No. 077-20332 (Assigned by Division),

Sec. 10, T. 2S, R. 6E, M.D.B. & M., ~~NW McMullin Ranch~~ Field, San Joaquin County.

Legal description of mineral-right lease, consisting of 25.4 acres, is as follows: See Attached (Attach map or plat to scale)

Do mineral and surface leases coincide? Yes X No____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of well 384 feet North (Direction) ~~along section / property line~~ (Cross out one) and 690 feet West (Direction)

~~at right angles to said line~~ from the Southeast corner of section / ~~property~~ (Cross out one) 10 or T2S/R6E, MDB&M

Is this a critical well according to the definition on the reverse side of this form? Yes ☐ No ☒

If well is to be directionally drilled, show proposed coordinates (from surface location) at total depth: ____ feet ____ (Direction) and ____ feet ____ (Direction)

Elevation of ground above sea level 24 16 (history) feet.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table, or Kelly Bushing) that is ~~13.5~~ 18 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES API	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	CALCULATED FILL BEHIND CASING
8 5/8	24#	K-55	Surface	900'	900'	Cemented solidly to surface
4½	11.6#	N-80	Surface	9000'	9000'	500' above top of producing zone

(A complete drilling program is preferred and may be submitted in lieu of the above program.)

Intended zone(s) of completion Lathrop, 8200', normal hydrostatic (Name, depth, and expected pressure) Estimated total depth 9000'

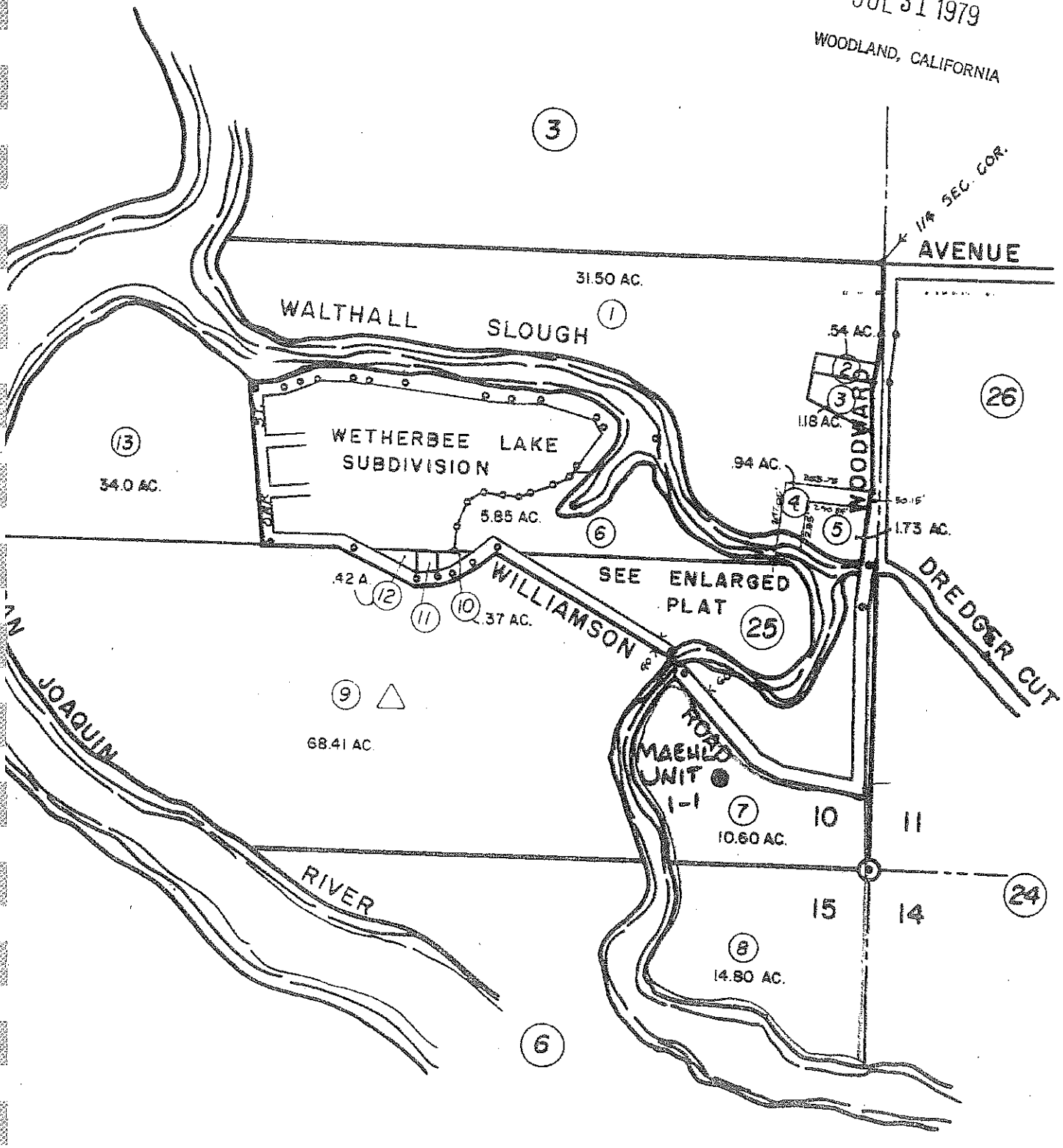
It is understood that if changes in this plan become necessary we are to notify you immediately.

Name of Operator	Type of Organization (Corporation, Partnership, Individual, etc.)	
Hunnicutt & Camp Drilling Company	Corporation	
Address P.O. Box 399	**City** Rio Vista, CA.	**Zip Code** 94571
Telephone Number 707-374-2425	**Name of Person Filing Notice** Newell B. Hunnicutt	**Signature** Newell B. Hunnicutt / **Date** 7/31/79

This notice and indemnity or cash bond shall be filed, and approval given, before drilling begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

OG105 (10-78-GSRI-10M)

DIVISION OF OIL AND GAS
RECEIVED
JUL 31 1979
WOODLAND, CALIFORNIA



T2S/R6E, MDB&M

SAN JOAQUIN COUNTY

1" = 600'

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Reported: 03/25/08
	Client P.O.:	Date Completed: 03/25/08

WorkOrder: 0803452

March 25, 2008

Dear Wakil:

Enclosed within are:

1) The results of the 4 analyzed samples from your project: **11515.E1; Manteca Trail,2368 E Wo**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

Chain of Custody

Reference No. ____
Page ____ of ____

TERRASEARCH INC.
357 WEST PACIFIC AVENUE, LIVERMORE, CALIFORNIA 94550 PHONE (925) 245-1367

Sample ID	Date	Time	Matrix	Preserv.	No. Containers	TPH Gasoline (EPA 5030/8015)	TPH as Diesel	Total Extractable Petroleum Hydrocarbons	BTEX (EPA 5030/8020)	BTEX (EPA 5030/8021)	BTEX (EPA 5030/8260)	Fuel Oxygenates (EPA 5030/8260)	Lead (EPA 7421)	Lead (EPA 7420)

PRESERVATION: ICE | HNO3 | H2SO4 | OTHER

Project Information

Project Name:
Project No.:
Site Address:
Project Manager:
Sampler's Signature:

Sample Receipt

Total no. of containers:
Chain of Custody Seal:
Received Good Condition/Cold:
Conforms to Record:

Report Level

[ ] Regular [ ] Level 2
[ ] Level 3 [ ] Level 4

Turn Around Time: Standard 5-Day 24 hr 48 hr 72 hr
(Please Check Box)

Special Instruction/Comments:

Relinquished By:
Company:
Time: Date:
Received By:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Received By:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Received By:
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Time: Date:
Received By:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Received By:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Received By:
Printed Name:
Signature:

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0803452 **ClientCode: TSIL**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Wakil Mateen
TERRASEARCH Inc.
257 Wright Brothers Ave.
Livermore, CA 94550

Email: wakilm@terrasearchinc.com
TEL: (925) 243-6662 FAX: (925) 243-6663
PO:
ProjectNo: 11515.E1; Manteca Trail,2368 E Woodward Ave

Bill to:
Angelica Garcia
TERRASEARCH Inc.
322 Piercy Road
San Jose, CA 95138
agarcia@terrasearchinc.com

Requested TAT: 5 days

Date Received: 03/18/2008
Date Printed: 03/18/2008

					Requested Tests (See legend below)											
Lab ID	Client ID	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0803452-001	CS-1 South Wall	Soil	3/18/2008 13:30	☐	A											
0803452-002	CS-2 North Wall	Soil	3/18/2008 13:35	☐	A											
0803452-003	CS-3 East Wall	Soil	3/18/2008 13:45	☐	A											
0803452-004	CS-4 West Wall	Soil	3/18/2008 14:15	☐	A											

Test Legend:

1	TPH(D)WSG_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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"When Quality Counts"

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Telephone: 877-252-9262 Fax: 925-252-9269

Sample Receipt Checklist

Client Name: TERRASEARCH Inc.
Date and Time Received: 03/18/08 5:48:36 PM

Project Name: 11515.E1; Manteca Trail,2368 E Woodward Ave
Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: 0803452 Matrix Soil
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 23.9°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑

Client contacted: Date contacted: Contacted by:

Comments:

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Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/20/08-03/25/08

Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3550C/3630C Analytical methods: SW8015C Work Order: 0803452

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0803452-001A	CS-1 South Wall	S	ND	1	105
0803452-002A	CS-2 North Wall	S	ND	1	118
0803452-003A	CS-3 East Wall	S	ND	1	109
0803452-004A	CS-4 West Wall	S	ND	1	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; r) results are reported on a dry weight basis

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"
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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0803452

EPA Method SW8015C	Extraction SW3550C/3630C				BatchID: 34415			Spiked Sample ID: 0803377-013A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	ND	20	106	108	1.66	101	102	1.81	70 - 130	30	70 - 130	30
%SS:	116	50	117	117	0	115	117	1.36	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34415 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803452-001A	03/18/08 1:30 PM	03/18/08	03/25/08 12:04 PM	0803452-002A	03/18/08 1:35 PM	03/18/08	03/20/08 2:34 AM
0803452-003A	03/18/08 1:45 PM	03/18/08	03/20/08 3:12 PM	0803452-004A	03/18/08 2:15 PM	03/18/08	03/20/08 1:56 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Reported: 03/25/08
	Client P.O.:	Date Completed: 03/25/08

WorkOrder: 0803453

March 25, 2008

Dear Wakil:

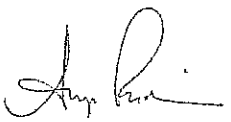
Enclosed within are:

1) The results of the 2 analyzed samples from your project: **11515.E1; Manteca Trail,2368 E Wo**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,



Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

Chain of Custody

Reference No. [illegible]
Page [illegible]

TERRASEARCH INC.
257 WAINWRIGHT PROPERTIES AVENUE, LIVERMORE CALIFORNIA 94551 PH (925) 245-7600

Sample ID	Date	Time	Matrix	Preserv.	No. Containers	TPH as Gasoline (EPA 8015)	TPH as Diesel (EPA 8015)	Total Petroleum Hydrocarbons (EPA 418.1)	BTEX (EPA 8020)	MTBE (EPA 8020)	Total Petroleum Hydrocarbons (EPA 8015)	BTEX & MTBE (EPA 8020)	Total Lead (7420 or 7421)	Lead (EPA 7420 or 7421)			
B-1 (5')	4/9/96	3:05	Soil	Ice	1	X		X		X				X			
B-2 (5')	4/9/96	3:40	"	"	1	X		X		X				X			

Project Information

Project Name: Linden Road
Project No.: [illegible]
Site Location: [illegible]
Project Manager: [illegible]
Sampler's Signature: [illegible]

Sample Receipt

Total no. of containers: 2
Chain of custody seals:
Rec'd Good Cond./Cold:
Conforms to record:

Report Level
( ) Routine ( ) Level C
( ) Level B ( ) Level D

Turnaround Time: Standard 5 Day / 24hr / 48hr / 72hr
Preservation: Ice / Other
Special Instructions/Comments: [illegible]

Relinquished By:
Company: [illegible]
Time: [illegible] Date: [illegible]
Place: [illegible]
Printed Name: [illegible]
Signature: [illegible]

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

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Relinquished By:
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Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0803453 **ClientCode: TSIL**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Wakil Mateen
TERRASEARCH Inc.
257 Wright Brothers Ave.
Livermore, CA 94550

Email: wakilm@terrasearchinc.com
TEL: (925) 243-6662 FAX: (925) 243-6663
PO:
ProjectNo: 11515.E1; Manteca Trail,2368 E Woodward Ave

Bill to:
Angelica Garcia
TERRASEARCH Inc.
322 Piercy Road
San Jose, CA 95138
agarcia@terrasearchinc.com

Requested TAT: 5 days

Date Received: **03/18/2008**
Date Printed: **03/18/2008**

					Requested Tests (See legend below)											
Lab ID	Client ID	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0803453-001	CB-1 Bottom (South)	Soil	3/18/2008 15:05	☐	A	A	A	A								
0803453-002	CB-2 Bottom (North)	Soil	3/18/2008 16:05	☐	A	A	A	A								

Test Legend:

1	8082A_PCB_S	2	8260B_S	3	G-MBTEX_S	4	TPH(DMO)WSG_S	5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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Telephone: 877-252-9262 Fax: 925-252-9269

Sample Receipt Checklist

Client Name: TERRASEARCH Inc.
Date and Time Received: 03/18/08 5:56:29 PM

Project Name: 11515.E1; Manteca Trail,2368 E Woodward Ave
Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: 0803453 Matrix Soil
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 23.9°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑

Client contacted: Date contacted: Contacted by:

Comments:

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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/21/08-03/25/08

Polychlorinated Biphenyls (PCBs) Aroclors by GC-ECD*

Extraction Method: SW3550C Analytical Method: SW8082A Work Order: 0803453

Lab ID	0803453-001A	0803453-002A			Reporting Limit for DF =1	
Client ID	CB-1 Bottom (South)	CB-2 Bottom (North)				
Matrix	S	S				
DF	1	1			S	W
Compound	**Concentration**				**mg/kg**	**ug/L**
Aroclor1016	ND	ND			0.025	NA
Aroclor1221	ND	ND			0.025	NA
Aroclor1232	ND	ND			0.025	NA
Aroclor1242	ND	ND			0.025	NA
Aroclor1248	ND	ND			0.025	NA
Aroclor1254	ND	ND			0.025	NA
Aroclor1260	ND	ND			0.025	NA
PCBs, total	ND	ND			0.025	NA
Surrogate Recoveries (%)						
%SS:	105	102				
Comments		o				

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

(h) a lighter than water immiscible sheen/product is present; (i) liquid sample that contains >~1 vol. % sediment; (j) sample diluted due to high organic content/matrix interference; (k) p,p,- is the same as 4,4,-; (l) florisil (EPA 3620) cleanup; (m) silica-gel (EPA 3630) cleanup; (n) elemental sulfur (EPA 3660) cleanup; (o) sulfuric acid permanganate (EPA 3665) cleanup; (p) see attached narrative; q) reporting limit raised due to insufficient sample amount; (r) results are reported on a dry weight basis;

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc.	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
257 Wright Brothers Ave.	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
Livermore, CA 94550	Client P.O.:	Date Analyzed 03/24/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0803453

Lab ID	0803453-001A
Client ID	CB-1 Bottom (South)
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	Acrolein (Propenal)	ND	1.0	0.05
Acrylonitrile	ND	1.0	0.02	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	2-Chloroethyl Vinyl Ether	ND	1.0	0.01
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
2-Chlorotoluene	ND	1.0	0.005	4-Chlorotoluene	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromo-3-chloropropane	ND	1.0	0.004
1,2-Dibromoethane (EDB)	ND	1.0	0.004	Dibromomethane	ND	1.0	0.005
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
1,3-Dichloropropane	ND	1.0	0.005	2,2-Dichloropropane	ND	1.0	0.005
1,1-Dichloropropene	ND	1.0	0.005	cis-1,3-Dichloropropene	ND	1.0	0.005
trans-1,3-Dichloropropene	ND	1.0	0.005	Diisopropyl ether (DIPE)	ND	1.0	0.005
Ethylbenzene	ND	1.0	0.005	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Hexachlorobutadiene	ND	1.0	0.005
Hexachloroethane	ND	1.0	0.005	2-Hexanone	ND	1.0	0.005
Isopropylbenzene	ND	1.0	0.005	4-Isopropyl toluene	ND	1.0	0.005
Methyl-t-butyl ether (MTBE)	ND	1.0	0.005	Methylene chloride	ND	1.0	0.005
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005	Naphthalene	ND	1.0	0.005
Nitrobenzene	ND	1.0	0.1	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)			
%SS1:	96	%SS2:	98
%SS3:	98		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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TERRASEARCH Inc.	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
257 Wright Brothers Ave.	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
Livermore, CA 94550	Client P.O.:	Date Analyzed 03/24/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0803453

Lab ID	0803453-002A
Client ID	CB-2 Bottom (North)
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	Acrolein (Propenal)	ND	1.0	0.05
Acrylonitrile	ND	1.0	0.02	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	2-Chloroethyl Vinyl Ether	ND	1.0	0.01
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
2-Chlorotoluene	ND	1.0	0.005	4-Chlorotoluene	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromo-3-chloropropane	ND	1.0	0.004
1,2-Dibromoethane (EDB)	ND	1.0	0.004	Dibromomethane	ND	1.0	0.005
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
1,3-Dichloropropane	ND	1.0	0.005	2,2-Dichloropropane	ND	1.0	0.005
1,1-Dichloropropene	ND	1.0	0.005	cis-1,3-Dichloropropene	ND	1.0	0.005
trans-1,3-Dichloropropene	ND	1.0	0.005	Diisopropyl ether (DIPE)	ND	1.0	0.005
Ethylbenzene	ND	1.0	0.005	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Hexachlorobutadiene	ND	1.0	0.005
Hexachloroethane	ND	1.0	0.005	2-Hexanone	ND	1.0	0.005
Isopropylbenzene	ND	1.0	0.005	4-Isopropyl toluene	ND	1.0	0.005
Methyl-t-butyl ether (MTBE)	ND	1.0	0.005	Methylene chloride	ND	1.0	0.005
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005	Naphthalene	ND	1.0	0.005
Nitrobenzene	ND	1.0	0.1	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)			
%SS1:	95	%SS2:	97
%SS3:	97		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/19/08

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0803453

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	CB-1 Bottom (South)	S	ND	---	ND	ND	ND	ND	1	86
002A	CB-2 Bottom (North)	S	ND	---	ND	ND	ND	ND	1	82

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) value derived using a client specified carbon range; o) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/20/08

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3550C/3630C Analytical methods: SW8015C Work Order: 0803453

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0803453-001A	CB-1 Bottom (South)	S	ND	ND	1	117
0803453-002A	CB-2 Bottom (North)	S	ND	ND	1	116
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L		
	S	1.0	5.0	mg/Kg		

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; r) results are reported on a dry weight basis

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8082A

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8082A	Extraction SW3550C			BatchID: 34417				Spiked Sample ID: 0803377-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/kg	mg/kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Aroclor1260	ND	0.075	99.5	102	2.40	94.9	95.2	0.279	70 - 130	20	70 - 130	20
%SS:	91	0.050	95	97	2.27	94	93	0.724	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34417 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/21/08 2:30 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/24/08 6:19 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8260B	Extraction SW5030B			BatchID: 34452				Spiked Sample ID: 0803480-001A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	87	88	1.13	86.4	87.9	1.62	60 - 130	30	60 - 130	30
Benzene	ND	0.050	79	74.8	5.37	75	79.1	5.34	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	117	120	2.35	107	104	3.04	60 - 130	30	60 - 130	30
Chlorobenzene	ND	0.050	83.6	79.4	5.19	79.2	81.2	2.44	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	85.4	85.1	0.393	80.2	83.9	4.54	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	118	115	2.91	107	116	7.74	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	86.6	82.4	4.91	81.6	84.5	3.53	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	92.1	91.5	0.691	89.8	92.6	3.07	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	79.1	78.6	0.730	107	112	4.58	60 - 130	30	60 - 130	30
Toluene	ND	0.050	82	76.5	7.02	78.5	81.4	3.70	60 - 130	30	60 - 130	30
Trichloroethene	ND	0.050	77.7	70.3	10.1	73.9	75.7	2.40	60 - 130	30	60 - 130	30
%SS1:	102	0.050	110	111	0.987	106	106	0	70 - 130	30	70 - 130	30
%SS2:	99	0.050	101	101	0	100	102	1.43	70 - 130	30	70 - 130	30
%SS3:	98	0.050	105	108	3.11	108	108	0	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34452 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/24/08 3:57 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/24/08 4:41 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8021B/8015Cm	Extraction SW5030B			BatchID: 34424				Spiked Sample ID: 0803411-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	0.60	93.5	89.2	4.73	106	103	3.49	70 - 130	20	70 - 130	20
MTBE	ND	0.10	101	96.1	5.45	107	103	4.37	70 - 130	20	70 - 130	20
Benzene	ND	0.10	97.4	96.4	1.12	109	111	2.07	70 - 130	20	70 - 130	20
Toluene	ND	0.10	87.2	84.1	3.34	101	104	3.42	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	99.3	96.4	3.03	108	112	3.76	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	95.3	91.8	3.68	104	106	2.58	70 - 130	20	70 - 130	20
%SS:	98	0.10	89	89	0	99	102	3.02	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34424 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/19/08 10:30 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/19/08 6:43 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8015C	Extraction SW3550C/3630C			BatchID: 34415				Spiked Sample ID: 0803377-013A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	ND	20	106	108	1.66	101	102	1.81	70 - 130	30	70 - 130	30
%SS:	116	50	117	117	0	115	117	1.36	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34415 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/20/08 1:28 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/20/08 12:22 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

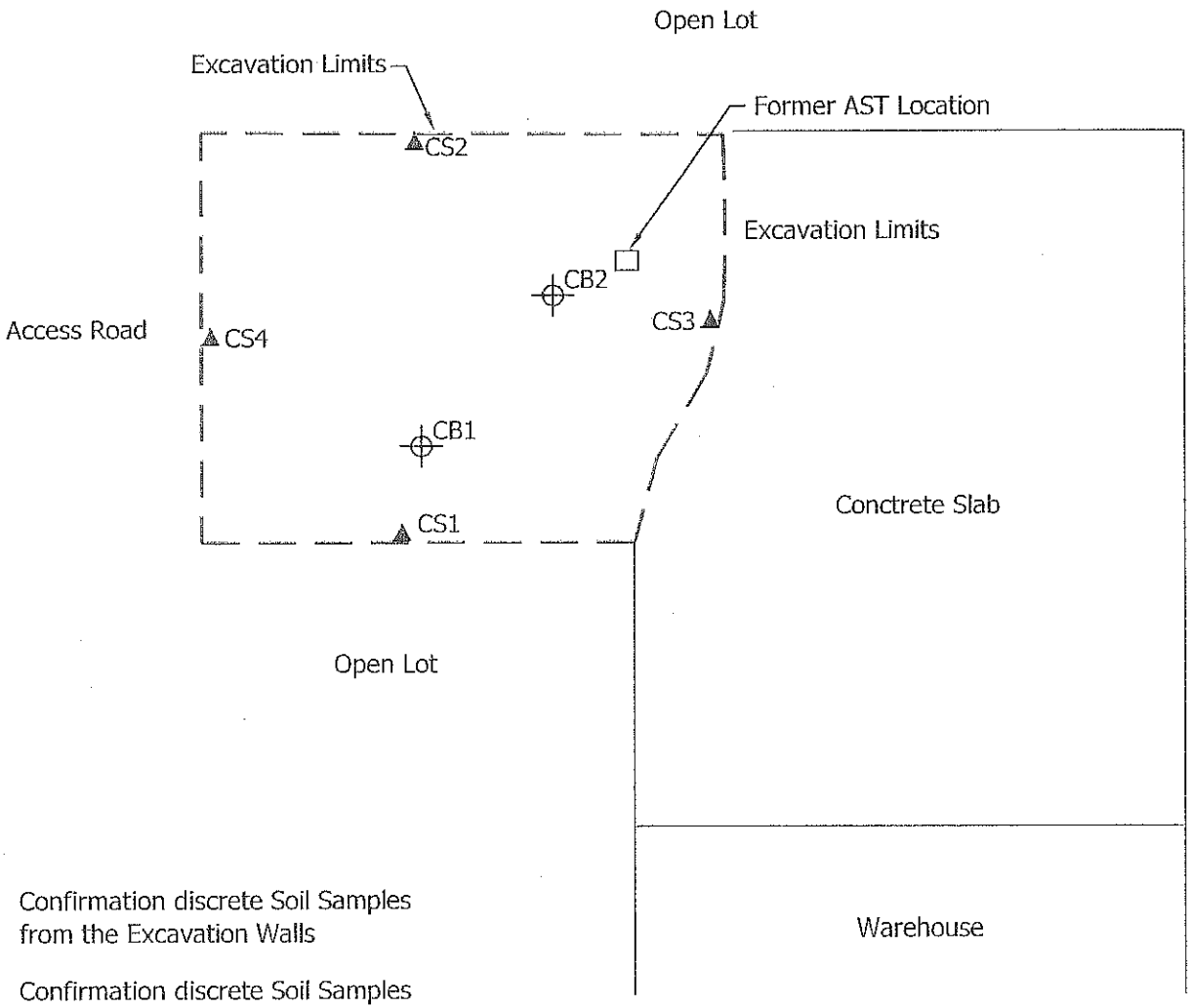
DHS ELAP Certification N° 1644

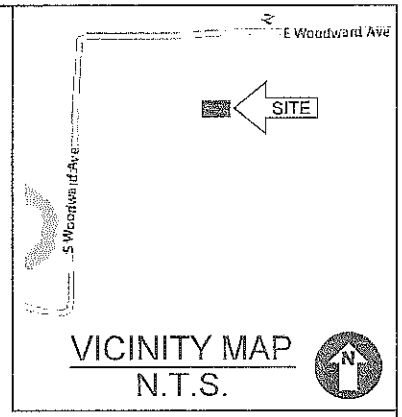
QA/QC Officer

TABLE 1
LABORATORY ANALYTICAL RESULTS OF CONFIRMATIOIN SOIL SAMPLES
2368 East Woodward Avenue, Manteca, CA
Project No. 11515.E1
March 18, 2008

Sample ID	TPHg (mg/Kg)	BTEX (mg/Kg)	TEPHd (mg/Kg)	TEPHmo (mg/Kg)	VOCs (mg/Kg)	PCBs (mg/Kg)
CS-1 south wall	NA	NA	ND<1.0	NA	NA	NA
CS-2 north wall	NA	NA	ND<1.0	NA	NA	NA
CS-3 east wall	NA	NA	ND<1.0	NA	NA	NA
CS-4 west wall	NA	NA	ND<1.0	NA	NA	NA
CB-1 south bottom	ND<1.0	ND<0.005	ND<1.0	ND<5.0	ND<0.005-0.1	<0.025
CB-2 north bottom	ND<1.0	ND<0.005	ND<1.0	ND<5.0	ND<0.005-0.1	<0.025
ESLs	*100*	--	*100*	*410*	--	*0.089*

TPHg	=	Total petroleum hydrocarbons reported as gasoline
BTEX	=	Benzene, toluene, ethylbenzene, xylenes
TEPHmo	=	Total petroleum hydrocarbons reported as motor oil
VOCs	=	Volatile organic compounds
PCBs	=	Polychlorinated Biphenyls
NA	=	Not analyzed
ND	=	None Detected see laboratory reports for specific compound and detection limit.
<	=	Less than laboratory detection limit.
mg/Kg	=	Milligrams per kilogram, equivalent to parts per million (ppm).
ESLs	=	Environmental Screening Levels for Shallow Soils and Groundwater (less than 3 meters) by RWQCB, November 2007.





LEGEND

▲CS4	Confirmation discrete Soil Samples from the Excavation Walls
⊕CB1	Confirmation discrete Soil Samples from the the bottom of Excavation

GEOTECHNICAL ENGINEERS AND GEOLOGISTS

TERRASEARCH INC.

257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94551 PHONE: (925) 243-6662

SITE PLAN

SOIL REMEDIATION AST SITE
TRAILS OF MANTECA
2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

Project No.	Drawn by:
11515.E1	GC
Scale:	Date:
≈ 1" = 10'	03/2008

Figure No. 1



Figure 2A: Viewing stained soil beneath the former AST location.



Figure 2B: A JT (contractor) excavator excavating stained soil at the AST site.

SITE PHOTOGRAPHS

Environmental • Geotechnical • Special Inspections • Materials Testing
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-6862

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	AWM

FIGURE
2



FIGURE 3A: A view of east side wall of excavation.



FIGURE 3B: Viewing the southeastern portion of the excavation.

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 3



FIGURE 4A: Viewing west side of excavation.



FIGURE 4B: Removing concrete slab from AST site (east side of the excavation).

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 4



FIGURE 5A: Viewing south wall of the excavation. Warehouse is also observed south of excavation.



FIGURE 5B: Viewing at the east wall of excavation.

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 5



FIGURE 6A: Viewing at the bottom of excavation.



FIGURE 6B: A view of excavation, secured by JT contractor.

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 6

04/08/2008 13:39 1-209-368-1851 JIM THORPE OIL INC. PAGE 01/16

FORWARD, INCORPORATED

9 South Austin Road
nteca, CA 95336
dfill: (209) 982-4298 Fax: (209) 982-1009
Resource Recovery: (209) 982-4298

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-6462
Fax: (209) 466-0631

DATE 03/08

TRUCK LIC.# [illegible]

CUSTOMER NO. 7008

TRUCK NO. 6

TRAILER LIC. #

☑ Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

BILL TO: Hazardous [illegible]

ANCE NO.

7008

ECTIVE EQUIPMENT

PIRATOR ☑ HARD HAT

S:

SIZE YDS.	DESCRIPTION	NOTES		
	☐ REFUSE ☐ TREATED WOOD		73360	GROSS
	☐ SLUDGE ☐ ASH		32660	TARE
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS		40700	NET
10	☐ SOIL ☑ SOIL		20.35	TONS
	☐ STOCKPILE			

IN A.M./P.M.

OUT A.M./P.M.

Signed

☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY Manteca

TRANSPORTER Jim Thorpe Oil Inc

ADDRESS PO Box 351

CITY, STATE, ZIP Linden CA 95236

PHONE 727-5181

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
7B63581	6

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

SIGNATURE OF AUTHORIZED AGENT OR DRIVER * [signature] DATE 3-17-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT * [signature] DATE

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 2[illegible]

25589

☐ Keller Canyo
Sanitary Lan
901 Bailey Road
Pittsburg, CA 9456
Phone (925) 458-
Fax (925) 458-98

FORWARD INCORPORATED

9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4298 Fax (209) 982-4000
Resource Recovery: (209) 982-4298

Stockton, CA 95206
Main Office: (209) 466-4481
Fax: (209) 463-0631

DATE 4/8/2008

TRUCK LIC.#

CUSTOMER NO. 1100

TRUCK NO. 40

TRAILER LIC.#

BILL TO: Hazardous Disposal

GENERATOR

MAILING ADDRESS

CITY, STATE, ZIP

PHONE 209

CONTACT PERSON

SIGNATURE OF AUTH

*

25537

GENERATOR'S CERTIFICATION: I hereby certify that the above named materials are not waste as defined by 40 CFR Part 261 or any applicable state law, and are not otherwise described, classified and packaged, marked and labeled/placarded according to applicable regulations; AND, if the waste is exempt from the definition of hazardous waste or is not subject to the Land Disposal Restrictions, it is further certified that it is in full compliance in accordance with the requirements of 40 CFR Part 268 or any applicable state law.

SIZE YDS:	DESCRIPTION	NOTES	
	☐ REFUSE ☐ TREATED WOOD		GROSS 80540
	☐ SLUDGE ☐ ASH		TARE 24000
20	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS		NET 40540
	☑ SOIL ☐ SOIL		TONS 20.42
	☐ STOCKPILE		

IN AM/PM

OUT AM/PM

WASTE TYPE:

☐ DISPOSAL
☐ CONSTRUCTION
☐ DEBRIS
☐ SPECIAL WASTE
☐ WOOD
☐ OTHER

GENERATING FACILITY Manteca

TRANSPORTER Jim Thorpe Oil Inc

ADDRESS PO Box 151

CITY, STATE, ZIP Lodi CA 95241

PHONE 209 [illegible]

SIGNATURE OF AUTHORIZED AGENT OR DRIVER

DATE 4/8/08

*

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9863581	40

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT

DATE

*

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 444802

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

FORWARD INCORPORATED

9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4298 Fax (209) 982-1009
Resource Recovery: (209) 982-4298

P.O. Box 6338
Stockton, CA 95206
Main Office: (209) 466-4481
Fax: (209) 466-5004

DATE 3/17/08

TRUCK LIC.#

CUSTOMER NO. 768

TRUCK NO.

TRAILER LIC. #

BILL TO: Hagen Dairy

GENERATOR

MAILING ADDRESS

CITY, STATE, ZIP

PHONE

CONTACT PERSON

SIGNATURE OF AUTHO

*

GENERATOR'S CERTIFICATION: I certify that the waste as defined by 40 CFR Part 261 is fully and accurately described, classified and packaged, and in all respects in proper condition for transportation according to applicable regulations; AND, if the waste is a hazardous waste as defined by 40 CFR Part 261 and subject to the Land Disposal Restrictions, that it is properly classified, described, packaged, marked and labeled, and in accordance with the requirements of 40 CFR Part 268 and 40 CFR Part 261.

WASTE TYPE: 3

- ☐ DISPOSAL
- ☐ CONSTRUCTION
- ☐ DEBRIS
- ☐ SPECIAL WASTE

GENERATING FACILITY: Manteca

SIZE YDS.	DESCRIPTION	NOTES
	☐ REFUSE ☐ TREATED WOOD	
	☐ SLUDGE ☐ ASH	
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS	
10	☐ II SOIL ☐ SOIL	
	☐ STOCKPILE	

74600	GROSS
30960	TARE
43640	NET
21.82	TONS

IN _____ A.M./P.M.

OUT _____ A.M./P.M.

Signed

☐ WOOD
☐ OTHER

TRANSPORTER TFT

ADDRESS PO 357

CITY, STATE, ZIP Ripon, Ca

PHONE 368-6175

SIGNATURE OF AUTHORIZED AGENT OR DRIVER * DATE 3-17-08

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
3883104	7

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT * DATE

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST #

FORWARD INCORPORATED

9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4298 Fax (209) 982-1009
Resource Recovery: (209) 982-4298

P.O. Box 6336
Stockton, CA 95206
Main Office: (209) 465-4482
Fax: (209) 465-0631

DATE 02-27-08

TRUCK LIC.# Thorpe

CUSTOMER NO. 7600 TRUCK NO. 7 TRAILER LIC. #

Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

BILL TO: Hazardous Disposal Specialist

TANCE NO. 7022

ECTIVE EQUIPMENT

SPIRATOR HARD HAT

SIZE YDS.	DESCRIPTION	NOTES
	☐ REFUSE ☐ TREATED WOOD	
	☐ SLUDGE ☐ ASH	
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS	
10	☐ SOIL ☐ SOIL	
	☐ STOCKPILE	

GROSS 82980
TARE 30160
NET 52820
TONS 26.51

IN ____ A.M./P.M.

OUT ____ A.M./P.M.

Signed

NOTES:

☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY MANTECA

TRANSPORTER FFT

ADDRESS PO Box 57

CITY, STATE, ZIP Lodi CA

PHONE 209-610-6165

SIGNATURE OF AUTHORIZED AGENT OR DRIVER DATE 2-27-08

VEHICLE LICENSE NUMBER	TRUCK NUMBER
3P83104	7

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

26.51

CUBIC YARDS 10

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT DATE

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL - ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 020615

FORWARD INCORPORATED

360792

199 South Austin Road/WEIGHING LOCATION
anteca, CA 95336
ndfill: (209) 982-4298 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

SITE	TICKET DATE	GRID
01	03-18-08	

SCALE OPERATOR

DATE	TIME IN	TIME OUT
18 MAR 2008	1341	1344

DATE WEIGHED	TIME WEIGHED	METHOD
18 MAR 2008	1344	SCALE

VEHICLE	TARE	ROLL OFF
TRUCK		

REFERENCE	EXPORT	ORIGIN

Tare Weight 82,760.00 LB
Net Weight 41,260.00 LB 20.71 TN

QTY	UNIT	DESCRIPTION	PRICE	EXTENSION	FEE TAX	FUEL TAX
1.00	EA	EARTH/DIRT/SOIL				
1.00	EA	ENVIRONMENTAL FEE -				
1.00	EA	FUEL RECOVERY FEE				

MANIFEST# 608206

20.7

LINE AMOUNT
TENDERED
CHANGE
CHECK NO.

DRIVER'S SIGNATURE

* 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* 03/18/08

CUBIC YARDS

20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☒ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL - ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # 608206

GENERATOR COPY

FORWARD INCORPORATED

1999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

360825

SITE	GRID
01	

SCALE OPERATOR	
[illegible] D	

TIME IN	TIME OUT
12 Mar 08 [illegible]	1100 am

DATE	TIME
12 March 2008	1102 am

VEHICLE ID	TRUCK OR TRAILER
MOFFE 2	

PREFERRED PIT	ORIGIN

MACKENZIE DIESEL SPECIALIST, INC.
1751 SCHOOL
[illegible] HWY 26, STE. 4
[illegible], CA 95242
[illegible]

Tare Weight 32,560.00 lb
Net Weight 37,260.00 lb 18.63 TN

QUANTITY	UNIT	DESCRIPTION	RATE	EXTENSION
17.63	TN	EARTH/DIRT/SOIL		
1.00	EA	ENVIRONMENTAL FEE		
1.00	EA	FUEL RECOVERY FEE		

1963

MANIFEST# 360825

LINE AMOUNT	
TENDERED	
CHANGE	
CHECK NO.	

DRIVER'S SIGNATURE

* [signature] 3-12-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT [signature] DATE

*

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☑ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # 618917

GENERATOR COPY

360687

FORWARD INCORPORATED

99 South Austin Road/WEIGHING LOCATION
nteca, CA 95336
ndfill: (209) 982-4298 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

007606
HAZARDOUS DISPOSAL SPECIALIST - INC.
LISA SONDOCK
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract# 7606#

SITE	SCALE/OPERATOR
OIL	SK67624 SCOTT K
DATE IN	TIME IN
18 MARCH 2008	1:40 PM
DATE OUT	TIME OUT
18 MARCH 2008	1:56 PM
TRUCK #	CUSTOMER # / ROLL OFF #
TRUCK 2	
REFERENCE # / CARRIER	ORIGIN

GROSS Weight 70,195.00 lb
Tare Weight 32,295.00 lb
Net Weight 37,900.00 lb 18.95 TN

QUANTITY	UNITS	DESCRIPTION	PRICE	EXTENSION	TAX	TOTAL
18.95	TN	EARTH/DIRT/SOIL				
1.00	EA	ENVIRONMENTAL FEE				
1.00	EA	FUEL RECOVERY FEE				

18.95

MANIFEST# 608209

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

DRIVER'S SIGNATURE

* 3/18/08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT — DATE

* 3/18/08

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # 608209

GENERATOR COPY

FORWARD INCORPORATED

360685

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

007606
HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHROCK
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract: 76006

TICKET NO. 1884016
SHIPPER/OPERATOR: SHIPPER
DATE: 18 March 2008
TIME IN: 12:26 pm
DATE: 18 March 2008
TIME OUT: 12:41 pm
TRUCK NO.: TRUCK
TRAILER NO.: TRAILER
DRIVER: DRIVER
GROSS WEIGHT: 73,220.00 lb
TARE WEIGHT: 33,380.00 lb
NET WEIGHT: 40,840.00 lb 20.42 TN

QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	EXTENSION	TOTAL
20.42	TN	EARTH/DIRT/SOIL			
1.00	LD	ENVIRONMENTAL FEE			
1.00	LD	FUEL RECOVERY FEE			

2032

MANIFEST# 007606

NET AMOUNT
RECEIVED
CHANGE
CHECK NO.

DRIVER'S SIGNATURE

* 20 3-18-08

DUMPED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT

DATE

DULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL - ANY UNSCHEDULED LOADS ARE SUBJECT EFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE

FORWARD INCORPORATED

360714

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
6977606

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHRODE
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract# 76084

SITE	TICKET	GRID
21	854-096	

SCALE OPERATOR
SKOOG, STEPHEN K

DATE IN	TIME IN
18 MARCH 2008	3:25 PM

DATE OUT	TIME OUT
18 MARCH 2008	3:27 PM

VEHICLE NO.	TARE	ROLL OFF
TRUCK 2		

REFERENCE	PURCHASE ORDER

Gross Weight 75,060.00 lb
Tare Weight 30,900.00 lb
Net Weight 44,160.00 lb 22.08 TN

WEIGHT	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
22.08	TN	EARTH/DIRT/SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				
				22.08		

MANIFEST# 630454

NET AMOUNT
AMOUNT TENDERED
AMOUNT RECEIVED
CHECK NO.

DRIVER'S SIGNATURE

* 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT DATE

*

TAX DRUMS

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
SOIL		
CONSTRUCTION DEBRIS		
NON-FRIABLE ASBESTOS		
WOOD		
ASH		
SPECIAL OTHER		

HEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST

FORWARD INCORPORATED

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION

1745 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

360834

TICKET	GRID
01	

SCALE OPERATOR	
[illegible]	

DATE	TIME
18 March 2008	12:20 pm

DATE	TIME OUT
18 March 2008	12:30 pm

VEHICLE	GROSS/TARE/OFF
TRUCK	TARE

TARE/GROSS/NET	GRADE

ORIGIN:
[illegible] TESTING, SPECIAL TEST, INC.
[illegible]
TRUCKEE, CA 96160
Contract: [illegible]

Tare Weight 30,900.00 lb
Net Weight 45,720.00 lb 22.86 TN

QTY	UNIT	ITEM	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
1.00	EA		DISPOSAL FACILITY				
1.00	EA		ENVIRONMENTAL FEE				
			FUEL RECOVERY FEE				

22.86

MANIFEST # 630956

LINE AMOUNT
TENDERED
CHANGE
CHECK NO.

DRIVER'S SIGNATURE

* 4/18/2008

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS

20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT DATE

*

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 630956

FORWARD, INCORPORATED

36069

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
007606

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHOCK
9705 HWY 267, STE. 4
TRUCKEE, CA 96161
Contract# 7606M

OIL
SHOCK, SCOTT K
10 March 2008 1154 pm
10 March 2008 2213 pm
TRUCK
TRAILER
DRIVER

Gross Weight 77,480.00 lb
Tare Weight 30,880.00 lb
Net Weight 46,240.00 lb 23.12 TN

QUANTITY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
23.12	TN	EARTH/DIRT/SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

23.12

MANIFEST# 630955

NET AMOUNT
TENDERED
CHANGE
RECEIVED

DRIVER'S SIGNATURE

* MT 3/8/08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* 3/8/08

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 630955

FORWARD INCORPORATED

360827

99 South Austin Road/WEIGHING LOCATION
nteca, CA 95336
dfill: (209) 982-4298 / WEIGHING LOCATION

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

DATE 10 MARCH 2008 TIME IN 11:15 am
DATE 10 MARCH 2008 TIME OUT 11:29 am

QUANTITY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
21.50	TN	CLEAN DIRT/SOIL				
1.00	EA	ENVIRONMENTAL FEE				
1.00	EA	FUEL RECOVERY FEE				

21.50 TN

MONTERTN 630946

DRIVER'S SIGNATURE

3/18/08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL. ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 630946

FORWARD INCORPORATED

360610

9999 South Austin Road WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
007606

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHROCK
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract# 7609M

SITE	TICKET	GRID
01	135320	

TRUCK	SCALE OPERATOR
SK670	CHRIS K

DATE IN	TIME IN
12 MARCH 2008	9:43 AM

DATE OUT	TIME OUT
13 MARCH 2008	10:07 AM

TARE	GROSS/TARE/ROLL OFF WEIGHT
TARE	

REFERENCE #	PRINTOUT	ORIGIN

Gross Weight 72,440.00 lb
Tare Weight 31,000.00 lb
Net Weight 41,360.00 lb 20.68 TN

QUANTITY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
20.68	TN	EARTH/DIRT/SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				
				20.68		

MANIFEST# 430945

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

DRIVER'S SIGNATURE

* MT 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* [signature] 3/18/08

HEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST #

☐ Coffin Butte ☐ Ox Mountain ☐ Newby Island Sanitary Landfill ☐ Forward Landfill

FORWARD INCORPORATED

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

360727

ERA SCHOCK DISPOSAL SPECIALIST, INC.
ERA SCHOCK
[illegible] HWY 267, STE. 6
[illegible], CA 96161
Contract: 760084

18 March 2008 4:37 PM
18 March 2008 4:51 PM

Tare Weight 22,260.00 lb
Net Weight 22,460.00 lb 14.72 TN

14.72	TN		
1.00	LD	ENERGY SURCHARGE	4.42
1.00	LD	ENVIRONMENTAL FEE	
		FUEL RECOVERY FEE	

MANIFEST# 808214

DRIVER'S SIGNATURE

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT

DATE 18 Mar 08

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 808214

FORWARD INCORPORATED

362707

999 South Austin Road, Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
2145 W. Charter Way, Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

DATE
01 [illegible]

SCALE OPERATOR

TIME IN
10 March 2008 2:07 pm

TIME OUT
10 March 2008 2:24 pm

HAULER

ORIGIN

Tare Weight 37,260 LB
Net Weight 39,860.00 lb 19.93 TN

QTY	UNIT	DESCRIPTION	UNIT PRICE	EXTENSION	TAX	TOTAL
1.00	EA	EARTH/DIRT/SOIL				
1.00	EA	ENVIRONMENTAL FEE				
		FUEL RECOVERY FEE				
			19.93			

MANIFEST# [illegible]

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

DRIVER'S SIGNATURE

* [signature] 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* [signature] 03/18/08

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # [illegible]

A Plus
Materials Recycling Inc.
2710 LOOMIS RD. • STOCKTON, CA 95205
PHONE (209) 462-9168 • FAX (209) 462-9231

WEIGHMASTER CERTIFICATE

This is TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business And Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

TICKET NO. 205808

DATE / TIME	PRODUCT	HAULER / TRUCK	LOCATION
3/18/2008 7:01 PM	In - Clean Concrete and Rock	THORPE JIM Thorpe, Inc. 6	Port Stockton

CUSTOMER	QTY.	UNIT	PRODUCT	PRICE	AMOUNT
NC No Charge Inbound Concre Main Street Order No: MAIN Loads Today: 1 Qty. Today: 11.66 P.O.					

Main Street

11.66

A PLUS MATERIALS
2526 Port Rd 23
Stockton, CA 95202

Certified Weight
Legal Gross

A PLUS MATERIALS WEIGHMASTER | DRIVER | CUSTOMER

CUSTOMER

G.3 - Soil Excavation Report

SUMMARY OF SOIL EXCAVATION MONITORING ACTIVITIES
On
Proposed Residential Development
Trails of Manteca
2368, 20601 and 20611 East Woodward Avenue
Manteca, California
For
WEATHERBEE PROPERTIES, LLC

By

TERRASEARCH, inc.

Project No. 11515.E1
April 29, 2008

Environmental • Geotechnical • Special Inspections • Materials Testing
TERRASEARCH inc.
SERVING NORTHERN CALIFORNIA SINCE 1969

Project No. 11515.E1
April 29, 2008

SAN JOSE
322 Piercy Road
San Jose, CA 95138
Phone: (408) 362-4920
Fax: (408) 362-4926

LIVERMORE
257 Wright Brothers Ave.
Livermore, CA 94551
Phone: (925) 243-6662
Fax: (925) 243-6663

SACRAMENTO
4200 N. Freeway Blvd.
Suite 2
Sacramento, CA 95834
Phone: (916) 564-7809
Fax: (916) 564-7672

OAKLAND
7700 Edgewater Drive
Suite 847
Oakland, CA 94621
Phone: (510) 633-1332
Fax: (408) 362-4926

FRESNO
4339 N. Golden State Blvd.
Suite 103
Fresno, CA 93722
Phone: (559) 271-0773
Fax: (559) 271-0763

WEBSITE
www.terrasearchinc.com

E-MAIL
info@terrasearchinc.com

Ms. Arlene Utal
Weatherbee Properties, LLC
3000 Danville Boulevard, Suite F-545
Alamo, California 94507

Subject: Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
SUMMARY OF SOIL EXCAVATION MONITORING ACTIVITIES

References:

1) Phase I & Updated Phase II Environmental Site Assessment
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
By TERRASEARCH, inc.
Dated May 29, 2007

2) Phase II Environmental Site Assessment
Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
By TERRASEARCH, inc.
Dated June 13, 2005

3) Phase I Environmental Site Assessment
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
By TERRASEARCH, inc.
Dated April 25, 2005

Dear Ms. Utal:

At your request, *TERRASEARCH, inc.* conducted soil excavation monitoring at the above referenced site. Our Environmental Site Assessments conducted in 2005 and 2007 (references 1, 2 and 3) indicated one significant area of environmental concern on the subject site, namely the presence of stained soil beneath an above-ground diesel storage tank (AST) located on the concrete slab directly north of warehouse structure. The purpose of this work was to observe the removal of petroleum hydrocarbon impacted soil from beneath the AST.

INTRODUCTION

At the request of Weatherbee Properties, LLC, and in accordance with our verbal agreement, ***TERRASEARCH, inc.*** observed the removal of petroleum hydrocarbon impacted soil beneath the AST and prepared this report, which summarizes the field and laboratory methods and results of Soil Excavation Monitoring Activities. This work was performed based on recommendations in our Environmental Site Assessments (references 1, 2 & 3) to investigate and remove soil affected by petroleum hydrocarbons beneath the AST. Our additional Phase II Environmental Site Assessment (reference 2) indicated that elevated concentrations of petroleum hydrocarbons, and moderate concentrations of VOCs were detected beneath the AST in stained soil area in both soil and groundwater samples. In addition, PCBs as Aroclor 1260 was also detected in a soil sample beneath the AST.

SITE DESCRIPTION AND BACKGROUND

General

The subject property is located in the southern portion of San Joaquin County, in the southwestern portion of Manteca, California. The site is comprised of one parcel (APN 241-260-05) totaling approximately 236.49-acres. The excavation is located north of a warehouse in the southeast portion of the parcel (see Figure 1, Site Vicinity Map and Site Plan).

Based on the most recent USGS historical topographic map dated 1996, the local topography is approximately 20-feet above mean sea level (msl). Weatherbee Lake is situated immediately west and the San Joaquin River is mapped approximately 3,500 feet west of the site. Drainage appears to follow the local topography from southeast toward to the northwest, along the local topography toward Weatherbee Lake and San Joaquin River located immediately west of the subject site.

Based on previous environmental work done by ***TERRASEARCH, inc.*** on the subject site (June of 2005), depth-to-water beneath the subject site is approximately 6 to 18-feet below ground surface (bgs).

In 2005, a ***TERRASEARCH, inc.*** field geologist equipped with a hand-auger advanced one boring (B3) to approximately 4-feet bgs in the hydrocarbon-stained soil. Boring B3 was advanced beneath the 300-gallon diesel AST, immediately north of the warehouse. Three (3) soil samples were collected (B3-1; B3-2.5 and B3-4) using a pre-cleaned hand-sampler lined with clean brass liners from 1-foot, 2.5-feet and 4 feet bgs. Also in 2005, ***TERRASEARCH, inc.*** field geologist observed the advancement of boring AST1 to 12.5 feet bgs immediately adjacent to the above-ground storage tank (AST) by Pacific Drilling (C57-749318) of San Jose, California using a truck-mounted drilling rig equipped with hollow-stem augers.

The subsurface soil encountered beneath the site generally consisted of light brown fine to medium grained sand underlain by yellow brown coarse-grained sand at approximately 2 to 3 feet bgs. The

yellow brown coarse sand was underlain by gray brown medium to coarse sand at approximately 10 feet bgs. At least two (2) soil samples and one (1) groundwater sample were obtained from boring AST1. The ends of soil samples were covered with Teflon tape, capped with plastic end caps, and immediately placed in a pre-chilled ice-chest for temporary storage. Petroleum odor was noted in the vadose zone within boring AST1. Groundwater was encountered at 12-feet bgs.

The soil samples collected from boring B3 (B3-1, B3-2.5 and B3-4) were analyzed for TPHg, VOCs, SVOs, PCBs/pesticides and CAM 17 metals using EPA Methods 5030/8021, 8015 (modified), 8260, 8270, 8080 and 6010/7000 series. Soil samples AST1-5 and AST1-7.5 and one groundwater sample AST1-W were analyzed for TPHg, TEPH, VOCs and lead using EPA Methods 5030/8021, 8015 (modified), 8260 and 7240.

Based on laboratory analytical results, soil samples collected from boring B3 reported elevated concentrations of TPHg ranging from 150 mg/Kg to 350 mg/Kg in all soil samples analyzed from B3, while SVOs and pesticides were not detected. Low concentrations of total xylenes (up to 0.5 mg/Kg) were detected in soil samples B3-1 and B3-2.5 and not detected in B3-4. PCBs were not detected in soil samples B3-1 and B3-2.5; however, an elevated concentration of PCBs was detected at 7 mg/Kg in soil sample B3-4. Volatile organic compounds isopropyl benzene (0.056 mg/Kg); 1,2,4-trimethylbenzene (0.25 mg/Kg); sec-butyl benzene (0.27 mg/Kg); 4-isopropyl toluene (0.1 mg/Kg); n-propyl benzene (0.029 mg/Kg); 1,2,5-trimethylbenzene (0.18 mg/Kg) and xylenes (0.23 mg/Kg) were detected in soil sample B3-2.5.

Based on laboratory analytical results, elevated concentrations of TPHg (2,000 µg/L), TEPHd (500,000 µg/L), TEPHmo (190,000 µg/L) and VOCs (up to 8.1 µg/L of 1,2,4-trimethylbenzene) were reported in groundwater samples collected from boring AST1. Dissolved lead was not detected in the groundwater sample. These concentrations were significantly above the *California Regional Water Quality Control Board (RWQCB) – Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Environmental Screening Levels (ESLs) dated July 2003* of 100 µg/L. In addition, low to moderate concentrations of VOCs were detected in groundwater samples collected near the AST, which were all below PRGs and/or ESLs.

Based on these analytical results, ***TERRASEARCH, inc.*** recommended further environmental investigation to be performed on the AST site.

Excavation Activities and Confirmation Soil Sampling

The purpose of the excavation activities was to evaluate the lateral and vertical extent of petroleum hydrocarbons in the soil beneath the AST. Weatherbee Properties, LLC, contracted directly with Jim Thorpe, Inc. (JT) of Lodi (License #495699) to excavate and haul the affected soil. ***TERRASEARCH, inc.*** performed monitoring services during the excavation and took confirmatory soil samples when the estimated extent of the affected soil was reached. ***TERRASEARCH, inc.*** prepared a Health and Safety Plan for the operation, which included using a photo-ionization detector (PID) to register ambient air concentrations, and screen for soil sample concentrations, of the volatile fraction of petroleum hydrocarbons.

At the request of Weatherbee Properties, LLC, on March 17 and 18, 2008, a ***TERRASEARCH, inc***. representative equipped with Photoionization Detector (PID), RAE2000PID visited the subject site to observe the excavation and removal of petroleum hydrocarbon impacted soil from a location north of the warehouse where an AST had once stood. The PID was leased from and calibrated by Equipco Rentals of Concord, California and was utilized to establish the vertical and lateral extent of the petroleum hydrocarbon impacted soil and monitor health and safety conditions.

At the direction of the client, JT performed the excavation and transportation of the excavated soil. Jim Thorpe, Inc. used an excavator and two 16 wheel dump trucks. The petroleum hydrocarbon impacted soil beneath the AST was excavated and loaded into dump trucks. The soil excavated was light brown silty sand. Discoloration was observed in a surface area approximately 8 feet by 10 feet and oblong in shape. As the excavation proceeded, soil was excavated laterally beyond the area of observed staining. The PID was used to estimate when the extent of petroleum hydrocarbon impact was negligible. Petroleum hydrocarbon impacted soil extended laterally toward the east beneath a concrete slab. Therefore, approximately 10 feet of the slab was also removed along with the contaminated soil. The vertical extent of the staining continued down to a depth of approximately 8 feet, but the PID reading dropped to negligible levels before that depth. Groundwater was not encountered in the excavation and based on earlier borings near the location, was estimated to be approximately two or more feet below the bottom of the excavation.

Discolored soil remained at the bottom of the excavation, but the PID did not register elevated concentrations of hydrocarbons. This discolored soil at the bottom of the excavation was specifically targeted for sampling and analysis.

The resulting soil excavation was approximately 23-feet by 24-feet by 8-feet bgs. A total of approximately 313.85-tons of contaminated soil were excavated from the area. In addition, approximately 11.6 tons of concrete was also removed. The excavated soil and concrete was loaded into 16-wheel dump trucks and according to JT, was transported under manifest to Forward Class II Land Fill in Manteca, California. (copies of the manifest are attached).

Upon the completion of the impacted soil excavation activities, a ***TERRASEARCH, inc.*** field representative collected two (2) discrete confirmation soil samples (CB-1 and CB-2) from the bottom of the excavation at approximately 8-feet bgs. In addition, four (4) discrete confirmation soil samples (CS-1, CS-2, CS-3 and CS-4) were also collected from the south, north, east and west walls of the excavation respectively. All six (6) discrete soil samples were collected using clean brass liners, which were completely filled, sealed with Teflon tape, capped, labeled and placed into a pre-chilled ice chest for temporary storage. The ice-chest was kept at a temperature of approximately four degrees Celsius for temporary storage of the samples. All 6 confirmation soil samples were delivered under chain-of-custody documentation to McCampbell Analytical, Inc., a State-certified hazardous waste testing laboratory (Certification No. 1644) of Pittsburg, California, for analysis. Soil samples CB-1 and CB-2 were analyzed for total petroleum hydrocarbons reported as gasoline (TPHg), total extractable petroleum hydrocarbons reported as diesel and motor oil (TEPH), volatile organics (VOCs) and PCBs using EPA Methods 8015

(modified), 8260B and 8080. The four (4) discrete soil samples (CS-1, CS-2, CS-3 and CS-4) were analyzed for total extractable petroleum hydrocarbons reported as diesel (TPHd) using EPA Method 8015 (modified).

The results of the chemical analyses indicated that none of the constituents analyzed were detected in the six samples submitted. These results indicate that the extent of the petroleum affected soil was well-defined and removed from the site. The laboratory analysis report and chain-of-custody documents are attached to this report.

Upon completion of all sampling activities, JT secured the perimeters of the excavation by safety ribbons and the excavation was left open pending receipt of laboratory results. The excavation was reportedly backfilled with loose soil under the direction of Weatherbee Properties, LLC when the results of non-detect were received. The AST site location is shown on Site Plan, Figure 1. The AST area excavation operations are shown in digital photographs, Figures 2 through 5.

The laboratory analytical results are shown on Table 1 and copies of the McCampbell Analytical, Inc. report and chain-of-custody are attached.

Based on the laboratory analytical results, further environmental action on the petroleum hydrocarbon stained soil area beneath the AST is **not warranted** at this time. However, the issue of a previous groundwater sample from the area returning analysis results indicating petroleum hydrocarbon contamination should be addressed. Regarding suspected groundwater contamination beneath the area of the soil excavation north of the warehouse, ***TERRASEARCH, inc.***, recommends beginning groundwater monitoring in conjunction with consultation with Central Valley Regional Water Quality Control Board.

LIMITATIONS

This report has been prepared for the specific application to this project in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in this area. This report contains information reported to ***TERRASEARCH, inc.***, by other sources, accordingly, and errors or omissions may be present that ***TERRASEARCH, inc.*** cannot be responsible for.

TERRASEARCH, inc. is not and will not be interpreted to be a generator, storer, transporter or disposer of hazardous waste, hazardous substance, pollutants or contaminants found or identified at the site. ***TERRASEARCH, inc.*** shall have no responsibility for the transportation, storage, treatment, or disposition of contaminated waste materials of any kind, whether or not directly or indirectly generated from ***TERRASEARCH, inc.***'s performance of the Work hereunder. Even where ***TERRASEARCH, inc.*** is directed to assist with disposal arrangements, Client shall be responsible for and make the final determination regarding the location and methods for disposal of any waste materials.

In the event that it is alleged or determined that consultant has undertaken or assumed any of the activities enumerated in the preceding paragraph, Client assumes the risks of and agrees to indemnify, defend and hold ***TERRASEARCH, inc.*** harmless from any and all claims, damages, suits, losses, or expenses (including attorneys' fees and other costs of defense) in any way arising from such activities.

Client warrants and guarantees that title to all hazardous waste, hazardous substances, pollutants, and contaminants originating at or removed from the site of the Work by consultant will remain in and with the owner of the site. Client further warrants and guarantees that it will not challenge the ownership of the substances enumerated above by any means, including suits in state or federal court, arbitration, or actions in any other forums.

Client is responsible for communicating to ***TERRASEARCH, inc.*** all material information in its possession about the subject site, including all material written and non-written information. This information includes but is not limited to chemical contamination on the site, prior uses of the site, individuals who may have knowledge of the site's history and names and address of all prior owners.

Client shall fully indemnify, defend and hold harmless ***TERRASEARCH, inc.*** (including its officers, employees, shareholders, and directors) from and against all suits, claims, judgments, losses, expenses, costs, including reasonable attorney's fees and expert costs, interest, penalties and judgments with respect to breaches of this Agreement by Client and negligence of Client, its contractors, sub-contractors and other design professionals. These indemnity rights shall survive the termination or completion of ***TERRASEARCH, inc.***'s services pursuant to this Agreement.

Should you have any questions regarding this project, or if you need any additional information, please do not hesitate to contact us.

Reviewed by:

Simon Makdessi, P.E., G.E.
Senior Engineer/Vice President

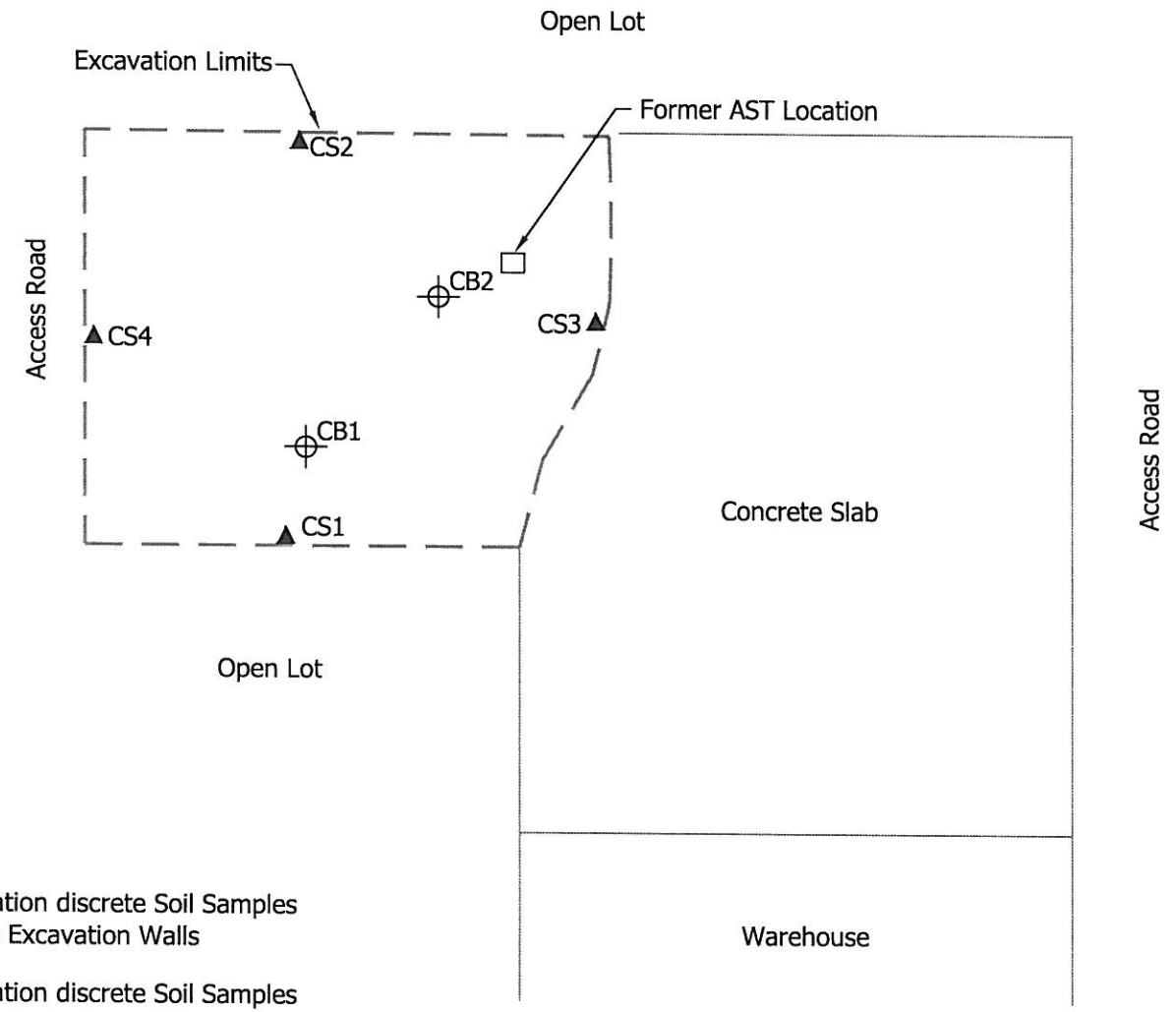


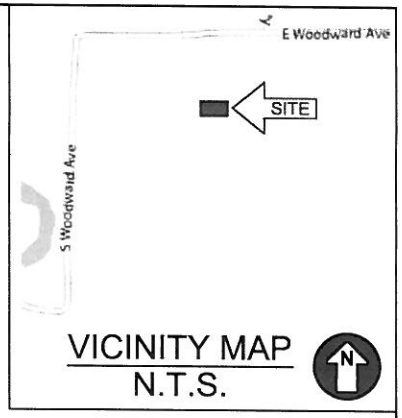
Very truly yours,
TERRASEARCH, inc.

A. Wakil Mateen, R.E.A.
Environmental Specialist

Copies: 3 to Weatherbee Properties, LLC

Attachments: Figure 1, Vicinity Map & Site Plan
Figures 2 through 6, Excavation Activities Photographs
Soil Excavation Manifest
McCampbell Analytical Laboratory Report and Chain-of-Custody Documents





LEGEND

▲CS4 Confirmation discrete Soil Samples from the Excavation Walls

⊕CB1 Confirmation discrete Soil Samples from the the bottom of Excavation

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94551 PHONE: (925) 243-6662

SITE PLAN

ABOVE GROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA
2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

Project No.	Drawn by:
11515.E1	GC
Scale:	Date:
≈ 1" = 10'	04/2008

Figure No. 1

SITE PHOTOS



Figure 2A: Viewing stained soil beneath the former AST location.



Figure 2B: A JT (contractor) excavator excavating stained soil at the AST site.

SITE PHOTOGRAPHS

Environmental • Geotechnical • Special Inspections • Materials Testing
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94550 PHONE: (925) 243-6862

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	AWM

FIGURE 2

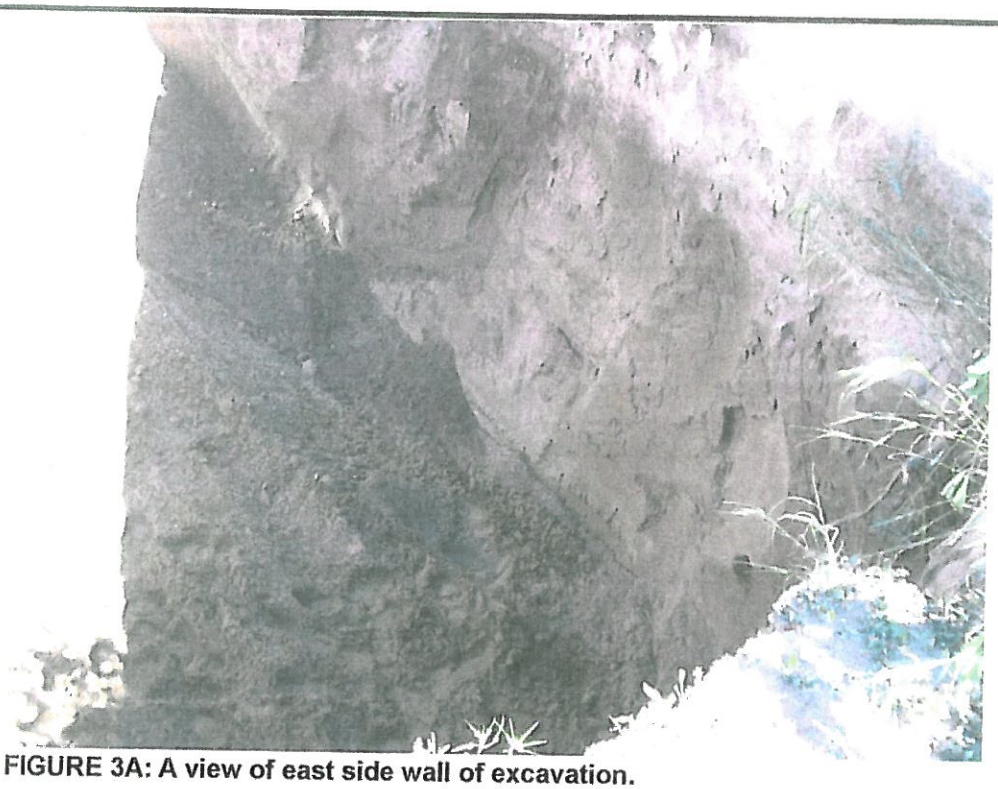


FIGURE 3A: A view of east side wall of excavation.

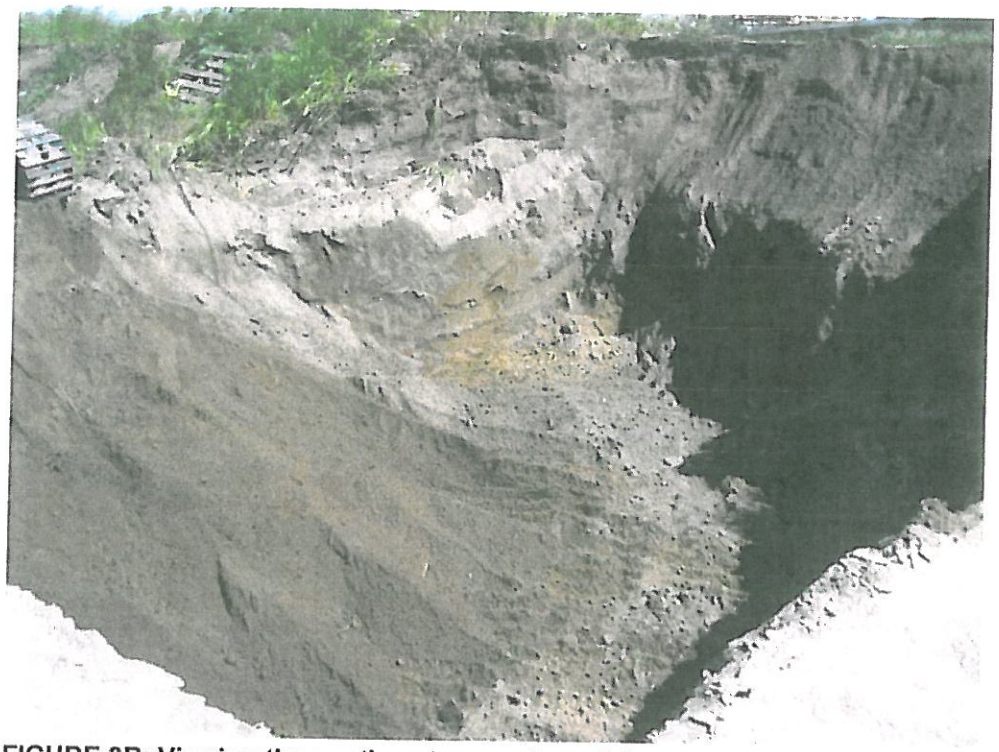


FIGURE 3B: Viewing the southeastern portion of the excavation.

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 3

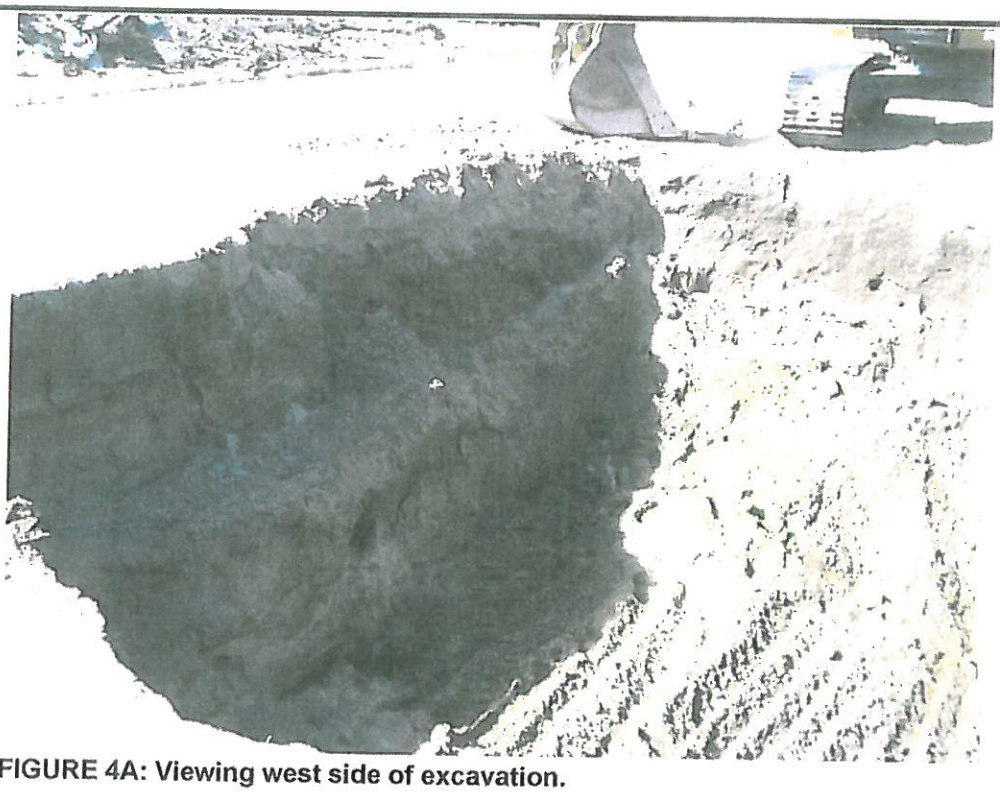


FIGURE 4A: Viewing west side of excavation.



FIGURE 4B: Removing concrete slab from AST site (east side of the excavation).

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 4



FIGURE 5A: Viewing south wall of the excavation. Warehouse is also observed south of excavation.



FIGURE 5B: Viewing at the east wall of excavation.

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 5

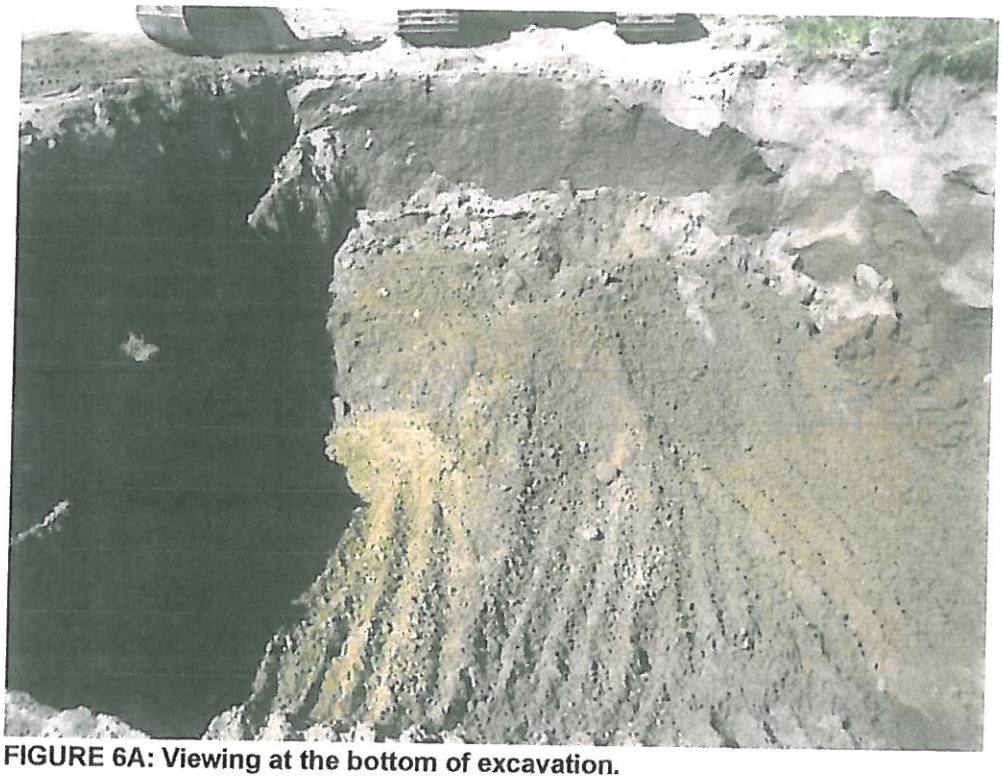


FIGURE 6A: Viewing at the bottom of excavation.



FIGURE 6B: A view of excavation, secured by JT contractor.

SITE PHOTOGRAPHS

ABOVEGROUND STORAGE TANK (AST) SITE
TRAILS OF MANTECA, 2368 EAST WOODWARD AVENUE
MANTECA, CALIFORNIA

JOB NUMBER	DATE	BY
11515.E1	04/2008	

FIGURE 6

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Reported: 03/25/08
	Client P.O.:	Date Completed: 03/25/08

WorkOrder: 0803453

March 25, 2008

Dear Wakil:

Enclosed within are:

1) The results of the **2** analyzed samples from your project: **11515.E1; Manteca Trail,2368 E Wo**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

Chain of Custody

0803153

Reference No.

Page 1 of 1

ENVIRONMENTAL · GEOTECHNICAL · SPECIAL INSPECTION · MATERIALS TESTING

TERRASEARCH INC.

257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94551 PHONE: (925) 243-0662

Sample ID	Date	Time	Matrix	Preserv.	No. Containers	TPH Gasoline (EPA 5030/8015) w/ BTEX (8020)	TPH as DIESEL	Total Extractable Petroleum Hydrocarbons (3550/8015	EPA Method 8080 (Pesticides/PCB's)	EPA Method 8260 (Volatile Organics)	EPA Method 8270 (Semi Volatile Organics)	EPA Method 418.1 (Total Recoverable Hydrocarbons)	Metal As Hg, Pb	PCBs			
Bottom CB-1 (South)	3/18/08	3:05	Soil	ice	1	X		X		X				X			
Bottom CB-2 (North)	3/18/08	4:05	"	"	1	X		X		X				X			

IR# 23.9

GOOD CONDITION ___ APPROPRIATE CONTAINERS ___

HEADSPACE ABSENT ___ PRESERVED IN LAB ___

DECHLORINATED IN LAB ___

PRESERVATION	VOAS	O&G	METALS	OTHER

Project Information

Project Name: Manteca Trail

Project No.: 11515 E1

Site Location: 2368 E. Woodward Av. Manteca

Project Manager: Kamran G.

Sampler's Signature:

Sample Receipt

Total no. of containers	2
Head Space	
Temperature	
Conforms to record	

Report Level

[ ] Routine [ ] Level 2

[ ] Level 3 [ ] Level 4

Turn Around Time (Please Circle One): Standard 5-Day | 24-hr | 48-hr | 72-hr | Others

Special Instruction/Comments: Silica gel clean up

Relinquished By:

Company: Terrasearch Inc.

Time: 5:34 Date: 3/18/08

Place: Pittsburg

Printed Name: A. Maki / Mateen

Signature:

Relinquished By:

Company:

Time: Date:

Place:

Printed Name:

Signature:

Relinquished By: Received

Company: MAI

Time: Date: 3-18-08

Place:

Printed Name:

Signature:

Relinquished By:

Company:

Time: Date:

Place:

Printed Name:

Signature:

Relinquished By:

Company:

Time: Date:

Place:

Printed Name:

Signature:

Relinquished By:

Company:

Time: Date:

Place:

Printed Name:

Signature:

J:\Word\07-08-27-chain of custody form.dot

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0803453 **ClientCode: TSIL**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Wakil Mateen
TERRASEARCH Inc.
257 Wright Brothers Ave.
Livermore, CA 94550

Email: wakilm@terrasearchinc.com
TEL: (925) 243-6662 FAX: (925) 243-6663
PO:
ProjectNo: 11515.E1; Manteca Trail,2368 E Woodward Ave

Bill to:
Angelica Garcia
TERRASEARCH Inc.
322 Piercy Road
San Jose, CA 95138
agarcia@terrasearchinc.com

Requested TAT: 5 days

Date Received: **03/18/2008**
Date Printed: **03/18/2008**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0803453-001	CB-1 Bottom (South)	Soil	3/18/2008 15:05	☐	A	A	A	A								
0803453-002	CB-2 Bottom (North)	Soil	3/18/2008 16:05	☐	A	A	A	A								

Test Legend:

1	8082A_PCB_S	2	8260B_S	3	G-MBTEX_S	4	TPH(DMO)WSG_S	5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Sample Receipt Checklist

Client Name: **TERRASEARCH Inc.** Date and Time Received: **03/18/08 5:56:29 PM**

Project Name: **11515.E1; Manteca Trail,2368 E Woodward Ave** Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **0803453** Matrix Soil Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 23.9°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑

Client contacted: Date contacted: Contacted by:

Comments:

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Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/21/08-03/25/08

Polychlorinated Biphenyls (PCBs) Aroclors by GC-ECD*

Extraction Method: SW3550C Analytical Method: SW8082A Work Order: 0803453

Lab ID	0803453-001A	0803453-002A			Reporting Limit for DF =1	
Client ID	CB-1 Bottom (South)	CB-2 Bottom (North)				
Matrix	S	S				
DF	1	1			S	W
Compound	**Concentration**				mg/kg	ug/L
Aroclor1016	ND	ND			0.025	NA
Aroclor1221	ND	ND			0.025	NA
Aroclor1232	ND	ND			0.025	NA
Aroclor1242	ND	ND			0.025	NA
Aroclor1248	ND	ND			0.025	NA
Aroclor1254	ND	ND			0.025	NA
Aroclor1260	ND	ND			0.025	NA
PCBs, total	ND	ND			0.025	NA
Surrogate Recoveries (%)						
%SS:	105	102				
Comments		o				

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

(h) a lighter than water immiscible sheen/product is present; (i) liquid sample that contains >~1 vol. % sediment; (j) sample diluted due to high organic content/matrix interference; (k) p,p,- is the same as 4,4,-; (l) florisil (EPA 3620) cleanup; (m) silica-gel (EPA 3630) cleanup; (n) elemental sulfur (EPA 3660) cleanup; (o) sulfuric acid permanganate (EPA 3665) cleanup; (p) see attached narrative; q) reporting limit raised due to insufficient sample amount; (r) results are reported on a dry weight basis;

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Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc.	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
257 Wright Brothers Ave.	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
Livermore, CA 94550	Client P.O.:	Date Analyzed 03/24/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0803453

Lab ID	0803453-001A
Client ID	CB-1 Bottom (South)
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	Acrolein (Propenal)	ND	1.0	0.05
Acrylonitrile	ND	1.0	0.02	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	2-Chloroethyl Vinyl Ether	ND	1.0	0.01
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
2-Chlorotoluene	ND	1.0	0.005	4-Chlorotoluene	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromo-3-chloropropane	ND	1.0	0.004
1,2-Dibromoethane (EDB)	ND	1.0	0.004	Dibromomethane	ND	1.0	0.005
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
1,3-Dichloropropane	ND	1.0	0.005	2,2-Dichloropropane	ND	1.0	0.005
1,1-Dichloropropene	ND	1.0	0.005	cis-1,3-Dichloropropene	ND	1.0	0.005
trans-1,3-Dichloropropene	ND	1.0	0.005	Diisopropyl ether (DIPE)	ND	1.0	0.005
Ethylbenzene	ND	1.0	0.005	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Hexachlorobutadiene	ND	1.0	0.005
Hexachloroethane	ND	1.0	0.005	2-Hexanone	ND	1.0	0.005
Isopropylbenzene	ND	1.0	0.005	4-Isopropyl toluene	ND	1.0	0.005
Methyl-t-butyl ether (MTBE)	ND	1.0	0.005	Methylene chloride	ND	1.0	0.005
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005	Naphthalene	ND	1.0	0.005
Nitrobenzene	ND	1.0	0.1	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	96	%SS2:	98
%SS3:	98		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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TERRASEARCH Inc.	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
257 Wright Brothers Ave.	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
Livermore, CA 94550	Client P.O.:	Date Analyzed 03/24/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0803453

Lab ID	0803453-002A
Client ID	CB-2 Bottom (North)
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	Acrolein (Propenal)	ND	1.0	0.05
Acrylonitrile	ND	1.0	0.02	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	2-Chloroethyl Vinyl Ether	ND	1.0	0.01
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
2-Chlorotoluene	ND	1.0	0.005	4-Chlorotoluene	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromo-3-chloropropane	ND	1.0	0.004
1,2-Dibromoethane (EDB)	ND	1.0	0.004	Dibromomethane	ND	1.0	0.005
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
1,3-Dichloropropane	ND	1.0	0.005	2,2-Dichloropropane	ND	1.0	0.005
1,1-Dichloropropene	ND	1.0	0.005	cis-1,3-Dichloropropene	ND	1.0	0.005
trans-1,3-Dichloropropene	ND	1.0	0.005	Diisopropyl ether (DIPE)	ND	1.0	0.005
Ethylbenzene	ND	1.0	0.005	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Hexachlorobutadiene	ND	1.0	0.005
Hexachloroethane	ND	1.0	0.005	2-Hexanone	ND	1.0	0.005
Isopropylbenzene	ND	1.0	0.005	4-Isopropyl toluene	ND	1.0	0.005
Methyl-t-butyl ether (MTBE)	ND	1.0	0.005	Methylene chloride	ND	1.0	0.005
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005	Naphthalene	ND	1.0	0.005
Nitrobenzene	ND	1.0	0.1	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	95	%SS2:	97
%SS3:	97		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

McCampbell Analytical, Inc.
"When Quality Counts"

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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc.	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
257 Wright Brothers Ave.		Date Received: 03/18/08
Livermore, CA 94550	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/19/08

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0803453

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	CB-1 Bottom (South)	S	ND	---	ND	ND	ND	ND	1	86
002A	CB-2 Bottom (North)	S	ND	---	ND	ND	ND	ND	1	82

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) value derived using a client specified carbon range; o) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/20/08

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3550C/3630C Analytical methods: SW8015C Work Order: 0803453

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0803453-001A	CB-1 Bottom (South)	S	ND	ND	1	117
0803453-002A	CB-2 Bottom (North)	S	ND	ND	1	116

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L
	S	1.0	5.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; r) results are reported on a dry weight basis

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8082A

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8082A	Extraction SW3550C				BatchID: 34417			Spiked Sample ID: 0803377-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/kg	mg/kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Aroclor1260	ND	0.075	99.5	102	2.40	94.9	95.2	0.279	70 - 130	20	70 - 130	20
%SS:	91	0.050	95	97	2.27	94	93	0.724	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34417 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/21/08 2:30 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/24/08 6:19 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8260B	Extraction SW5030B				BatchID: 34452				Spiked Sample ID: 0803480-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	87	88	1.13	86.4	87.9	1.62	60 - 130	30	60 - 130	30
Benzene	ND	0.050	79	74.8	5.37	75	79.1	5.34	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	117	120	2.35	107	104	3.04	60 - 130	30	60 - 130	30
Chlorobenzene	ND	0.050	83.6	79.4	5.19	79.2	81.2	2.44	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	85.4	85.1	0.393	80.2	83.9	4.54	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	118	115	2.91	107	116	7.74	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	86.6	82.4	4.91	81.6	84.5	3.53	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	92.1	91.5	0.691	89.8	92.6	3.07	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	79.1	78.6	0.730	107	112	4.58	60 - 130	30	60 - 130	30
Toluene	ND	0.050	82	76.5	7.02	78.5	81.4	3.70	60 - 130	30	60 - 130	30
Trichloroethene	ND	0.050	77.7	70.3	10.1	73.9	75.7	2.40	60 - 130	30	60 - 130	30
%SS1:	102	0.050	110	111	0.987	106	106	0	70 - 130	30	70 - 130	30
%SS2:	99	0.050	101	101	0	100	102	1.43	70 - 130	30	70 - 130	30
%SS3:	98	0.050	105	108	3.11	108	108	0	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34452 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/24/08 3:57 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/24/08 4:41 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8021B/8015Cm	Extraction SW5030B	BatchID: 34424	Spiked Sample ID: 0803411-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	0.60	93.5	89.2	4.73	106	103	3.49	70 - 130	20	70 - 130	20
MTBE	ND	0.10	101	96.1	5.45	107	103	4.37	70 - 130	20	70 - 130	20
Benzene	ND	0.10	97.4	96.4	1.12	109	111	2.07	70 - 130	20	70 - 130	20
Toluene	ND	0.10	87.2	84.1	3.34	101	104	3.42	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	99.3	96.4	3.03	108	112	3.76	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	95.3	91.8	3.68	104	106	2.58	70 - 130	20	70 - 130	20
%SS:	98	0.10	89	89	0	99	102	3.02	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34424 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/19/08 10:30 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/19/08 6:43 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0803453

EPA Method SW8015C	Extraction SW3550C/3630C	BatchID: 34415	Spiked Sample ID: 0803377-013A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	ND	20	106	108	1.66	101	102	1.81	70 - 130	30	70 - 130	30
%SS:	116	50	117	117	0	115	117	1.36	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34415 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803453-001A	03/18/08 3:05 PM	03/18/08	03/20/08 1:28 AM	0803453-002A	03/18/08 4:05 PM	03/18/08	03/20/08 12:22 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

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TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Reported: 03/25/08
	Client P.O.:	Date Completed: 03/25/08

WorkOrder: 0803452

March 25, 2008

Dear Wakil:

Enclosed within are:

1) The results of the **4** analyzed samples from your project: **11515.E1; Manteca Trail,2368 E Wo**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,



Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

Chain of Custody

COC 3452

Reference No. ____
Page 1 of 1

ENVIRONMENTAL • GEOTECHNICAL • SPECIAL INSPECTION • MATERIALS TESTING
TERRASEARCH INC.
257 WRIGHT BROTHERS AVENUE, LIVERMORE CALIFORNIA 94551 PHONE: (925) 243-6662

Sample ID	Date	Time	Matrix	Preserv.	No. Containers	TPH Gasoline (EPA 5030/8015 w/ BTEX (8020)	TPH as DIESEL	Total Extractable Petroleum Hydrocarbons (3550/8015	EPA Method 8080 (Pesticides/PCB's)	EPA Method 8260 (Volatile Organics)	EPA Method 8270 (Semi Volatile Organics)	EPA Method 418.1 (Total Recoverable Hydrocarbons)	Metal As Hg, Pb				
CS-1 South Wall	3/18/08	1:30	Soil	ice	1		X										
CS-2 North wall		1:35			1		X										
CS-3 East wall		1:45			1		X										
CS-4 West wall		2:15			1		X										

ICE's 23.9
GOOD CONDITION ✓
HEAD SPACE ABSENT ____
DECHLORINATED IN LAB ____
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB ✓

PRESERVATION: VOAS | O&G | METALS | OTHER

Project Information

Project Name: Manteca Trail
Project No.: 11515.E1
Site Location: 2368 E. Woodward Av. Manteca
Project Manager: Kaiman G.
Sampler's Signature:

Sample Receipt

Total no. of containers: 4
Head Space:
Temperature:
Conforms to record:

Report Level

[ ] Routine [ ] Level 2
[ ] Level 3 [ ] Level 4

Turn Around Time (Please Circle One): Standard 5-Day | 24-hr | 48-hr | 72-hr | Others

Special Instruction/Comments: Wash Target Clean up

Relinquished By:
Company: Terrasearch Inc.
Time: 5:34 Date: 3/18/08
Place: Pittsburg
Printed Name: A. Wakil / Matgen
Signature:

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

Relinquished By: RECEIVED
Company: A-1
Time: Date: 3.18.08
Place: MAI
Printed Name: ENVIRONMENT
Signature:

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

Relinquished By:
Company:
Time: Date:
Place:
Printed Name:
Signature:

J:\Wakil\07-06-27-chain of custody form...pdf

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0803452 **ClientCode: TSIL**

☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Wakil Mateen
TERRASEARCH Inc.
257 Wright Brothers Ave.
Livermore, CA 94550

Email: wakilm@terrasearchinc.com
TEL: (925) 243-6662 FAX: (925) 243-6663
PO:
ProjectNo: 11515.E1; Manteca Trail,2368 E Woodward Ave

Bill to:
Angelica Garcia
TERRASEARCH Inc.
322 Piercy Road
San Jose, CA 95138
agarcia@terrasearchinc.com

Requested TAT: 5 days

Date Received: **03/18/2008**
Date Printed: **03/18/2008**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0803452-001	CS-1 South Wall	Soil	3/18/2008 13:30	☐	A											
0803452-002	CS-2 North Wall	Soil	3/18/2008 13:35	☐	A											
0803452-003	CS-3 East Wall	Soil	3/18/2008 13:45	☐	A											
0803452-004	CS-4 West Wall	Soil	3/18/2008 14:15	☐	A											

Test Legend:

1	TPH(D)WSG_S	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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Sample Receipt Checklist

Client Name: **TERRASEARCH Inc.** Date and Time Received: **03/18/08 5:48:36 PM**

Project Name: **11515.E1; Manteca Trail,2368 E Woodward Ave** Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **0803452** Matrix Soil Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 23.9°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑

Client contacted: Date contacted: Contacted by:

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

TERRASEARCH Inc. 257 Wright Brothers Ave. Livermore, CA 94550	Client Project ID: 11515.E1; Manteca Trail,2368 E Woodward Ave	Date Sampled: 03/18/08
		Date Received: 03/18/08
	Client Contact: Wakil Mateen	Date Extracted: 03/18/08
	Client P.O.:	Date Analyzed 03/20/08-03/25/08

Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3550C/3630C Analytical methods: SW8015C Work Order: 0803452

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0803452-001A	CS-1 South Wall	S	ND	1	105
0803452-002A	CS-2 North Wall	S	ND	1	118
0803452-003A	CS-3 East Wall	S	ND	1	109
0803452-004A	CS-4 West Wall	S	ND	1	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; r) results are reported on a dry weight basis

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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Web: www.mccampbell.com E-mail: main@mccampbell.com
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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0803452

EPA Method SW8015C	Extraction SW3550C/3630C			BatchID: 34415				Spiked Sample ID: 0803377-013A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	ND	20	106	108	1.66	101	102	1.81	70 - 130	30	70 - 130	30
%SS:	116	50	117	117	0	115	117	1.36	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34415 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803452-001A	03/18/08 1:30 PM	03/18/08	03/25/08 12:04 PM	0803452-002A	03/18/08 1:35 PM	03/18/08	03/20/08 2:34 AM
0803452-003A	03/18/08 1:45 PM	03/18/08	03/20/08 3:12 PM	0803452-004A	03/18/08 2:15 PM	03/18/08	03/20/08 1:56 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

TABLE 1
LABORATORY ANALYTICAL RESULTS OF CONFIRMATIOIN SOIL SAMPLES
2368 East Woodward Avenue, Manteca, CA
Project No. 11515.E1
March 18, 2008

Sample ID	TPHg (mg/Kg)	BTEX (mg/Kg)	TEPHd (mg/Kg)	TEPHmo (mg/Kg)	VOCs (mg/Kg)	PCBs (mg/Kg)
CS-1 south wall	NA	NA	ND<1.0	NA	NA	NA
CS-2 north wall	NA	NA	ND<1.0	NA	NA	NA
CS-3 east wall	NA	NA	ND<1.0	NA	NA	NA
CS-4 west wall	NA	NA	ND<1.0	NA	NA	NA
CB-1 south bottom	ND<1.0	ND<0.005	ND<1.0	ND<5.0	ND<0.005-0.1	<0.025
CB-2 north bottom	ND<1.0	ND<0.005	ND<1.0	ND<5.0	ND<0.005-0.1	<0.025
ESLs	*100*	--	*100*	*410*	--	*0.089*

TPHg	=	Total petroleum hydrocarbons reported as gasoline
BTEX	=	Benzene, toluene, ethylbenzene, xylenes
TEPHmo	=	Total petroleum hydrocarbons reported as motor oil
VOCs	=	Volatile organic compounds
PCBs	=	Polychlorinated Biphenyls
NA	=	Not analyzed
ND	=	None Detected see laboratory reports for specific compound and detection limit.
<	=	Less than laboratory detection limit.
mg/Kg	=	Milligrams per kilogram, equivalent to parts per million (ppm).
ESLs	=	Environmental Screening Levels for Shallow Soils and Groundwater (less than 3 meters) by RWQCB, November 2007.

04/08/2008 13:39 1-209-368-1851 JIM THORPE OIL INC. PAGE 01/16

O R W [illegible] C O R P O R A T E D

9 South Austin Road
nteca, CA 95336
dfill: (209) 982-4298 Fax: (209) 982-1009
Resource Recovery: (209) 982-4298

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4481
Fax: (209) 469-0631

DATE 03/17/08

TRUCK LIC.# [illegible]

TRAILER LIC. # [illegible]

CUSTOMER NO. 7008

TRUCK NO. 6

BILL TO: Waterour [illegible]

☑ Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

TANCE NO.

[illegible]

ECTIVE EQUIPMENT

PIRATOR ☑ HARD HAT

S:

SIZE YDS.	DESCRIPTION	NOTES
	☐ REFUSE ☐ TREATED WOOD	
	☐ SLUDGE ☐ ASH	
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS	
10	☐ SOIL ☑ SOIL	
	☐ STOCKPILE	

GROSS 72160
TARE 32460
NET 40100
TONS 20.35

IN [illegible] A.M./P.M.

OUT [illegible] A.M./P.M.

Signed [illegible]

2555886

☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY Manteca

TRANSPORTER Jim Thorpe Oil Inc

ADDRESS PO Box 337

CITY, STATE, ZIP [illegible] CA 95240

PHONE 824-5481

SIGNATURE OF AUTHORIZED AGENT OR DRIVER * [signature] DATE 3-17-08

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
7B63581	6

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS 26

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT * [signature] DATE

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

☐ Keller Canyo
Sanitary Lan
901 Bailey Road
Pittsburg, CA 9456
Phone (925) 458-9
Fax (925) 458-985

FORWARD INCORPORATED

9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4298 Fax (209) 982-1002
Resource Recovery: (209) 982-4298
Main Office: (209) 983-1400
Fax: (209) 983-0631

DATE 4/8/08

CUSTOMER NO. 1100 TRUCK NO. 40 TRAILER LIC. # TRUCK LIC.#

BILL TO: Hazardous Disposal

25567

SIZE YDS:	DESCRIPTION	NOTES		
	☐ REFUSE ☐ TREATED WOOD		80580	GROSS
	☐ SLUDGE ☐ ASH		34740	TARE
20	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS		45840	NET
	☑ SOIL ☑ SOIL		22.92	TONS
	☐ STOCKPILE			

IN A.M./P.M.

OUT A.M./P.M.

GENERATOR JD

MAILING ADDRESS

CITY, STATE, ZIP

PHONE 209

CONTACT PERSON

SIGNATURE OF AUTH

*

GENERATOR'S CERTIFICATION: I hereby certify that the above named materials are not hazardous waste as defined by 40 CFR Part 261 or any applicable state law, and are properly classified, described, classified and packaged, and are in all respects in proper condition for transportation according to applicable regulations; AND, if the waste described above is exempt waste or non-hazardous waste, said waste is subject to the Land Disposal Restrictions of 40 CFR Part 268 and is in full compliance with those regulations in accordance with the requirements of 40 CFR Part 261.

WASTE TYPE:
- ☐ DISPOSAL
- ☐ CONSTRUCTION
- ☐ DEBRIS
- ☐ SPECIAL WASTE

- ☐ SLUDGE
- ☐ WOOD
- ☐ OTHER

GENERATING FACILITY
MANTECA

TRANSPORTER Jim Thorpe Oil Inc.

ADDRESS PO Box 551

CITY, STATE, ZIP Lodi CA 95241

PHONE 209-367-1

SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE

*

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B63581	40

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

*

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # AAA002

☐ Keller Canyon Sanitary Landfill
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

FORWARD INCORPORATED
9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4298 Fax (209) 982-1009
Resource Recovery: (209) 982-4298
PO Box 6336
Stockton, CA 95206
Main Office: 209-465-8482
Fax: 209-465-8482

DATE 03/17/08
TRUCK LIC.#
TRAILER LIC. #
CUSTOMER NO. 768
TRUCK NO.
BILL TO: Hanford Dump

GENERATOR
MAILING ADDRESS
CITY, STATE, ZIP
PHONE
CONTACT PERSON
SIGNATURE OF AUTHO
*

GENERATOR'S CERTIFICATION: I certify that the waste as defined by 40 CFR Part 2 described, classified and packaged regulations; AND, if the waste is subject to the Land Disposal Restri accordance with the requirements 40 CFR Part 261.

by ce title

23933

SIZE YDS.	DESCRIPTION	NOTES
	☐ REFUSE ☐ TREATED WOOD	
	☐ SLUDGE ☐ ASH	
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS	
10	☐ II SOIL ☐ SOIL	
	☐ STOCKPILE	

74600	GROSS
30960	TARE
43640	NET
21.82	TONS

IN A.M./P.M.
OUT A.M./P.M.

WASTE TYPE: 3
☐ DISPOSAL
☐ CONSTRUCTION
☐ DEBRIS
☐ SPECIAL WASTE
☐ WOOD
☐ OTHER

Signed:

GENERATING FACILITY
Manteca

TRANSPORTER
ADDRESS PO 357
CITY, STATE, ZIP Lodi, Ca
PHONE 368-6175

NOTES:	VEHICLE LICENSE NUMBER	TRUCK NUMBER
	3P83104	7

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
*	3-17-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS
FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

FORWARD INCORPORATED

9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4293 Fax (209) 982-1009
Resource Recovery: (209) 982-4298

P.O. Box 6336
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 465-0631

DATE 12.17.08

TRUCK LIC.# _____

CUSTOMER NO. 1600 TRUCK NO. 7 TRAILER LIC. # _____

Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4293
Fax (209) 982-1009

BILL TO: Hazardous Disposal Specialists

TANCE NO.

1622

ECTIVE EQUIPMENT

SPIRATOR HARD HAT

RES:

SIZE YDS.	DESCRIPTION	NOTES
	☐ REFUSE ☐ TREATED WOOD	
	☐ SLUDGE ☐ ASH	
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS	
20	☐ SOIL ☐ SOIL	
	☐ STOCKPILE	

GROSS 83960

TARE 30160

NET 53800

TONS 26.51

IN _____ A.M./P.M.

OUT _____ A.M./P.M.

Signed _____

☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY MANTECA

TRANSPORTER D.J.T.

ADDRESS P.O. Box 357

CITY, STATE, ZIP Ripon, Ca

PHONE 209-614-5

SIGNATURE OF AUTHORIZED AGENT OR DRIVER DATE

*

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
3T83104	7

END DUMP ☐ BOTTOM DUMP ☐ TRANSFER ☐

ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

325.51

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT DATE

*

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL - ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST #

FORWARD INCORPORATED

360792

199 South Austin Road/WEIGHING LOCATION
anteca, CA 95336
andfill: (209) 982-4290 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

SITE | TICKET | GRID

1 03206

SCALE OPERATOR | TIME

10 MARCH 2008

TRUCK NO. | TRAILER NO. | TARE WEIGHT | GROSS WEIGHT

10 MARCH 2008

DRIVER | ROUTE | ORIGIN

JOHN

REFERENCE | PRODUCT DESCRIPTION

1	N	EARTH/DIRT/SOIL				
1.00	D	ENVIRONMENTAL FEE -				
1.00	D	FUEL RECOVERY FEE				

MANIFEST# 003206

2071

DELIVERED

RECEIVED

APPROVED

CHECKED

DRIVER'S SIGNATURE

* 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
X SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* 3-18-08

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # 003206

FORWARD INCORPORATED

1999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION

1245 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

360825

GRID

DATE

PROFILE OPERATOR

TRUCK NUMBER

TIME IN

TIME OUT

TRUCK CODE

TARE

GROSS

TRUCK WEIGHT

NET

TICKET

DRIVER'S SIGNATURE

QUANTITY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
19.63	TN	EARTH/DIRT/SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

1963

MANIFEST# 408207

NET AMOUNT

TENDERED

CHANGE

CHECK NO

* 3-15-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☑ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT

DATE

* 3/18/08

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

360687

FORWARD INCORPORATED

099 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

00760S
HAZARDOUS DISPOSAL SPECIALIST - INC.
LISA SCHROCK
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract # 7600R

SITE	
01	8340-0
TRUCK	
SK6726 SCOTT K	
DATE IN	TIME IN
15 MARCH 2008	1:40 PM
DATE OUT	TIME OUT
15 MARCH 2008	1:56 PM
VEHICLE	HAUL OPERATOR
TRUCK 2	
REFERENCE	ORIGIN

Inbound SCALE TICKET

01 Gross Weight 70,100.00 lb
Tare Weight 32,200.00 lb
Net Weight 37,900.00 lb 18.95 TN

QUANTITY	UNIT	DESCRIPTION	PRICE	EXTENSION	TAX	CHECK
18.95	TN	EARTH/DIRT/SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

18.95

MANIFEST# 608209

PRINT NAME
DRIVER'S SIGNATURE
CASH/CHARGE
CHECK NO.

* 3/15/08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT — DATE

* 03/15/08

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL. ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # 608209

FORWARD INCORPORATED

1999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

007608
HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHECK
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract# 7608

360685

TICKET DATE: 18-Mar-08
SIGNED OPERATOR: SOPERI K
DATE: 18 March 2008 TIME IN: 12:26 pm
DATE: 18 March 2008 TIME OUT: 12:51 pm
TRUCK #: 1109
REVIEWED BY: ORIGINAL DELIVERY TICKET

Gross Weight 79,220.00 lb
Tare Weight 38,580.00 lb
Net Weight 40,640.00 lb 20.32 TN

QUANTITY	UNIT	DESCRIPTION	EXTENSION	TOTAL
20.32	TN	EARTH/DIRT/SOIL		
1.00	LD	ENVIRONMENTAL FEE		
1.00	LD	FUEL RECOVERY FEE		

2042

MANIFEST# 008208

DRIVER'S SIGNATURE

* 20 3-18-08

☐ LANDED ☐ VAN ☐ DRUMS

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

DULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL - ANY UNSCHEDULED LOADS ARE SUBJECT
EFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE

FORWARD INCORPORATED

360714

1999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHRODE
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract# 760896

TICKET	360714
GRID	
SCALE OPERATOR	SKEATS, SCOTT K
DATE IN	18 MARCH 2008
TIME IN	3:25 pm
DATE OUT	18 MARCH 2008
TIME OUT	3:25 pm
TRUCK #	
TARE	
REFERENCE	

Gross Weight 75,060.00 lb
Tare Weight 30,900.00 lb
Net Weight 44,160.00 lb 22.08 TN

Material Scale Ticket

UNIT		DESCRIPTION	EXTENSION	TAX	TOTAL
22.08	TN	EARTH/DIRT/SOIL	22.08		
1.00	LD	ENVIRONMENTAL FEE			
1.00	LD	FUEL RECOVERY FEE			

MANIFEST# 630454

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

DRIVER'S SIGNATURE

* NT 3-18-08

	LBS	TAN	DRUMS
	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT DATE

*

HEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL. ANY UNSCHEDULED LOADS ARE SUBJECT REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFO

FORWARD INCORPORATED

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION

1745 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-3067

36083

STEP	TICKET
01	036026

SCALE OPERATOR
[illegible]

DATE	TIME IN
18 March 2008	12:17 pm

DATE OUT	TIME OUT
18 March 2008	12:20 pm

TRUCK #	TARE #	GROSS #

CUSTOMER
[illegible]

TRUCK
[illegible]

TRAILER
[illegible]

TRANSFER OR MANIFEST
[illegible]

CONTRACT
[illegible]

ORIGIN
[illegible]

Tare Weight 30,900.00 lb
Net Weight 46,520.00 lb 23.26 TN

QTY	UM	DESCRIPTION	EXTENSION	TOTAL
1.00	EA	CONTAMINATED OIL		
1.00	EA	ENVIRONMENTAL FEE		
		FUEL RECOVERY FEE		

23.26

MANIFEST# 4360966

BILLING AMOUNT

TENDERED

CHANGE

CHECK NO.

DRIVER'S SIGNATURE

* 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT DATE

*

CUBIC YARDS

20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

FORWARD INCORPORATED

36069

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
007606

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHOCK
9705 HWY 267, STE. 6
TRUCKEE, CA 96161
Contract# 76056

DATE: 18 March 2008
TIME IN: 1:54 pm
TIME OUT: 2:13 pm
TRUCK #: 2
DRIVER: SKOFERT K
TICKET #:

01 Gross Weight 77,180.00 lb
Tare Weight 30,840.00 lb
Net Weight 46,340.00 lb 23.17 TN

QUANTITY	UNIT	DESCRIPTION	EXTENSION	TAX	NET AMOUNT
23.17	TN	EARTH/DIRT/SOIL			
1.00	LD	ENVIRONMENTAL FEE			
1.00	LD	FUEL RECOVERY FEE			

23.17

MANIFEST# 630955

TENDERED

CHANGE

CHECK #

DRIVER'S SIGNATURE

* MT 3/18/08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS

20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

*

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST #

FORWARD INCORPORATED

99 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION

1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

360827

HAZARDOUS DISPOSAL SPECIALIST, INC.

Tare Weight 20,940.00 lb

Net Weight 42,600.00 lb 21.30 TN

EARTH/DIRT/SOIL
ENVIRONMENTAL FEE
FUELS RECOVERY FEE

21.30

MANIFEST# 63094

DRIVER'S SIGNATURE

3/18/08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT

DATE 3/18/08

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL - ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

FORWARD INCORPORATED

360610

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 / WEIGHING LOCATION
007608
1145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHRECK
9705 HWY 267, STE. 6
TRUCKEE, CA. 96161
Contract# 7608M

SITE	TICKET	LOAD
01	83920	

SCALE OPERATOR	
SK6203	20061 R

DATE	TIME IN
18 MAR 2008	9:43 am

DATE OUT	TIME OUT
18 MAR 2008	10:07 am

VEHICLE	ADD'L OPER.
TM-0004	

DESCRIPTION	ORIGIN

Gross Weight 72,340.00 lb
Tare Weight 31,000.00 lb
Net Weight 41,340.00 lb 20.68 TN

Forward SCALE TICKET

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
20.68	TN	EARTH/DIRT/SOIL				
1.00	LD	ENVIRONMENTAL FEE				
1.00	LD	FUEL RECOVERY FEE				

2.00

MANIFEST# 630949

NET AMOUNT
TYPE/DESC.
CHANGE
CHECK NO.

DRIVER'S SIGNATURE

* MT 3-18-08

☐ ☐ ☐ ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* [signature] [signature]

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

☐ Coffin Butte ☐ Ox Mountain ☐ Newby Island Sanitary Landfill ☐ Forward Landfill

FORWARD INCORPORATED

9999 South Austin Road/WEIGHING LOCATION
Manteca, CA 95336
Landfill (209) 982-4298 / WEIGHING LOCATION

7145 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 466-1067

360727

HAZARDOUS DISPOSAL SPECIALIST, INC.
LISA SCHOCK
[illegible] HWY 267, STE. 6
[illegible], CA 96161
Contact: [illegible]

10 MARCH 2008 4:37 PM
10 MARCH 2008 4:51 PM

Gross Weight 44,000.00 LB
Tare Weight 25,560.00 LB
Net Weight 18,440.00 LB 14.72 TN

14.72	TN	CONTAMINATED SOIL	
1.00	LD.	ENVIRONMENTAL FEE	
1.00	LD.	FUEL RECOVERY FEE	

14.72

MANIFEST# 209214

DRIVER'S SIGNATURE:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

CUBIC YARDS: 20

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

1888

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST #

FORWARD INCORPORATED

362707

9999 South Austin Road WEIGHING LOCATION
Manteca, CA 95336
Landfill: (209) 982-4298 WEIGHING LOCATION
1135 W. Charter Way
Stockton, CA 95206
Main Office: (209) 466-4482
fax: (209) 466-1667

QTY	UNIT	DESCRIPTION	UNIT PRICE	EXTENSION	TAX	TOTAL
		EARTH/DIRT/SOIL				
		ENVIRONMENTAL FEE				
		FUEL RECOVERY FEE				

MANIFEST #

DRIVER'S SIGNATURE

* 3-18-08

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE

* 03/18/08

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

A Plus
Materials Recycling Inc.
2710 LOOMIS RD. • STOCKTON, CA 95205
PHONE (209) 462-9168 • FAX (209) 462-9231

WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority to accurately weigh as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code and maintained by the Division of Measurement Standards of the California Department of Food and Agriculture.

TICKET NO. 2205078

DATE / TIME	PRODUCT	HAULER / TRUCK	LOCATION
3/18/2008	101	THORPE Jim Thorpe, Inc. 6	
04:47 pm	In-Clean Concrete and Rock		Port Stockton

CUSTOMER	QTY.	UNIT	PRODUCT	PRICE	AMOUNT
NC					
No Charge Inbound Concre					
Main Street					
Order No: MAIN					
Loads Today: 1					
Qty. Today: 11.66					
P.O.					

11.66 Main Street

A PLUS MATERIALS
2500 Port Rd 23
Stockton, CA 95202

Certified Weight
Leari Gross

A PLUS MATERIALS WEIGHMASTER , DRIVER CUSTOMER

CUSTOMER

G.4 - AST Letter

Environmental • Geotechnical • Special Inspections • Materials Testing
TERRASEARCH INC.
SERVING NORTHERN CALIFORNIA SINCE 1969

SAN JOSE
322 Piercy Road
San Jose, CA 95138
Phone: (408) 362-4920
Fax: (408) 362-4926

LIVERMORE
257 Wright Brothers Ave.
Livermore, CA 94551
Phone: (925) 243-6662
Fax: (925) 243-6663

SACRAMENTO
4200 N. Freeway Blvd.
Suite 2
Sacramento, CA 95834
Phone: (916) 564-7809
Fax: (916) 564-7672

OAKLAND
7700 Edgewater Drive
Suite 847
Oakland, CA 94621
Phone: (510) 633-1332
Fax: (408) 362-4926

FRESNO
4339 N. Golden State Blvd.
Suite 103
Fresno, CA 93722
Phone: (559) 271-0773
Fax: (559) 271-0763

WEBSITE
www.terrasearchinc.com

E-MAIL
info@terrasearchinc.com

Project No. 11515.E
March 10, 2008

Ms. Arlene Utal
Weatherbee Properties, LLC
3000 Danville Boulevard, Suite F-545
Alamo, California 94507

Subject: Proposed Residential Development
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
CONDITIONS IN THE VICINITY OF FORMER ABOVEGROUND STORAGE TANK (AST)

Reference: 1) Phase I Environmental Site Assessment
APNs 241-260-05; 241-040-04; -05; 241-240-02 & -03
2368, 20601 and 20611 Woodward Avenue
Manteca, California
By ***TERRASEARCH, inc.***
Dated May 29, 2007

Dear Ms. Utal:

Based on our site observations, ***TERRASEARCH, inc*** confirms that the conditions of stained soil within the vicinity of the former above ground storage tank (AST) have not changed since our last Phase I Environmental Site Assessment was conducted on May 29, 2007.

Should you have any questions relating to the contents of this letter report or require any additional information, please contact our office at your convenience.

Very truly yours,
TERRASEARCH, inc.

Reviewed by:

for Simon Makdessi, P.E., G.E.
Vice President/Senior Engineer

A. Wakil Mateen, R.E.A. I
Environmental Specialist

Copies: 2 to Weatherbee Properties, LLC

GENERATOR WASTE PROFILE SHEET

Requested Disposal Facility: Forward
an Allied Waste Company

Waste Profile #
AWI Sales Rep:
Date:

I. Generator Information

Generator Name: Weatherbee Properties			
Generator Site Address: 2368 Woodward Ave.			
City: Manteca	County: San Joaquin	State: CA	Zip: 95337
State ID/Reg No:	State Approval/Waste Code: (if applicable)		SIC Code:
Generator Mailing Address (if different): 3000 Danville Blvd. Ste F #545			
City: Alamo	County: Contra Costa	State: CA	Zip: 94507
Generator Contact Name: Dennis Lynch - Arlene Ufal			
Phone Number: 530-587-3000		Fax Number: 530-587-3007	

IIa. Transporter Information

Transporter Name: Jim Thorpe Oil		Contact Name: Marty	
Transporter Address:			
City:	County:	State:	Zip:
Phone Number:	Fax Number:	State Transportation Number:	

IIb. Billing Information

Bill To: Hazardous Disposal Specialists		Contact Name: Lisa Schrock	
Billing Address: 9705 Hwy 267, Ste 6			
City: Truckee	State: CA	Zip: 96161	Phone Number: 530-587-3000

III. Waste Stream Information

Name of Waste:	Soil contaminated diesel
Process Generating Waste:	Site cleanup of leaking above ground storage tank (diesel)
Type of Waste	☐ INDUSTRIAL PROCESS WASTE or ☒ POLLUTION CONTROL WASTE
Physical State:	☒ SOLID ☐ SEMI-SOLID ☐ POWDER ☐ LIQUID ☐ OTHER: ____
Method of Shipment:	☒ BULK ☐ DRUM ☐ BAGGED ☐ OTHER: ____
Estimated Annual Volume:	☒ CUBIC YARDS: 100-300 ☐ TONS: ____ ☐ GALLONS ____ ☐ OTHER: ____
Frequency:	☒ ONE TIME ☐ DAILY ☐ WEEKLY ☐ MONTHLY ☐ OTHER:
Special Handling Instructions:	

IV. Representative Sample Certification

☐ NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	☒ YES or ☐ NO
Sample Date: 6-8-05	Type of Sample: ☒ COMPOSITE SAMPLE ☐ GRAB SAMPLE
Laboratory: Mc Cambell	Sample ID Numbers: AST 1-5 AST 1-7.5
Sampler's Employer: Terrasearch	
Sampler's Name (printed): Kamran Ghiassi	Signature: X K. Ghiassi

REV 1

© Allied Waste, February 2001

ALLIED WASTE

GENERATOR WASTE PROFILE SHEET (continued)

Waste Profile #

V. Physical Characteristics of Waste

Characteristic Components	% by Weight (range)
1. Soil	95-100
2. rocks	0-#5
3.	
4.	
5.	

Color	Odor (describe)	Free Liquids	% Solids	pH:	Flash Point	Phenol
Brn	none	☐ YES or ☒ NO Content ____%	100	N/A	>200 °F	0 ppm

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Required Parameters Provided for this Profile

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and it epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	☐ Yes or ☒ No
Does this waste or generating process cause it to exceed OSHA exposure limits from high levels of Hydrogen Sulfide or Hydrogen Cyanide as defined in 40 CFR 261.23?	☐ Yes or ☒ No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	☐ Yes or ☒ No
Does this waste contain regulated concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	☐ Yes or ☒ No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31?	☐ Yes or ☒ No
Is this a regulated Toxic Material as defined by Federal and/or State regulations?	☐ Yes or ☒ No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	☐ Yes or ☒ No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	☐ Yes or ☒ No
Is this waste generated at a Federal Superfund Clean Up Site?	☐ Yes or ☒ No

VI. Generator Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue. I further certify that the company has not altered the form or content of this profile sheet as provided by Allied Waste.

Dennis Lynch, REA	Hazardous Disposal Specialists, Inc.
Authorized Representative Name And Title (Printed)	Company Name
Dennis Lynch	3-5-08
Authorized Representative Signature	Date

VII. Allied Waste Decision

☐ Approved ☐ Rejected Expiration: _____

Conditions:

Name, Title	Signature	Date

© Allied Waste, February 2001

Appendix H:
Levee Investigation

LEVEE SEEPAGE EVALUATION
STATION 854+00 TO 991+31

THE TRAILS OF MANTECA
MANTECA, CALIFORNIA

Submitted to:

Ms. Arlene Utal
Weatherbee Properties, LLC
3000 Danville Blvd, Suite F – 545
Alamo, CA 94507

March 23, 2009
Project No. 8188.001.000

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- Expect Excellence -

Project No.
8188.001.000

March 23, 2009

Ms. Arlene Utal
Weatherbee Properties, LLC
3000 Danville Blvd., Suite F – 545
Alamo, CA 94507

Subject: The Trails of Manteca
Manteca, California

LEVEE SEEPAGE EVALUATION – STATION 854+00 TO 991+31

Dear Ms. Utal:

With your authorization, we performed a geotechnical exploration and seepage evaluation of the existing dry land Reclamation District No. 17 (RD-17) Levee, which crosses The Trails of Manteca project in Manteca, California. RD-17 protects the project site and surrounding area against flooding from the San Joaquin River. The evaluated levee is approximately located between Woodward Avenue (levee Station 854+00) to South Airport Way (levee Station 991+31). The purpose of our study is to explore current levee conditions and conduct a seepage evaluation of the existing RD-17 levee adjacent to the site. The existing levee studied in our evaluation meets the current United States Army Corps of Engineers (Corps) guidance for under seepage, has a low potential for through seepage near the levee toe. Our detailed findings and conclusions are presented in this report.

We are pleased to be of service to you on this project. If you have any questions regarding the contents of this report, please do not hesitate to contact us.

Very truly yours,

ENGEO Incorporated

Matthew E. Swanson
mes/jf:levee

Josef J. Tootle, GE



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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of our study is to explore current levee conditions through research and geotechnical explorations, and perform an evaluation for the potential seepage of the subject dry land Reclamation District No. 17 (RD-17) Levee. Our services generally included: reviewing previously published geologic maps and geotechnical reports of the project site and general vicinity; performing sub-surface explorations, categorizing selective levee reaches, generating characterized models and material properties for levee sections; using the software Seep/w to conduct an analysis of existing conditions; and preparing this report. The subject levee delineation and vicinity of the RD-17 Levee is presented in Figure 1, Vicinity Map. The portion of the RD-17 Levee system analyzed for this study primarily consists of Non-Project Levee; however, the westernmost extent of the evaluated levee is part of the Federal Project Levee System. Our study was conducted in general conformance with Army Corps of Engineers and California Department of Water Resources guidelines.

This report was prepared for the exclusive use of Weatherbee Properties, LLC and their design team consultants. In the event that any changes are made in the character, design, or layout of the project, the conclusions and recommendations contained in this report must be reviewed by ENGEO Incorporated to determine whether modifications to the report are necessary. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without the express written consent of ENGEO Incorporated.

1.2 SITE LOCATION AND DESCRIPTION

The Trails of Manteca Project is rectangular in shape and encompasses approximately 530 acres south of Highway 120 in Manteca, CA. The project is bound by Woodward Avenue to the north and west, the Walthall Slough to the southwest, and active agricultural lands to the south and east. A dry land levee, part of the RD-17 levee system, crosses the project site. A residence and agricultural support facilities are located near the center of the site, which is surrounded by active agricultural lands. The farm lands are subdivided by dirt roads and irrigation canals. With the exception of the elevated levee, the site is relatively flat at an approximate ground surface elevation varying from 17 to 19 feet (NGVD29).

1.2.1 RD-17 Levee System

The overall area protected by the RD-17 levees is approximately 13,000 acres bound by the French Camp Slough to the north, the San Joaquin River to the west, and Weatherbee Lake to the south. The RD-17 Project Levee is situated along the south (left) bank of French Camp Slough, the east (right) bank of the San Joaquin River, and the north (right) bank of the Weatherbee Lake area. The entire Project Levee is continuous, extending approximately 16 miles from Stockton, California south to Unincorporated San Joaquin County, California.

1.2.2 Subject Levee

The dry land RD No. 17 Levee extends between the approximate Stations of 540+00 (South Woodward Avenue) to 991+31 (South Airport Way). The portion of the levee that exists within The Trails of Manteca Project is between the approximate levee Stations 540+00 (South Woodward Road) and 930+00 (where the levee turns due east). The crown elevation of the levee varies between approximately 27 and 32 feet (NGVD29). The crown width varies between 15 and 20 feet. The majority of the waterside levee slopes have an approximate gradient of 3:1 (horizontal:vertical) along the entire area; however, there are areas where the gradient ranges from 10:1 to 2.5:1. Similarly, the typical landside gradient along the levee is approximately 3:1 with areas that flatten to slopes of approximately 6:1. Active, relatively flat agricultural lands are adjacent to both the land and water sides of the dry land levee.

1.3 PROPOSED DEVELOPMENT

It is our understanding, based on conversations with Weatherbee Properties, LLC and a preliminary site development plan provided by UDI-Tetrad Consulting Engineers, Inc., that The Trails of Manteca Project will consist of mixed-use residential development on the north side of the RD-17 levee. Site improvements for the development include interior streets, walkways, and underground utility construction. We anticipate that the site grading for the proposed development will likely consist of only minor cutting and filling to establish building pads and street grades.

1.4 PREVIOUS STUDIES AND REPORTS

The engineering analysis and recommendations contained herein took into account previous subsurface explorations and laboratory analysis that were performed in the following reports:

1. Fugro West, Inc. 2007 – Preliminary Geotechnical Data Report, Reclamation District 17 (provided by DWR).

2. Kleinfelder, Inc. 1987 – Evaluation of Levees Bordering Reclamation District 17.

3. Terra Search, Inc. 2007 – Preliminary Geotechnical Investigation on proposed Trails of Manteca.

4. William Lettis & Associates, Inc. 2007 – Surficial Geologic Map of the Eastern Side of the San Joaquin River, along RD-17 Levee System near Stockton and Lathrop, California (provided by DWR).

Subsurface explorations pertaining to the levee and surrounding area that are published in the above referenced reports are presented in Appendix A. Locations of these explorations are presented on Figure 2, Site Plan.

2.0 GEOLOGIC CONDITIONS

2.1 GEOLOGY

The Project Levee is located in the Great Valley Geomorphic Province of California. This valley is an asymmetric trough filled with a thick sequence of sediments from the Jurassic (180 million years ago) to Recent age. The sediments within the Valley vary between 5 and 10 kilometers in thickness and were mostly derived from erosion of the Sierra Nevada mountain range to the east, with lesser material from the Coast Range Mountains to the west.

Most of the sediments deposited in the Sacramento-San Joaquin Delta prior to 25 million years ago were accumulated in marine environments and the younger deposits (25 million years ago to recent) are generally described as non-marine (Burroughs 1967); however, Hackel (1966) indicates that some of the younger deposits must have formed in shallow seas and estuaries as marine deposits. According to Atwater (1982), the depositional history of the Delta during the late Quaternary (past one million years) was probably controlled by several cycles related to fluctuations in regional and global climate in which each cycle consisted of a period of deposition followed by a period of non-deposition and erosion. Thus, according to Atwater (1982), the Delta region during the late Quaternary time experienced scenarios of wetlands and flood plain creation as the tidewater rose in the valley from the west; areas of erosion when tidewaters receded; deposition of alluvial fans that were reworked by wind to create extensive sand dunes; and alluvial fan deposition from streams emanating from the adjacent mountain ranges (Atwater, 1982).

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION

Our field exploration was conducted in July 2008. The field exploration consisted of drilling 3 borings to a maximum depth of approximately 139½ feet and advancing 13 Cone Penetration Tests (CPTs) to a maximum depth of approximately 140 feet at the approximate locations shown on Figure 2, Site Plan. The exploration locations were approximately located by estimating from existing features and the use of a topographic map and aerial photographs. With the exception of one CPT (3-CPT114), the CPT locations were verified by professional surveying services performed by UDI-Tetrad Consulting Engineers, Inc. Boring logs and CPT logs are presented in Appendix B.

Borings 3-B-103, 3-B-104, and 3-B-105 were drilled with a truck-mounted CME-75 drill rig equipped with $4^{7}/_{8}$-inch drill bit using the rotary wash method. These borings were cased within the levee section and extending down to the elevation where groundwater was encountered during drilling. An ENGEO representative logged the borings in the field and collected soil samples using either a 3-inch O.D. California-type split-spoon sampler fitted with 6-inch-long brass liners, or a 2-inch O.D. Standard Penetration Test (SPT) split-spoon sampler. The samplers were advanced with a 140-pound hammer with a 30-inch drop, employing an automatic hammer system. The penetration of the samplers into the native materials was field-recorded as the

number of blows needed to drive the sampler 18 inches in 6-inch increments. Blow count results on the boring logs were recorded as the number of blows required for the last one foot of penetration, or the distance indicated if driving refusal was encountered.

The CPT soundings were performed utilizing a 20-ton compression-type cone with a 15-square-centimeter (cm^2) base area, an apex angle of 60 degrees, and a friction sleeve with a surface area of 225 cm^2. The cone, connected with a series of rods, is pushed into the ground at a constant rate. Cone readings are taken at approximately 5-cm intervals with a constant penetration rate of 2 cm per second in accordance with ASTM D-3441. Measurements include the tip resistance to penetration of the cone (Qc), the resistance of the surface sleeve (Fs), and pore pressure (U) (Robertson and Campanella, 1989).

The logs depict subsurface conditions within the borings at the time the exploration was conducted. Subsurface conditions at other locations may differ from conditions noted at these locations. The passage of time may result in altered subsurface conditions. In addition, stratification lines represent the approximate boundaries between soil types and the transitions may be gradual.

3.2 LABORATORY TESTING

Selected samples recovered during drilling were tested to determine the following soil characteristics:

CHARACTERISTIC	TEST METHOD
Natural Unit Weight and Moisture Content	ASTM D-2216
Plasticity Index	ASTM D-4318
Grain Size Distribution	ASTM D-422
Triaxial Compression Test – UU	ASTM D-2850

The laboratory test results are shown on the boring logs (Appendix B) while individual test results are presented in Appendix C.

3.3 SUBSURFACE STRATIGRAPHY

The soil encountered in our exploration locations generally consisted of loose to medium dense sand to silty sand with occasional thin layers of silt and clay within the levee sections, over a thick dense to very dense sand to silty sand layer. The exploratory boring logs presented in Appendix B provide detailed descriptions of the soil conditions at each location explored.

3.4 GROUNDWATER CONDITIONS

Groundwater was measured in all of our exploratory borings at depths ranging from elevations 7 to 16½ feet (NGVD29). Due to San Joaquin County geotechnical boring permit requirements, borings could not be left open for sufficient periods of time to establish equilibrium groundwater conditions; therefore, stabilized depths to groundwater could not generally be measured accurately. The depth of the groundwater encountered in this study should be used for preliminary design purposes. In addition, the groundwater elevation may fluctuate due to irrigation, pumping rates, seasonal variation in rainfall, tidal action or other factors not in evidence at the time of our exploration.

4.0 LEVEE SEEPAGE ANALYSIS

Using the findings from our own exploration and information published in previous reports, seepage analyses were performed for the subject RD-17 levee. Levee cross sections were provided by UDI-Tetrad Consulting Engineers, Inc. (UDI-Tetrad) in NGVD29 elevations (UDI-Tretrad 2008). Levee profiles, stationing, and water surface elevations were provided by Kjeldsen, Sinnock, Neudeck Inc. (KSN) in NGVD29 elevations (KSN January and April 2008). Our analysis was conducted in NGVD29 datum.

4.1 WATER SURFACE ELEVATIONS

Our levee seepage evaluation considered the 100-year water surface elevation that is based on the 1997 downstream elevation control at the San Joaquin River for Reclamation District No. 2094-Walthall Tract (RD-2094). RD-2094 is located east of Walthall Slough, immediately south of RD-17's dry land levee. The Plan of Reclamation for RD-17 specifies the performance of a relief cut along the RD-2094 San Joaquin River Levee at elevation 26 feet (NGVD29). The considered 100-year flood elevation is continuous at elevation 26 feet throughout the entire levee length.

4.2 IDEALIZED STRATIGRAPHY

An idealized subsurface stratigraphy is a modeling of the various soil layers and their respective thicknesses and depths that have been logged through subsurface exploration. Using findings from our own exploration and information presented in previous investigations and studies considering the levee and surrounding areas, we prepared idealized subsurface stratigraphies for four reaches. The subsurface stratigraphies were considered representative of the levee sections along the respective continuous levee reaches. Exploration logs, lab data, and geomorphologic and geologic conclusions were interpreted to compose analytical models of the selected reaches. The analytical models are the characterizations of the subsurface stratigraphies and surveyed cross sections provided by UDI Tetrad. The models for this evaluation are presented on the analysis figures in Appendix D.

4.3 HYDRAULIC CONDUCTIVITY

The hydraulic conductivities of the materials in this evaluation are determined for saturated materials; hydraulic conductivities are generally much higher for saturated soils. The URS Guidance Document for Geotechnical Analysis (URS 2007), Kozey-Charmen (KC) equation (Chapuis et al. 2003), and previous hydraulic evaluations were used in determining soil conductivities (K) of the levee and the foundation soils, as modeled.

In sedimentary units, it is common to have anisotropic porous media. This occurs when the geometry of the voids between the soil particles is not uniform in all directions; therefore, the permeability in one direction may be greater. For this evaluation, the ratio of horizontal conductivity to vertical conductivity (K_h/K_v) is based on the values published in the URS guidance document in correspondence with idealized and documented stratigraphy.

4.4 SELECTION OF REACHES

We divide the limits of this evaluation into four reaches with the following approximate stationing: A (854+00 to 909+00), B (909+00 to 959+00), C (959+00 to 972+00), and D (972+00 to 991+29). The limits of these reaches are based on characterizations of similar levee geometry, subsurface stratigraphy, soil properties, anticipated similarities in possible seepage mitigation measures, and physical site constraints (such as existing swales and levee delineation).

4.5 SEEP/W SOFTWARE

A seepage analysis using the software program Seep/w was performed in this levee evaluation. Seep/w is a two-dimensional finite solution program that is widely used in soil and other material seepage evaluations. Seep/w performed steady state evaluations for the sections modeled in this study. The steady state condition occurs when the water remains at or near the full-flood scenario long enough so that the embankment becomes fully saturated and a condition of steady seepage occurs.

Our Seep/w analyses are based on the analytical models generated through the characterizations of the subsurface stratigraphies and surveyed surface profiles provided by UDI-Tetrad. The data from geotechnical exploration and laboratory testing by ENGEO and others was utilized in determining idealized sub-surface stratigraphy. Modeling boundary conditions, drains, and model limits recommended in the March 2008 URS guidance document were adhered to in our analyses.

By viewing the resulting information of the calculated model we can view the vertical gradient (Y-Gradient) value by selecting any portion of the model. Exit gradient is the vertical gradient of the modeled levee at the landside toe of the levee, and can be identified using Seep/w result information for a specific location. Based on US Army Corps of Engineers (EM 1110-2-1913, as modified by ETL 1110-2-569), the current guidance for upward gradient at the toe of the levee and/or seepage berm (exit gradient) is to not be greater than 0.5. If the exit gradient of a levee without a seepage berm exceeds 0.8, the US Army Corps of Engineers (USACE) specifies

further criteria to meet factors of safety against under-seepage. The calculated model also displays the free water surface level through the cross section, as shown in Appendix D. If the free water elevation extends to a point on the land side face, above the toe of the levee, through seepage can be identified.

5.0 CONCLUSIONS

We performed a seepage analysis on the existing levee conditions for Reaches A, B, C, and D as well as the currently proposed graded conditions for Reach A and the portion of Reach B that is located adjacent to the Trails of Manteca project.

The existing levee studied in our evaluation meets the current United States Army Corps of Engineers (Corps) guidance for under seepage; however, the levee has a low potential for through seepage near the levee toe. The proposed project grading includes placing approximately 3 feet of engineered fill at the toe on the landside of the project. The addition of the fill on the landside toe reduces the potential for through seepage near the levee toe as shown below.

5.1 RESULTS

The results of our seepage analysis based on the existing topography using Seep/w are summarized in the following table.

EXISTING CONDITIONS

REACH	APPROXIMATE LIMITS	EXIT GRADIENT	COMMENTS
A	854+00 to 909+00	0.38	The free water surface level exits the landside face approx. 2 feet above the land side toe.
B	909+00 to 959+00	0.38	The free water surface level exits at the landside toe.
C	959+00 to 972+00	0.35	The free water surface level exits the landside face approx. 2 feet above the land side toe.
D	972+00 to 991+29	0.02	The free water surface level exits at the landside toe. The crown elevation of the levee provides approx. 18 inches of freeboard.

As previously mentioned, the currently proposed grading for the Trails of Manteca Project includes placing approximately 3 feet of engineered fill at the landside toe adjacent to the proposed development. In addition, there are several areas where proposed streets, residential

pads, and basins are located adjacent to the levee toe within Reaches A and B. Therefore, we performed additional seepage analyses in seven locations where we determined the most critical seepage conditions would occur. The results of our analyses are summarized in the table below.

PROPOSED GRADED CONDITIONS

REACH	STATION	EXIT GRADIENT	COMMENTS
A	856+00 Basin Full	0.38	The free water surface level is below toe of levee
A	856+00 Basin Empty	0.66	The free water surface level is below toe of levee
A	868+00	0.39	The free water surface level is below toe of levee
A	881+00 Basin Empty	0.23	The free water surface level is below toe of levee
A	887+00 Basin Empty	.28	The free water surface level is below toe of levee
A	900+00	.27	The free water surface level is below toe of levee
B	912+00	.13	The free water surface level is below toe of levee
B	925+00	.22	The free water surface level is below toe of levee

Based on the results of our analysis, once the mass grading of the project is complete, Reaches A, B, and D will have acceptable exit gradients provided that the Basin located at Station 856+00 remains full during a high water stage event. The free water surface level is located below the toe of the slope for Reaches A, B, and D. Reach C will require improvement to mitigate through-seepage.

Based on our analysis, groundwater will manifest itself at the surface at various distances from the levee within the subdivision. Consideration should be given to providing a subsurface drainage system located between the levee and the subdivision to control this water during a high water stage event.

5.2 SEEPAGE MITIGATION

To mitigate through- and under-seepage, levee improvements must result in the phreatic surface being lowered to the landside levee toe (not allowing the phreatic surface to daylight on the landside face of the levee), and an exit gradient that does not exceed 0.5. Seepage can be mitigated by any one or combination of chimney drains, seepage berms, trench drains, and/or cutoffs. Generalizations of these types of improvements are detailed in Figure 3.

Chimney drains (an inclined drainage layer within the levee section) can be installed within the existing levee section extending from above the pheratic surface down to the levee toe elevation. Chimney drains should be designed to intercept the through seepage within the levee embankment and transmit the seepage out of the levee toe.

Seepage berms are soils place at the landside toe of the levee to improve exit gradients and reduce through-seepage. Seepage berms typically contain a filter material which acts as a drainage layer. Historically, the filter material has been either an open-graded drain rock encased by synthetic filter fabric, or a specifically grade sand material that is capable of both filtering fine-grained material and conducting under-seepage waters. Seepage berms can be built to elevations above the point where the free water surface exits the landside face of the levee. By extending a seepage berm from the existing landside toe of levee, a satisfactory exit gradient can be achieved while providing a path for the phreatic surface to reach the landside toe.

Cutoffs can generally be described as the installation of a vertical impervious element at, or near, the centerline of the levee. Where physical constraints do not allow an adequate seepage berm and/or trench drain, a cutoff may be installed as an alterative. Installing a highly impervious material through a levee forces the free water surface to plummet downward with the cutoff. Thus, with an appropriate cutoff depth, the free water surface level reaches the ground surface landward of the levee land side toe. Cutoffs can also be used to reduce exit gradients. The depth of the cutoff can be governed by the amount of exit gradient mitigation that is required.

Exit gradients can also be reduced by installing a drainage system at the landside toe of the levee or seepage berm; this improvement is known as a trench drain. The drainage system consists of a perforated pipe that is covered by a vertical column of drain rock. The groundwater collected by the pipe is then dispensed into a closed drain system away from the levee.

As mentioned above, during a flood event, there is the potential for groundwater to surface within the subdivision. The groundwater would not affect the performance of the levee, but could affect the performance of adjacent roadways and saturate building pads. A drainage system consisting of an approximately 3- to 5-foot-deep trench with a 12-inch-diameter perforated pipe encapsulated with Class 2 permeable material along the western edge of the proposed development would create an approximate flow of .01 and .02 gallons per minute for every linear foot of the drainage system.

5.3 AREAS OF HISTORIC SEEPAGE

It should be noted that in areas where seepage has been known to occur (evident by historic documents and/or sand boils), the USACE requires the installation of a seepage berm with a width equal to four times the height of the levee at that particular location. During the 1997 flood, low levels of under-seepage were observed – no sand boils were observed, though there was standing water. Further, no through-seepage was observed during the 1997 storm event. Some seepage is normally anticipated during flood-stage water levels. It is our opinion that seepage observed during the 1997 flood does not constitute the need for historic seepage mitigation.

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this report to developers, contractors, buyers, architects, engineers and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The conclusions and recommendations contained in this report are solely professional opinions.

The professional staff of ENGEO Incorporated strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. There are risks of earth movement and property damages inherent in land development. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our work.

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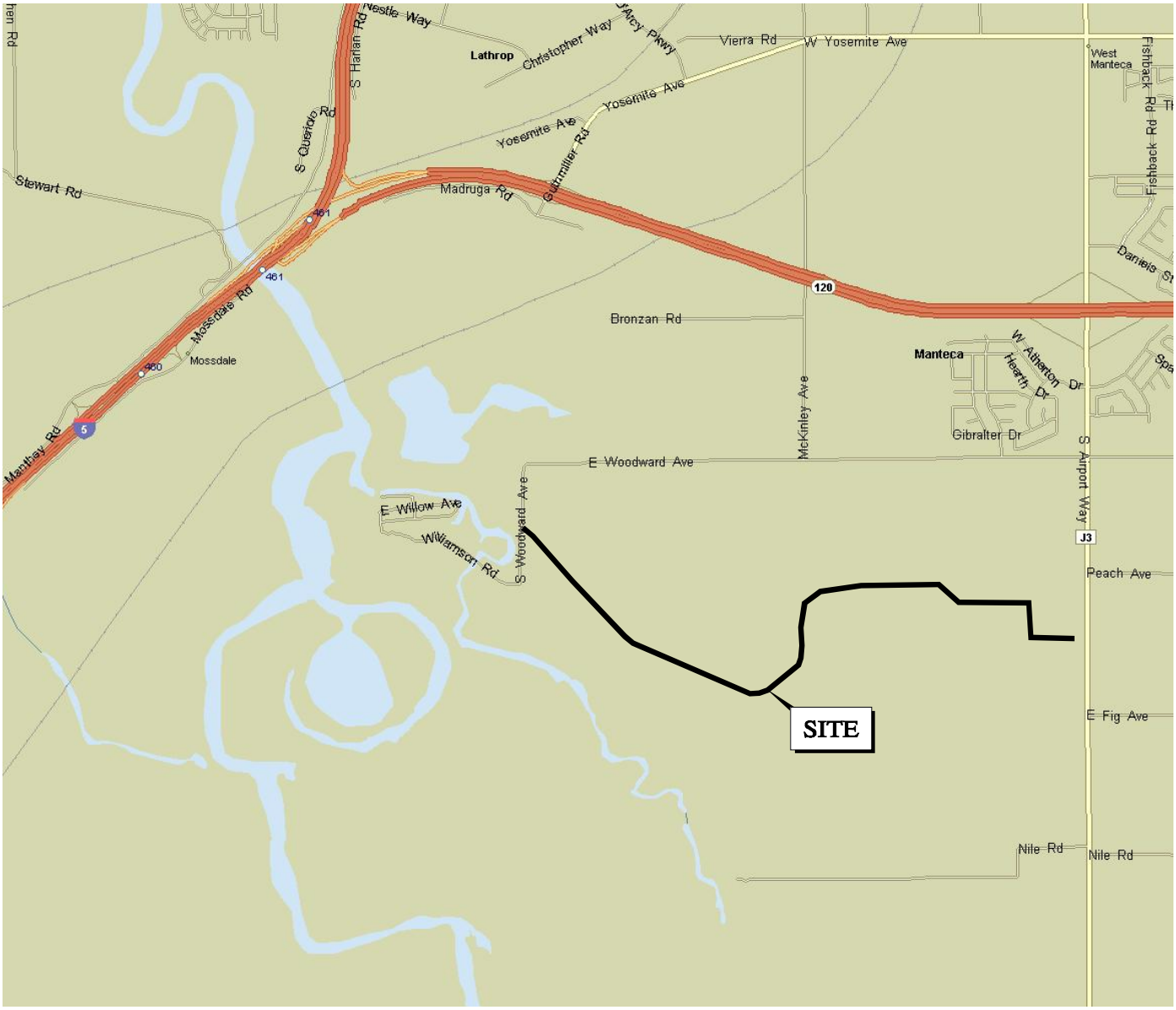
LIST OF FIGURES

Figure 1	Vicinity Map
Figure 2	Site Plan
Figure 3	Generalized Levee Improvements

FIGURES



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BASE MAP SOURCE: MS STREETS AND TRIPS

ENGEO Expect Excellence

VICINITY MAP

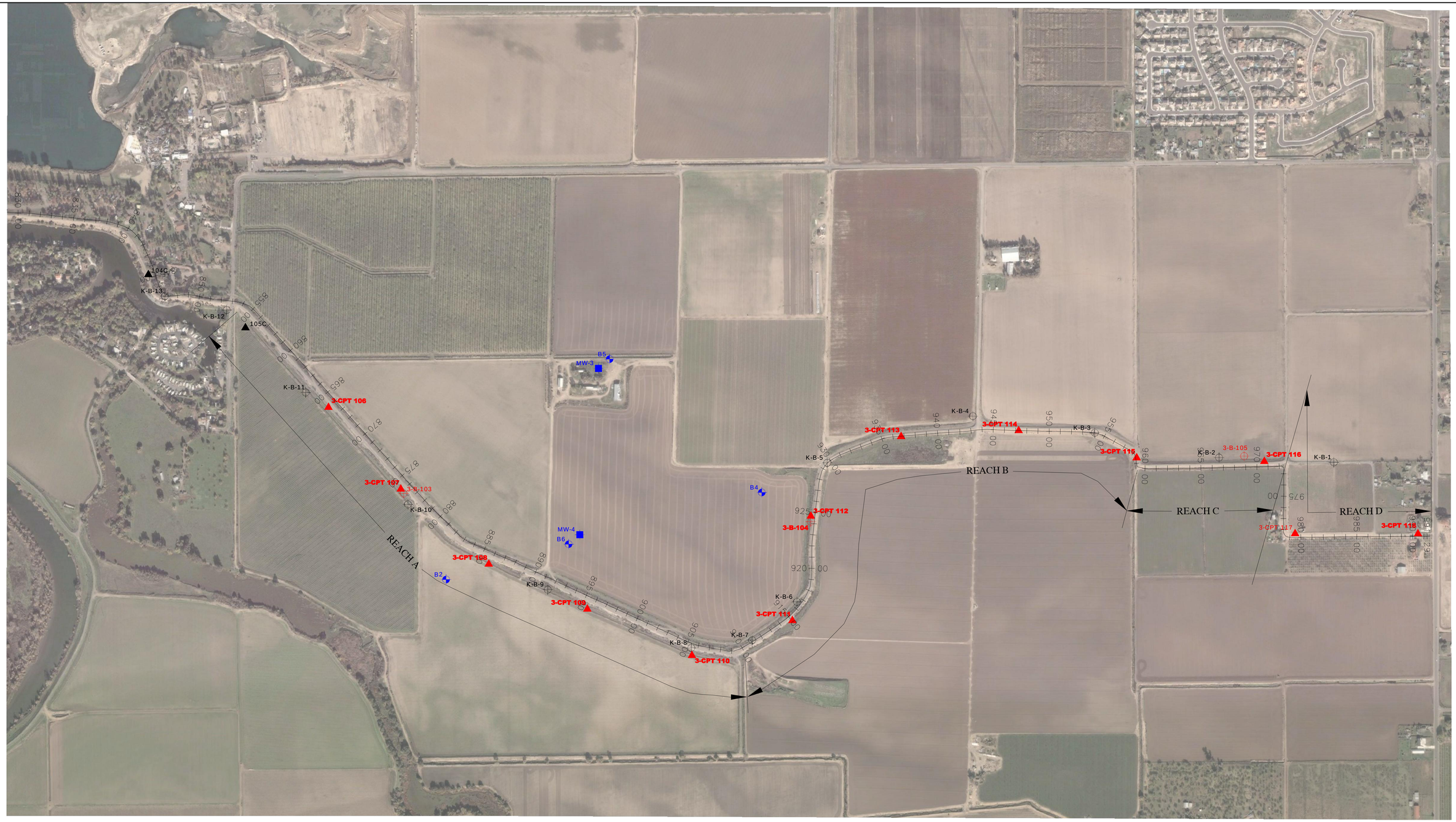
THE TRAILS OF MANTECA

MANTECA, CALIFORNIA

PROJECT NO.: 8188.001.000	FIGURE NO. 1
DATE: MARCH 2009	
DRAWN BY: SRP	CHECKED BY: JJT

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EXPLANATION

- 3-B-105 — APPROXIMATE LOCATION OF BORING (ENGEO, 2008)
- B6 — APPROXIMATE LOCATION OF BORING (TERRASEARCH, 2007)
- K-B-13 — APPROXIMATE LOCATION OF BORING (KLEINFELDER, 1986 TO 1989)
- 3-CPT-118 — APPROXIMATE LOCATION OF CONE PENETRATION TEST (ENGEO, 2008)
- 001C — APPROXIMATE LOCATION OF CONE PENETRATION TEST (FUGRO, 2006-2007)
- MW-4 — APPROXIMATE LOCATION OF MONITORING WELL (TERRASEARCH, 2007

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BASE MAP SOURCE: U.S.G.S.

ENGEO Expect Excellence

SITE PLAN
TRAILS OF MANTECA
MANTECA, CALIFORNIA

PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: SRP
CHECKED BY: JJT

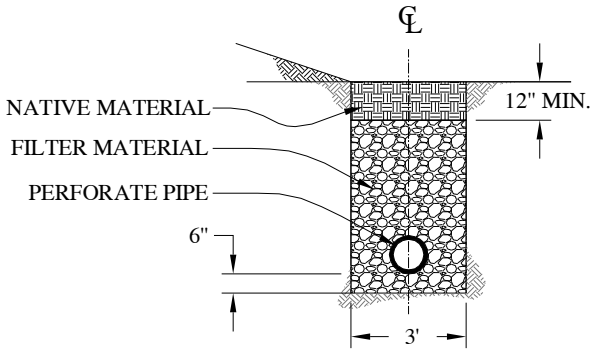
FIGURE NO. 2

ORIGINAL FIGURE PRINTED IN COLOR

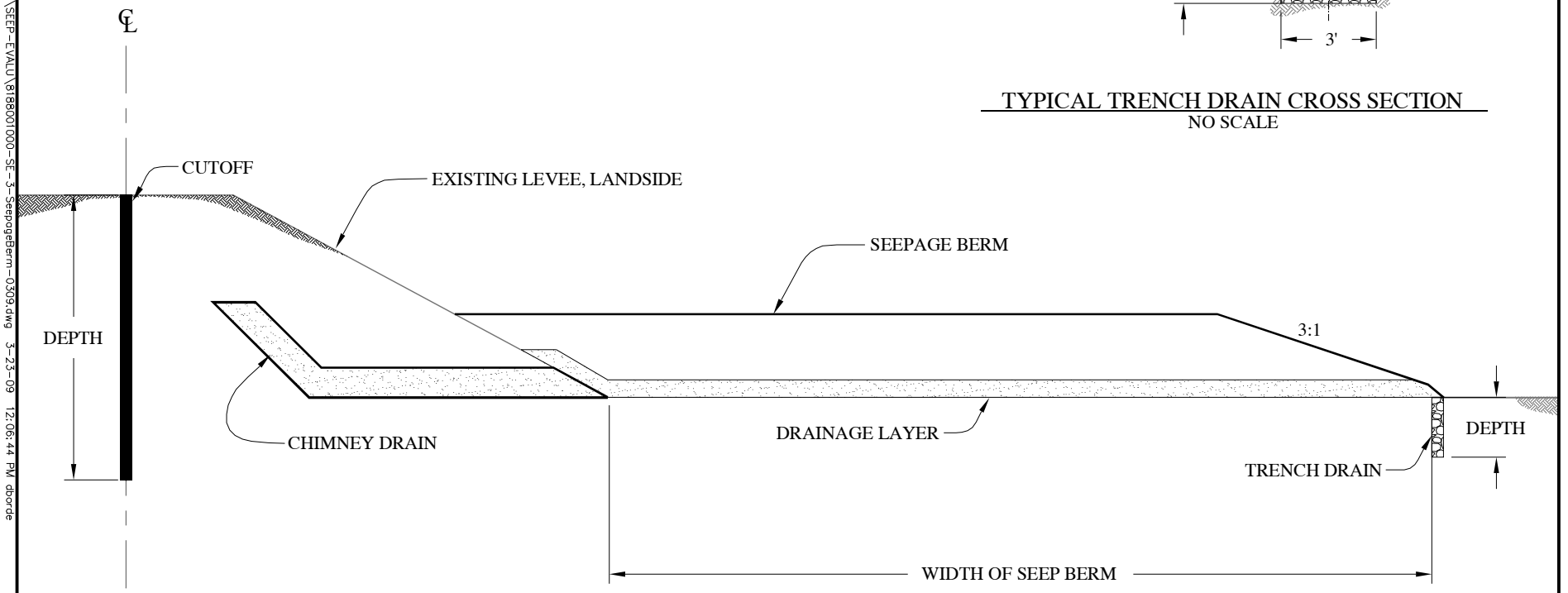
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TYPICAL TRENCH DRAIN CROSS SECTION
NO SCALE



NO SCALE

ENGEO Expect Excellence

GENERALIZED LEVEE IMPROVEMENTS
THE TRAILS OF MANTECA
MANTECA, CALIFORNIA

PROJECT NO.: 8188.001.000	FIGURE NO. 3
DATE: MARCH 2009	
DRAWN BY: SRP	CHECKED BY: JJT

APPENDIX A

Exploration Logs (by others)

APPENDIX A



BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B1

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH					Dark brown, widely graded clayey SAND (SC) or well graded SAND (SW), medium dense, moist			
			11-7-8 (15)					
	5		6-6-6 (12)		loose	119	12	
	10		3-5-4 (9)		Gray, silty CLAY (CL), firm, medium plasticity, damp to moist	94	28	LL=23, PI=10
	15		1-3-8 (11)		Olive, poorly graded clayey SAND (SC), medium dense			
	20		15-14-12 (26)			101	24	
	25		11-24-32 (56)		Yellow brown, fine to coarse grained SAND (SM), dense, wet			
	30		13-30-40 (70)		very dense			

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 2

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B1

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 2 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	40		30-33-41 (74)		Yellow brown, fine to coarse grained SAND (SM), dense, we*(continued)*			
					Gray, clayey SAND (SC), damp to moist			
			10-12-13 (25)		Gray, silty CLAY, very stiff, medium plasticity, damp to moist	100	24	
					Boring was terminated at about 41.5 feet below ground surface (bgs). Free water was not encountered.			
	45							
	50							
	55							
	60							
	65							

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

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MANTECA, CALIFORNIA

Figure No. 2

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B2

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, poorly graded clayey SAND (SC), loose, damp to moist			
			6-4-4 (8)					
	5		5-8-10 (18)		medium dense		19	
					Brown, fine to coarse grained SAND (SM), medium dense, damp to moist			
	10		4-7-11 (18)					
	15		6-13-14 (27)					
	20		13-16-17 (33)		dense			
	25		12-15-20 (35)				19	
	30		12-19-24 (43)					

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

GEOTECHNICAL ENGINEERS AND GEOLOGISTS
TERRASEARCH INC.
257 Wright Brothers Ave. Livermore, Ca. 94551 Phone (925) 243-6662

BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 3

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B2

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 2 of 2

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 41.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	40		12-16-20 (36)		Brown, fine to coarse grained SAND (SM), medium dense, damp to mois*(continued)*			
			24-27-35 (62)		Boring was terminated at about 41.5 feet below ground surface (bgs). Free water was not encountered			
	45							
	50							
	55							
	60							
	65							

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 3

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B3

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH			2-7-5 (12)		Tannish brown, clayey SAND (SC), loose, damp to moist			
	5		6-13-9 (22)		dark brown, medium dense	104	21	
	10		3-6-6 (12)		Brown, fine SAND (SP), medium dense, damp to moist			
	15		11-13-10 (23)				24	
	20		16-15-17 (32)		dense			
	25		9-10-13 (23)		medium dense			
	30		12-25-30 (55)		Light brown, medium to coarse grained SAND, very dense, moist			
					Boring was terminated at about 31.5 feet below ground surface (bgs). Free water was not encountered.			

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 4

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B4

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, poorly graded medium grained SAND (SP), medium dense, moist			
			10-10-11 (21)					
	5		5-8-8 (16)					
	10		4-7-9 (16)					
	15		6-7-9 (16)		gray			
	20		5-6-12 (18)		Light brown, silty CLAY (CL), very stiff, medium plasticity, iron staining, damp to moist		33	LL=45, PI=23
	25		12-16-22 (38)		Light brown, coarse grained SAND (SM), medium dense, wet			
	30		13-15-26 (41)		dense			
					Boring terminated at about 31.5 feet below ground surface (bgs). Free water was not encountered.			

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 5

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B5

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, poorly graded fine SAND (SM), loose, moist			
			2-4-6 (10)					
	5		3-5-6 (11)		medium dense			
	10		3-5-6 (11)		Tannish brown, coarse grained SAND (SM), medium dense			
	15		5-9-11 (20)		gray		19	
	20		11-12-14 (26)					
	25		7-10-19 (29)		fine to coarse grained			
	30		9-21-25 (46)		dense			
					Boring was terminated at about 31.5 feet below ground water surface (bgs). Free water was not encountered.			

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BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 6

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

BOREHOLE LOG

Location: Manteca | Elevation: | Boring No.: B6

Date Drilled - Start: 05/24/2005 | Finished: 05/24/2005 | Logged By: A. Tarin | Sheet 1 of 1

Drill Rig: CME | Drilling Method: Rotary Wash

Hammer: 140lbs 30" | Drilling Contractor: Spectrum

Boring Backfill Method: Cement Grout | Total Depth of Boring: 31.5 ft.

DRILLING DETAILS	DEPTH	SAMPLER TYPE	BLOW COUNT	GRAPHIC LOG	MATERIAL DESCRIPTION	LAB TESTS: DRY DENSITY	LAB TESTS: MOISTURE CONTENT	OTHER NOTES REMARKS
ROTARY WASH	0				Dark brown, fine grained SAND (SM) with minor clay, loose, moist	1		
			6-5-4 (9)					
	5		2-3-5 (8)					
	10		1-3-6 (9)		Dark brown, coarse grained SAND (SM), loose			
	15		8-11-11 (22)		medium dense			
	20		6-8-10 (18)					
	25		11-19-25 (44)		dense			
	30		14-19-21 (40)		medium dense			
					Boring terminated at about 31.5 feet below ground surface (bgs). Free water was not encountered.			

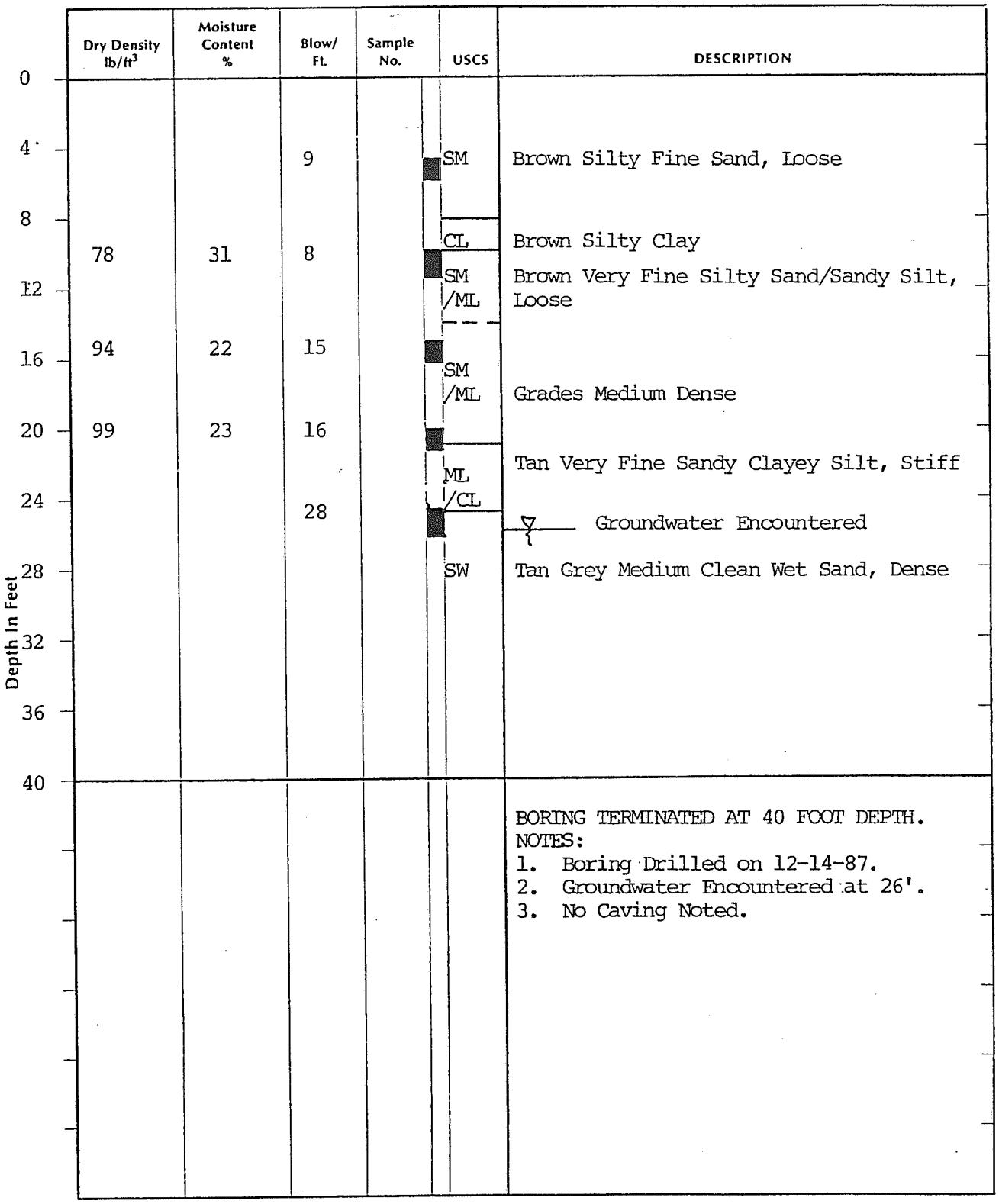
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TERRASEARCH INC.
257 Wright Brothers Ave. Livermore, Ca. 94551 Phone (925) 243-6662

BAIRD RANCH
MANTECA, CALIFORNIA

Figure No. 7

Date:	Drawn by:	Project No.	Reviewed By:
	GC		K. Ghiassi

BOREHOLE 2 W/GW 11515.G-MANTECA SITE.GPJ TERRASEARCH.GDT 5/30/07

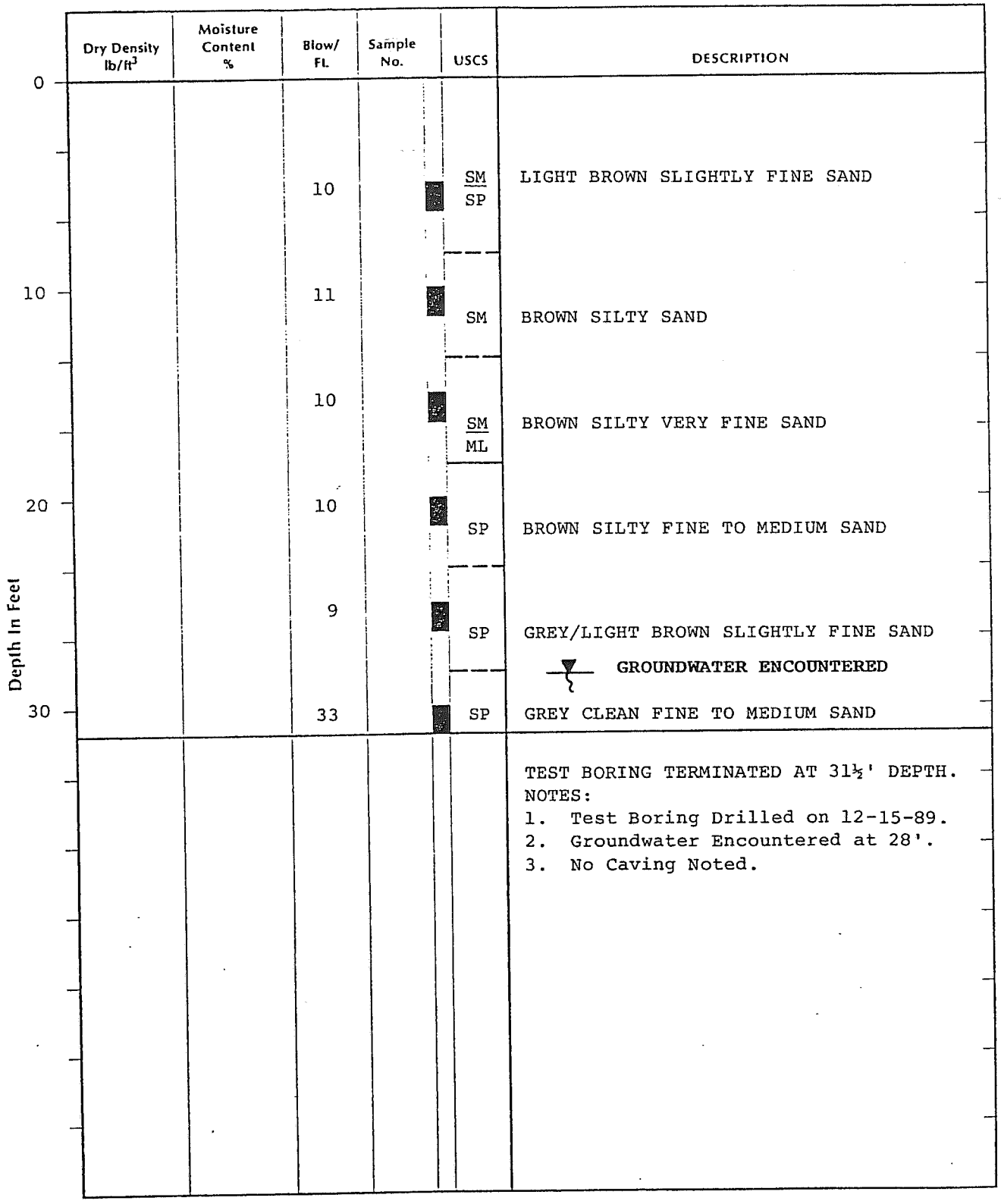


KLEINFELDER

PROJECT NO. 20-2631-04

LOG OF BORING NO. B-11 B-1

PLATE IV



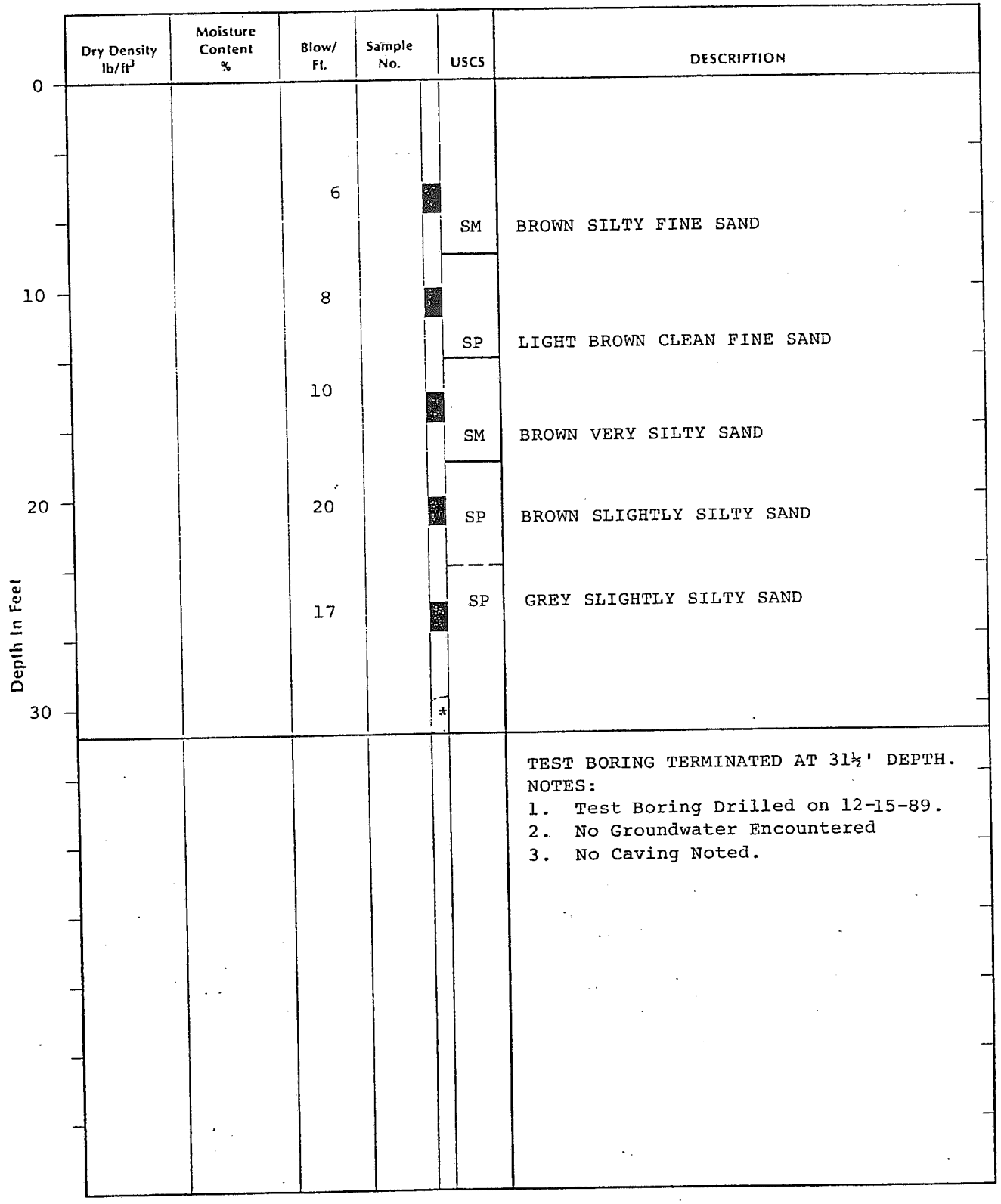
KLEINFELDER

PROJECT NO. 20-2598-02

LOG OF BORING NO. B-10

PLATE

R-22

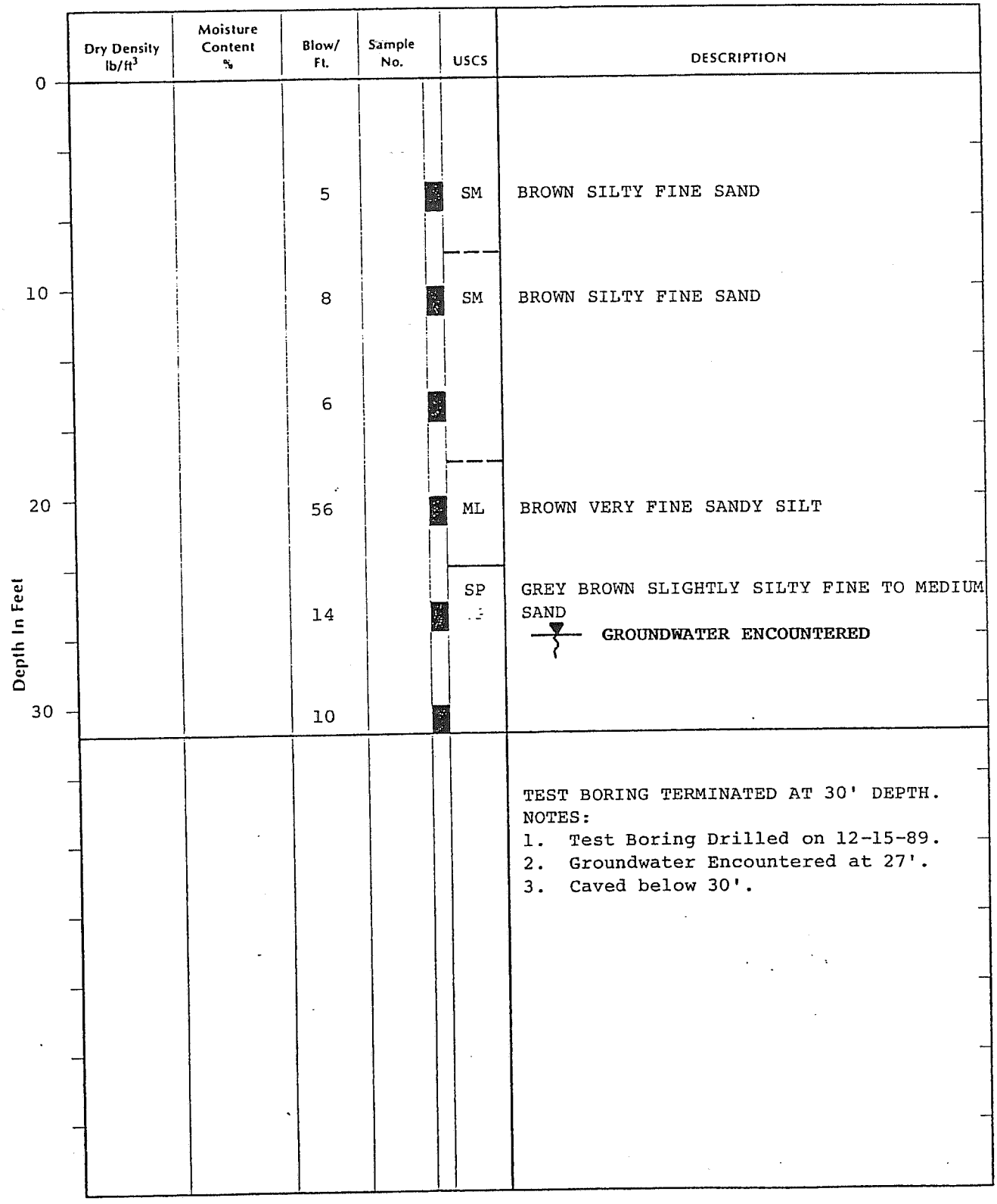


KLEINFELDER

PROJECT NO. 20-2598-02

LOG OF BORING NO. B-9

PLATE



KLEINFELDER

PROJECT NO. 20-2598-02

LOG OF BORING NO. B-8

PLATE

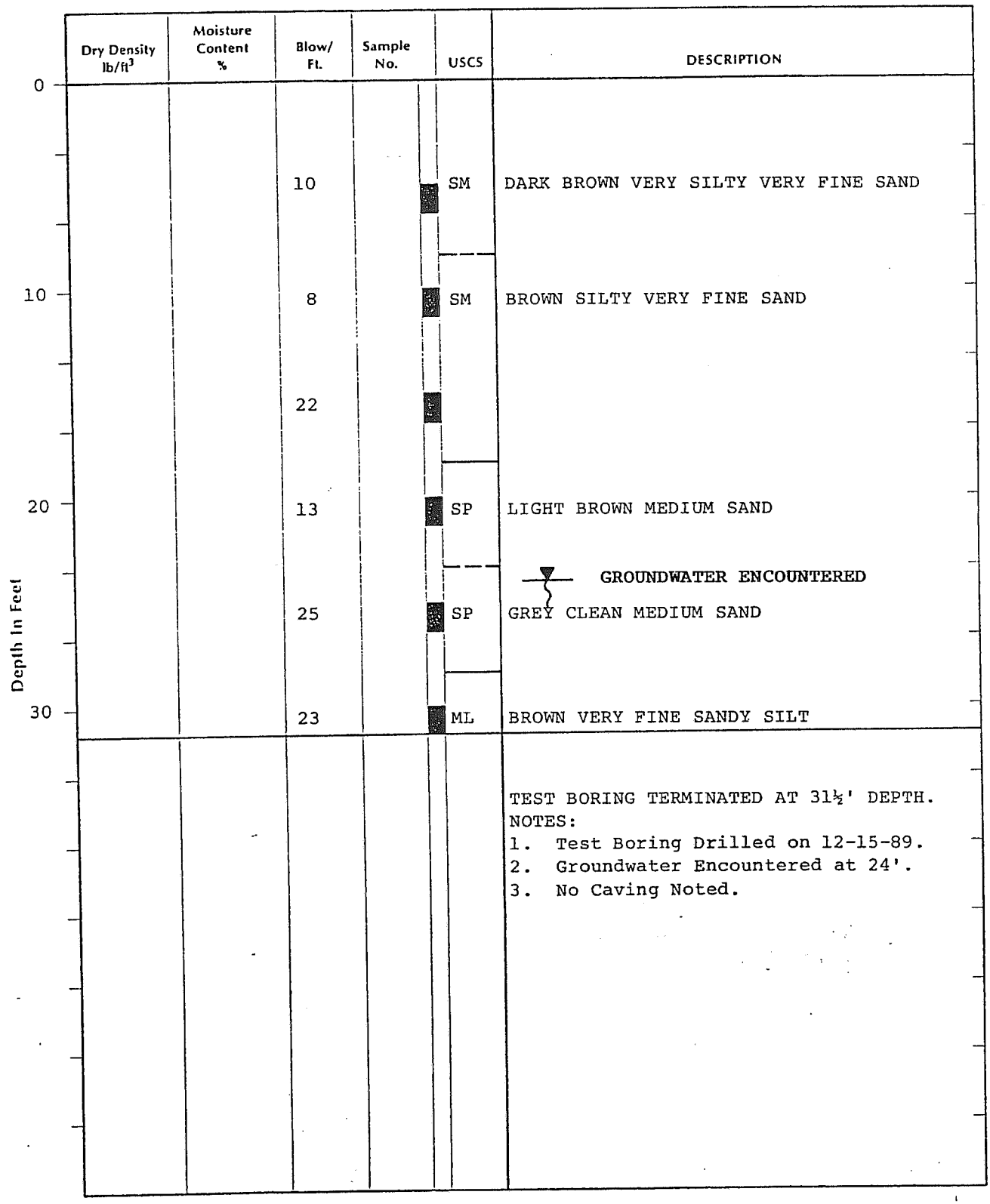
Depth In Feet	Dry Density lb/ft³	Moisture Content %	Blow/ Ft.	Sample No.	USCS	DESCRIPTION
0					SM	Brown Silty Fine Sand
4			12		ML	Sandy Silt
8					SM	Tan Silty Fine Coarse Sand with Gravel, Medium Dense
12	104	10	13		SM	Brown Silty Fine Sand, Medium Dense
16			21		ML	Grading Siltier
20	103	22	14		SW	▽ Groundwater Encountered Brown Saturated Fine Coarse Sand with Gravel, Medium Dense
24			40			
28					SW	Grades Tan Grey Medium Coarse Sand Saturated
32						
36						
40						BORING TERMINATED AT 40 FOOT DEPTH. NOTES: 1. Boring Drilled on 12-14-87. 2. Groundwater Encountered 21'. 3. No Caving Noted.

KLEINFELDER

PROJECT NO. 20-2631-04

LOG OF BORING NO. B-7 B-3

PLATE V

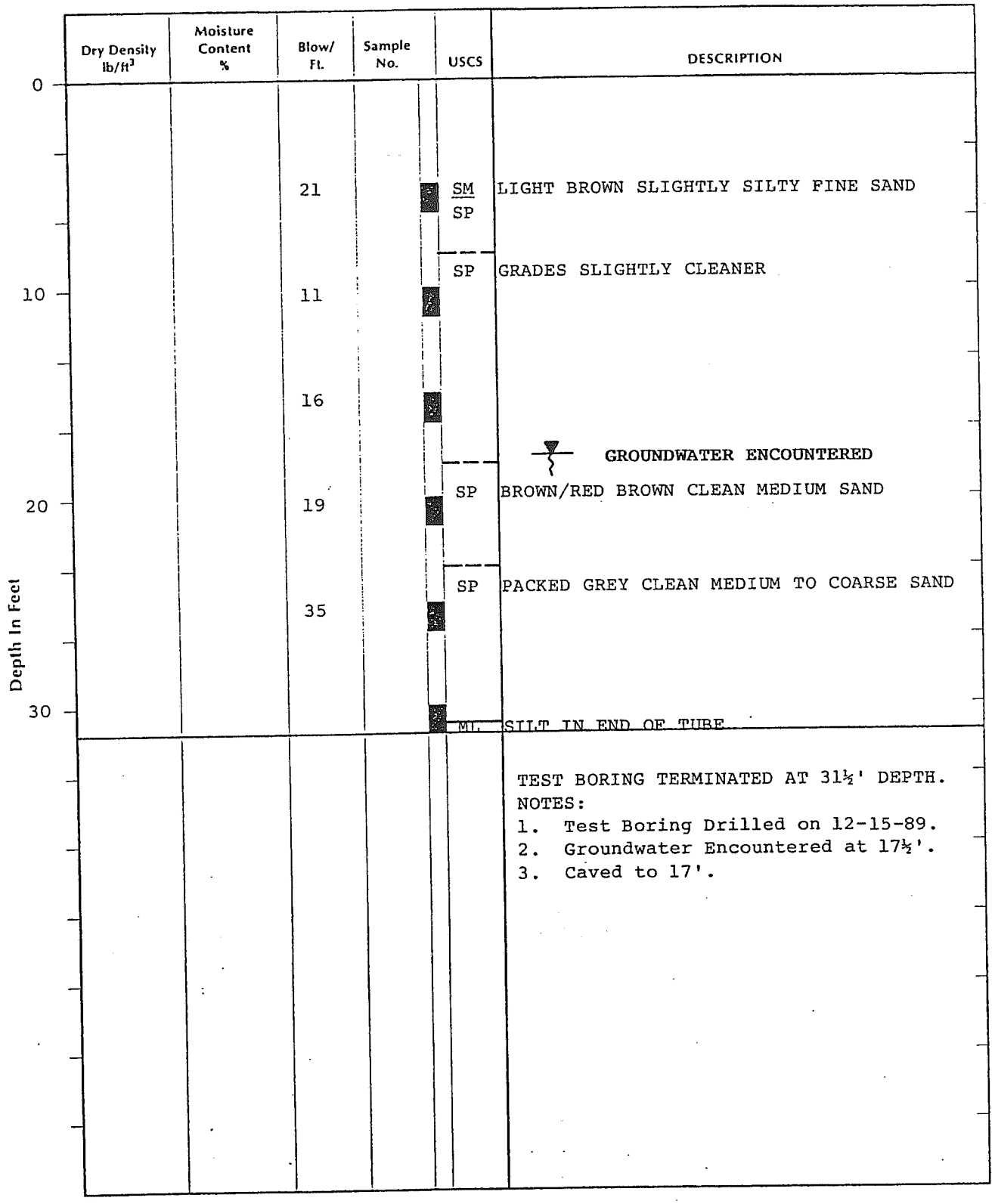


KLEINFELDER

PROJECT NO. 20-2598-02

LOG OF BORING NO. B-6

PLATE

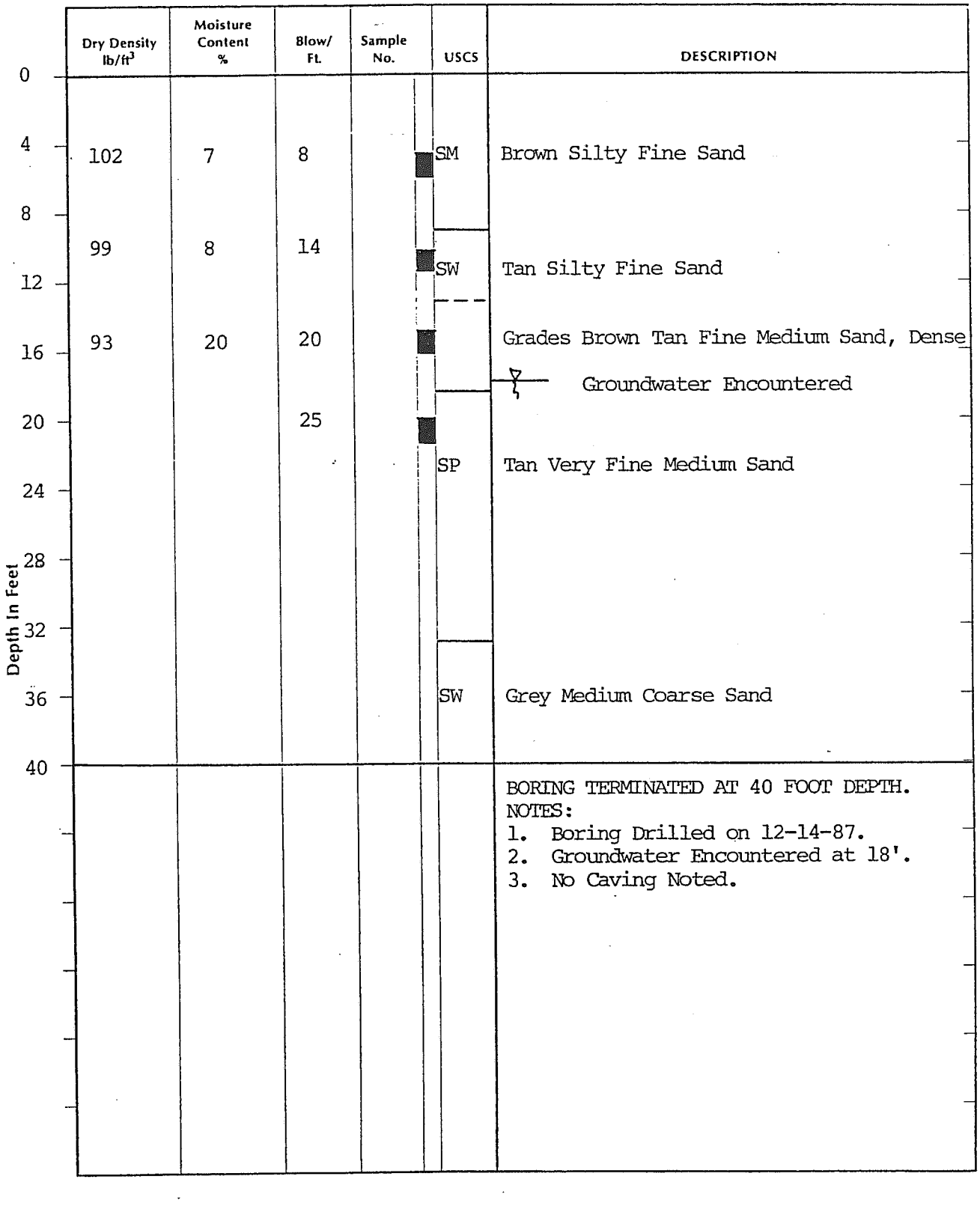


KLEINFELDER

PROJECT NO. 20-2598-02

LOG OF BORING NO. B-5

PLATE

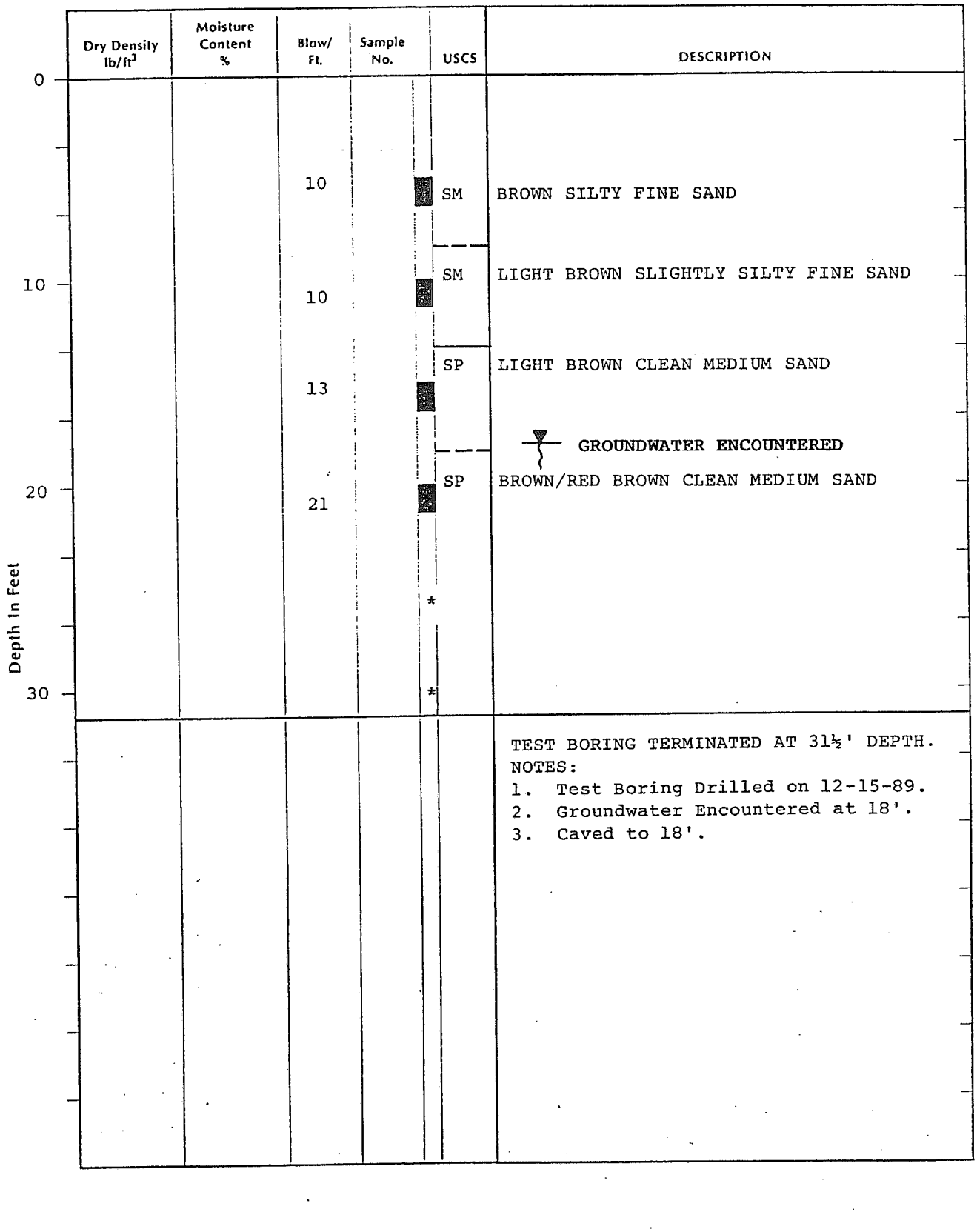


KLEINFELDER

PROJECT NO. 20-2631-04

LOG OF BORING NO. B-4 B-1

PLATE VI

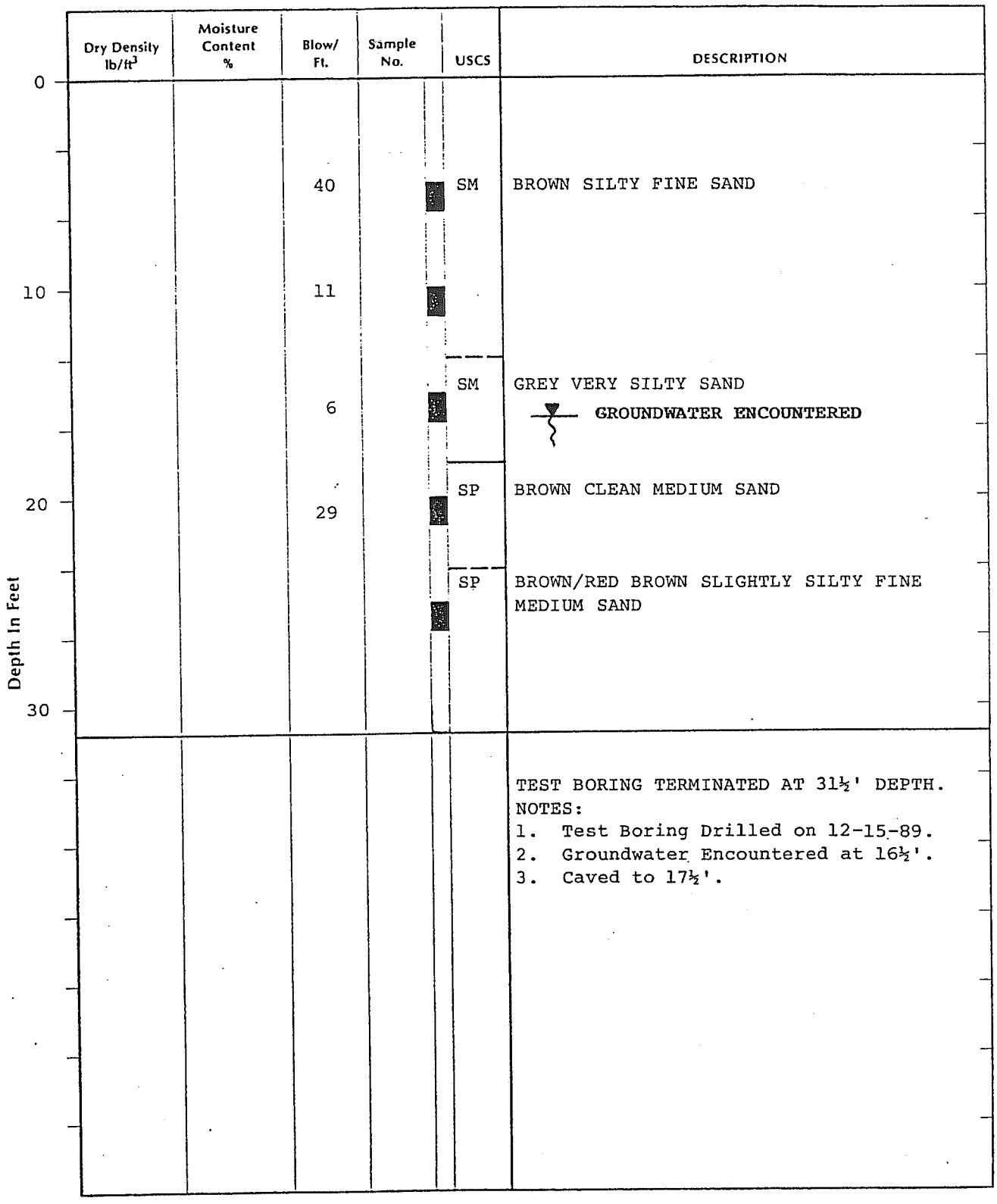


KLEINFELDER

PROJECT NO. 20-2598-02

LOG OF BORING NO. B-3

PLATE



KLEINFELDER

LOG OF BORING NO. B-2

PLATE

PROJECT NO. 20-2598-02

Depth In Feet	Dry Density lb/ft³	Moisture Content %	Blow/ Ft.	Sample No.	USCS	DESCRIPTION
0						
4	113	8	34		SM	Brown Silty Fine Sand, Dense
8					SM	Dark Brown Silty Fine Sand
	98	9	16			
12					ML	Grey Very Fine Sandy Silt, Stiff
						▽ Groundwater Encountered
	90	30	33		SM	Brown Saturated Clayey Silty Fine Sand
16					CL	Brown Silty Clay, Very Stiff
					ML /SM	Very Saturated Brown Clayey Silty Fine Sand
20						
24						
28					SP /SW	Brown Silty Fine to MEdium Sand
32						
36					SW	Tan MEdium Coarse Sand
40						BORING TERMINATED AT 40 FOOT DEPTH.

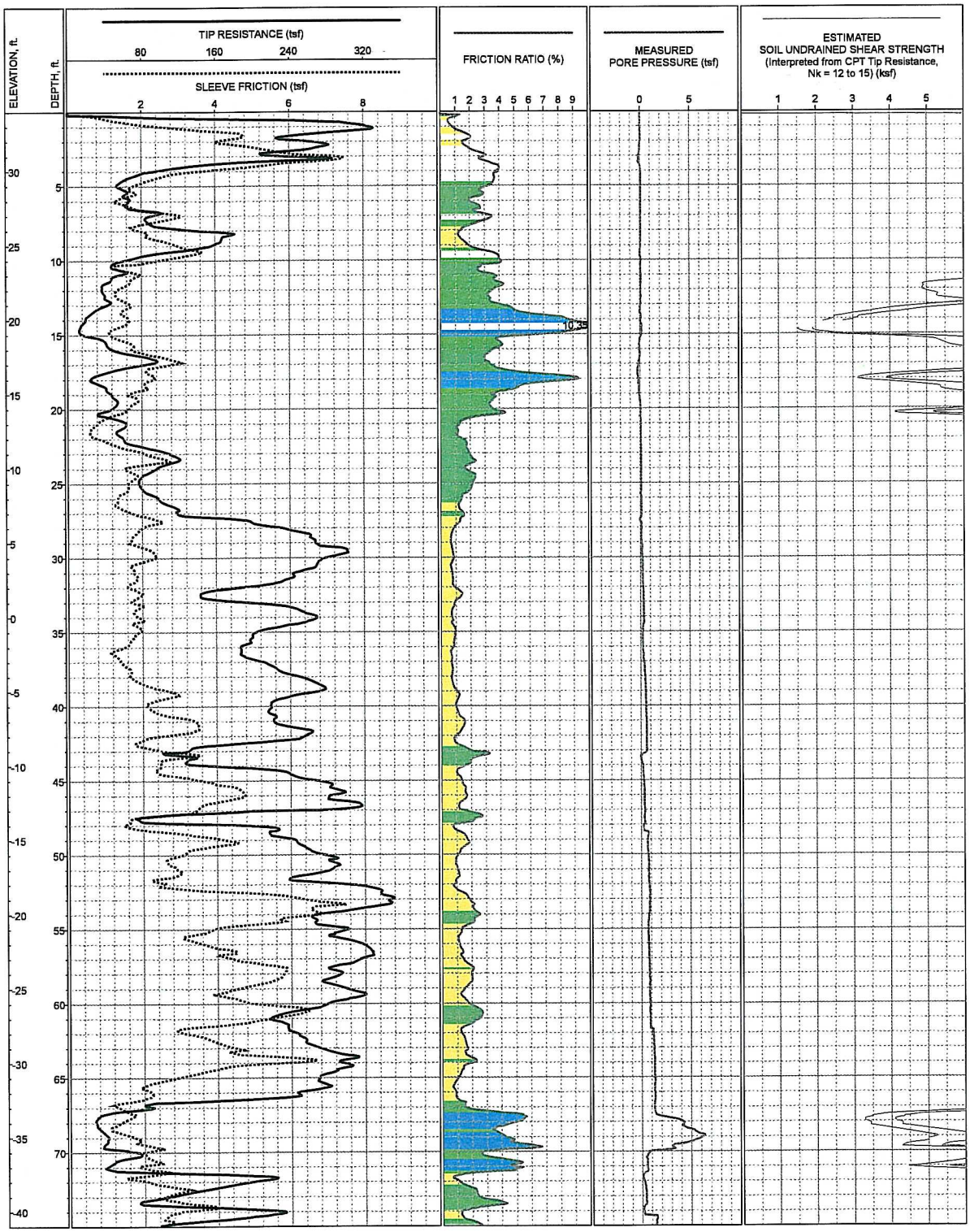
NOTES:
1. Boring Drilled on 12-14-87.
2. Groundwater Encountered at 13'.
3. No Caving Noted.

KLEINFELDER

LOG OF BORING NO. B-1
B-1

PLATE VII

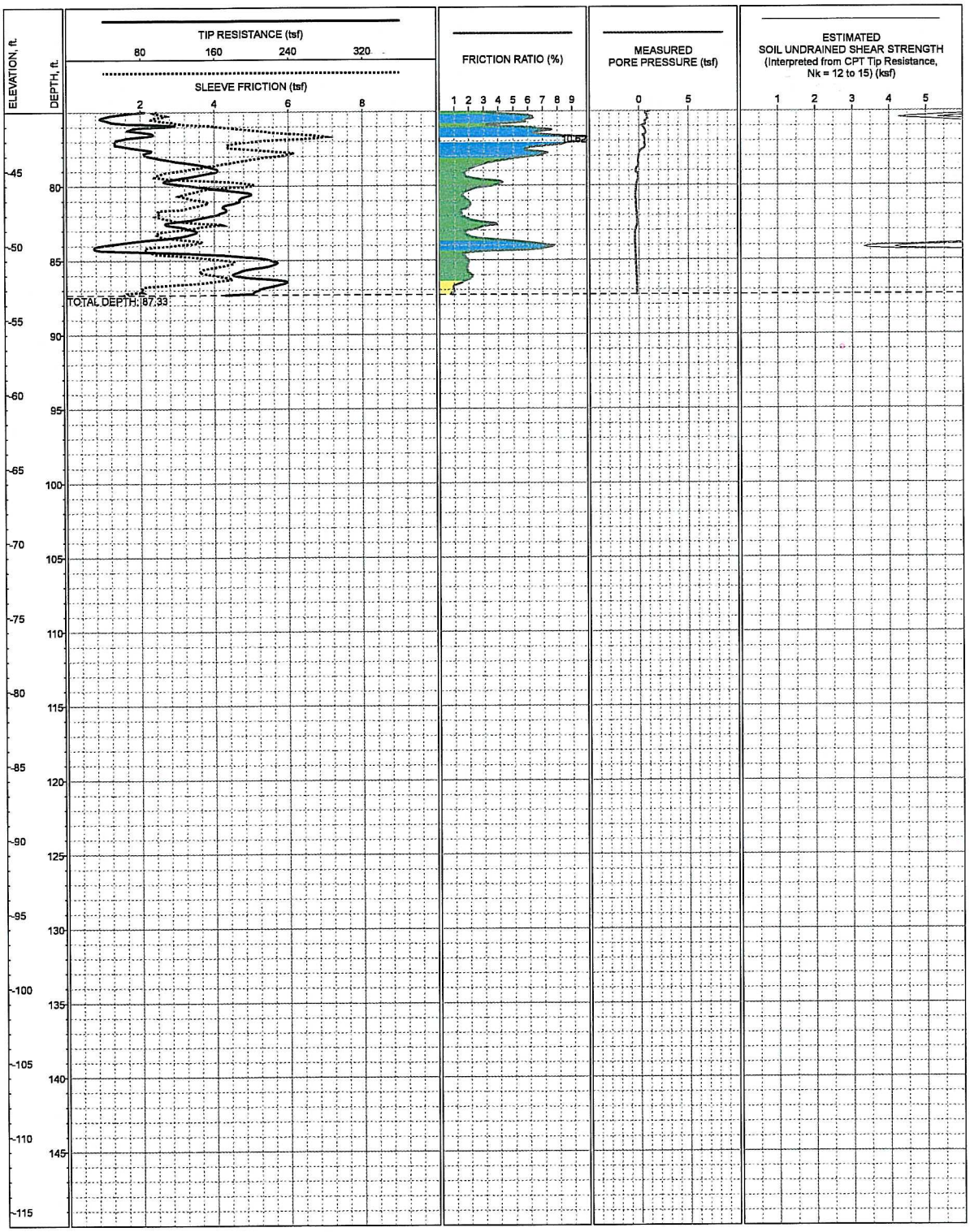
PROJECT NO. 20-2631-04



LOCATION: E6333718 N2104540 (CA State Plane Zone III, NAD 83, Feet)
SURFACE EL: 34ft (NAVD88)
COMPLETION DEPTH: 87.33ft
TEST DATE: 2/1/2007

CONE: F7.5CKEW1300
PERFORMED BY: Fugro Geosciences, Inc.
OPERATOR: R. Norris & R. Soto
REVIEWED BY: Leonard Sansone

LOG OF WR0017_105C
Reclamation District 17
San Joaquin County, California



LOCATION: E6333718 N2104540 (CA State Plane Zone III, NAD 83, Feet)
SURFACE EL: 34ft (NAVD88)
COMPLETION DEPTH: 87.33ft
TEST DATE: 2/1/2007

CONE: F7.5CKEW1300
PERFORMED BY: Fugro Geosciences, Inc.
OPERATOR: R. Norris & R. Soto
REVIEWED BY: Leonard Sansone

LOG OF WR0017_105C
Reclamation District 17
San Joaquin County, California

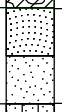
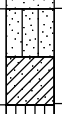
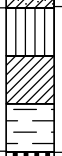
APPENDIX B

Exploration Logs (ENGEO)

APPENDIX B



KEY TO BORING LOGS

	MAJOR TYPES			DESCRIPTION
COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES		GW - Well graded gravels or gravel-sand mixtures GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES		GM - Silty gravels, gravel-sand and silt mixtures GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES		SW - Well graded sands, or gravelly sand mixtures SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES		SM - Silty sand, sand-silt mixtures SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS			ML - Inorganic silt with low to medium plasticity CL - Inorganic clay with low to medium plasticity OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 %			MH - Inorganic silt with high plasticity CH - Inorganic clay with high plasticity OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS			PT - Peat and other highly organic soils

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE				CLEAR SQUARE SIEVE OPENINGS				
200	40	10	4	3/4 "	3"	12"		
SILTS AND CLAYS	SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE			

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT (S.P.T.)
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH*	BLOWS/FOOT (S.P.T.)
VERY SOFT	0-1/4	0-2
SOFT	1/4-1/2	2-4
MEDIUM STIFF	1/2-1	4-8
STIFF	1-2	8-15
VERY STIFF	2-4	15-30
HARD	OVER 4	OVER 30

MOISTURE CONDITION

DRY	Absence of moisture, dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible freewater
SATURATED	Below the water table

SAMPLER SYMBOLS

- Modified California (3" O.D.) sampler
- California (2.5" O.D.) sampler
- S.P.T. - Split spoon sampler
- Shelby Tube
- Continuous Core
- Bag Samples
- Grab Samples
- NR No Recovery

MINOR CONSTITUENT QUANTITIES (BY WEIGHT)

TRACE	Particles are present, but estimated to the less than 5%
SOME	5 to 15%
WITH	15 to 30%
.....Y	30 to 50%

LINE TYPES

- ———— Solid - Layer Break
- – – – – – Dashed - Gradational or approximate layer break

GROUND-WATER SYMBOLS

- ▽ Groundwater level during drilling
- ▼ Stabilized groundwater level

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer

LOG OF BORING 3-B103

Expect Excellence

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/23/2008
HOLE DEPTH: Approx. 139½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SANDY SILT (ML), pale olive, loose, moist, fine- to medium-grained sand, some clay, (FILL)										
5	1		Pocket Torvane = 0.25 tsf			12							2.5*
	2					7				59	9.6		
10	3		Grades medium dense. Pocket Torvane = 0.45 tsf			15							3.5*
	4												
15	5		CLAYEY SILT (ML), dark brown, very stiff, moist, some fine-grained sand, (NATIVE MATERIAL)			18					19.1	102.6	3.0*
20	6					21	35	25	10	93	27.4	87.9	> 4.5*
	7												
25	8		SAND (SP), light brown, medium dense, saturated, fine-grained sand, trace silt, and clay		▽	23							
			SAND (SP), gray, dense, saturated, fine- to coarse-grained sand, trace silt, and clay										
30	9					36				6	17.8		

LOG - GEOTECHNICAL 8188001000_BORE LOGS_MUDROT.GPJ ENGEO INC.GDT 9/8/08

LOG OF BORING 3-B103

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/23/2008
HOLE DEPTH: Approx. 139½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
35	10					35							
	11										25.1		
40	12					37							
	13					43							
45	14												
50	15					37					18		
	16												
55	17												
	18		Grades very dense.			51							
60													

LOG OF BORING 3-B103

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/23/2008
HOLE DEPTH: Approx. 139½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
65	19												
	20												
	21					64				6	20.1		
70	22												
75	23												
	24					50							
80	25												
85	26												
	27		Grades dense.			48					24.2		
90													

LOG OF BORING 3-B103

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/23/2008
HOLE DEPTH: Approx. 139½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
95	29												
	30		Grades very dense.			49							
100	31												
105	32												
	33		SILT (ML), dark gray, hard, saturated, some fine-grained sand, some clay Pocket Torvane = 1.0 tsf			50					24.3	91.4	> 4.5*
110	34												
115	35												
	36					65					18.7	111.6	
120			CLAYEY SAND (SC), dark gray, very dense, saturated, fine-grained sand, with silt										

LOG OF BORING 3-B103

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/23/2008
HOLE DEPTH: Approx. 139½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	37		SAND (SP), gray, very dense, saturated, fine- to medium-grained sand, trace silt, trace clay										
125	38												
	39					74							
130	40												
	41												
135			SILTY CLAY (CL), pale olive, hard, saturated, trace fine-grained sand										
	42		Pocket Torvane = 1.25 tsf			55					28.2	94.9	3.75*
			Bottom of boring at approximately 139 1/2 feet. Groundwater encountered durig drilling at approximately 25 feet.										

LOG OF BORING 3-B104

Expect Excellence

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/24/2008
HOLE DEPTH: Approx. 121½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: Z. Crawford / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SAND (SP), dark brown, medium dense, moist, fine-grained sand, some silt, trace clay, (FILL)										
	1					24							
5													
	2		SAND (SP), very dark brown, loose, moist, fine-grained sand, some silt, trace clay			7							
10	3												
			SAND (SP), dark brown, loose, moist, fine-grained sand, some silt, trace clay			7					8.3		
	4					11							
15													
	5		SAND (SP), light brown, medium dense, moist to saturated, medium- to coarse-grained sand, trace silt			15							
20	6				▽								
			Saturated.										
	7					13				2			
25													
	8												
			SILT (ML), olive gray, very stiff to hard, saturated, some clay, trace fine-grained sand, mottled with reddish brown iron oxide. (NATIVE MATERIAL)			42	28	26	2	98	28.8	49.6	> 4.5*
30	9												

LOG - GEOTECHNICAL 8188001000_BORE LOGS_MUDROT.GPJ ENGEO INC.GDT 9/8/08

LOG OF BORING 3-B104

Expect Excellence

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/24/2008
HOLE DEPTH: Approx. 121½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: Z. Crawford / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			Pocket Torvane = 0.75 tsf			15							
35	10		SILTY SAND (SM), olive brown, dense, saturated, fine- to medium-grained sand, trace clay			40				41	25.6		
	11												
	12												
40			SAND (SP), grayish brown, dense, saturated, fine-grained sand, trace silt			36				6	21.7		
	13												
			Grades gray.										
45	14					35							
	15		Grades to trace coarse-grained sand.										
50			Thin lense of fine-grained sand.			40							
	16												
55	17		Grades to fine- to coarse-grained sand.										
	18		Grades to less (trace) fine-grained sand.										
60													

LOG - GEOTECHNICAL 8188001000_BORE LOGS_MUDROT.GPJ ENGEO INC.GDT 9/8/08

LOG OF BORING 3-B104

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/24/2008
HOLE DEPTH: Approx. 121½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: Z. Crawford / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
						49				5	17.9		
65	19												
	20												
	21												
70						43							
	22												
75	23		Grades to olive gray, very dense.										
	24												
80						65							
	25												
85	26												
	27												
90													

LOG OF BORING 3-B104

Expect Excellence

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/24/2008
HOLE DEPTH: Approx. 121½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: Z. Crawford / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	28		SILTY CLAY (CL), olive gray, hard, saturated, trace fine-grained sand			58							
			SANDY SILT (ML), olive gray, hard, saturated, fine-grained sand, trace clay										
95	29		SILTY CLAY (CL), olive gray, hard, saturated, trace fine-grained sand Pocket Torvane = 2.13 tsf			50/6"							> 4.5*
			SAND (SP), grayish brown, dense to very dense, saturated, fine- to coarse-grained sand, trace silt, trace clay										
	30												
100	31												
105	32		SILTY CLAY (CL), olive gray, hard, saturated, trace fine-grained sand Pocket Torvane = 1.0 tsf			50/5"							3.0*
			SAND (SM), olive, very dense, saturated, fine-grained sand, with silt, trace clay										
	33												
110			Grades to some clay.										
	34		Mottled with carbonate.			80/11"				33			
115	35												
	36		SILTY CLAY (CL), grayish olive, hard, saturated, some fine-grained sand, mottled with iron oxide										
120													

LOG - GEOTECHNICAL 8188001000_BORE LOGS_MUDROT.GPJ ENGEO INC.GDT 9/8/08

LOG OF BORING 3-B104

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/24/2008
HOLE DEPTH: Approx. 121½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: Z. Crawford / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	37		Bottom of boring at approximately 121 1/2 feet. Groundwater encountered durig drilling at approximately 21 feet.			43							3.5*

LOG OF BORING 3-B105

Expect Excellence

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/25/2008
HOLE DEPTH: Approx. 89½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SILTY SAND (SM), very dark brown, medium dense, moist, fine-grained sand, trace clay, (FILL)			12							
5	1												
						22	16	18	NP	28	7.9		
10	2												
	3		SILTY CLAY (CL), pale olive brown, hard, moist, trace fine-grained sand, (NATIVE MATERIAL)			50/6"	33	32	1		32.5	67.9	3.5*
			CLAYEY SILT (ML), brown, hard, moist, trace fine-grained sand Pocket Torvane = 0.5 tsf			50/3"							
	4		SAND (SM), brown, medium dense, moist, fine-grained sand, some silt										
15					▽								
	5		SANDY ELASTIC SILT (SM), brown, medium dense, saturated, fine-grained sand, some silt			22					26.6	91.4	
20	6												
			SAND (SP), brown, dense, saturated, fine- to coarse-grained sand, some subangular fine gravel, trace silt			42							
	7					56				6	15.1		
25													
	8		SILT (ML), brown, hard, saturated, with clay, some fine-grained sand										
						51	25	22	3	88	24	93.2	> 4.5*
	9		Pocket Torvane = 1.25 tsf										
30													

LOG - GEOTECHNICAL 8188001000_BORE LOGS_MUDROT.GPJ ENGEO INC.GDT 9/8/08

LOG OF BORING 3-B105

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/25/2008
HOLE DEPTH: Approx. 89½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
35	10		Pocket Torvane = 0.95 tsf			39							
	11		Grades olive brown, some fine-grained-sand.			84							
40	12												
	13		Pocket Torvane = 1.03 tsf			29							3.0*
45	14					21							
	15		SAND (SM), dark brown, medium dense, saturated, fine-grained sand, with silt, trace clay			24				24	29.6		
50	16												
55	17												
	18		SILT (ML), dark brown, hard, saturated, with clay, some fine-grained sand Pocket Torvane = 0.8 tsf			43				93	31.7	83.2	4.5*
60													

LOG - GEOTECHNICAL 8188001000_BORE LOGS_MUDROT.GPJ ENGEO INC.GDT 9/8/08

LOG OF BORING 3-B105

Expect Excellence

Geotechnical Exploration
The Trails of Manteca
Manteca, CA
8188.001.000

DATE DRILLED: 7/25/2008
HOLE DEPTH: Approx. 89½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 32 ft.

LOGGED / REVIEWED BY: M. Swanson / JJT
DRILLING CONTRACTOR: V&W Drilling
DRILLING METHOD: Mud Rotary
HAMMER TYPE: 140 lb. Auto Trip

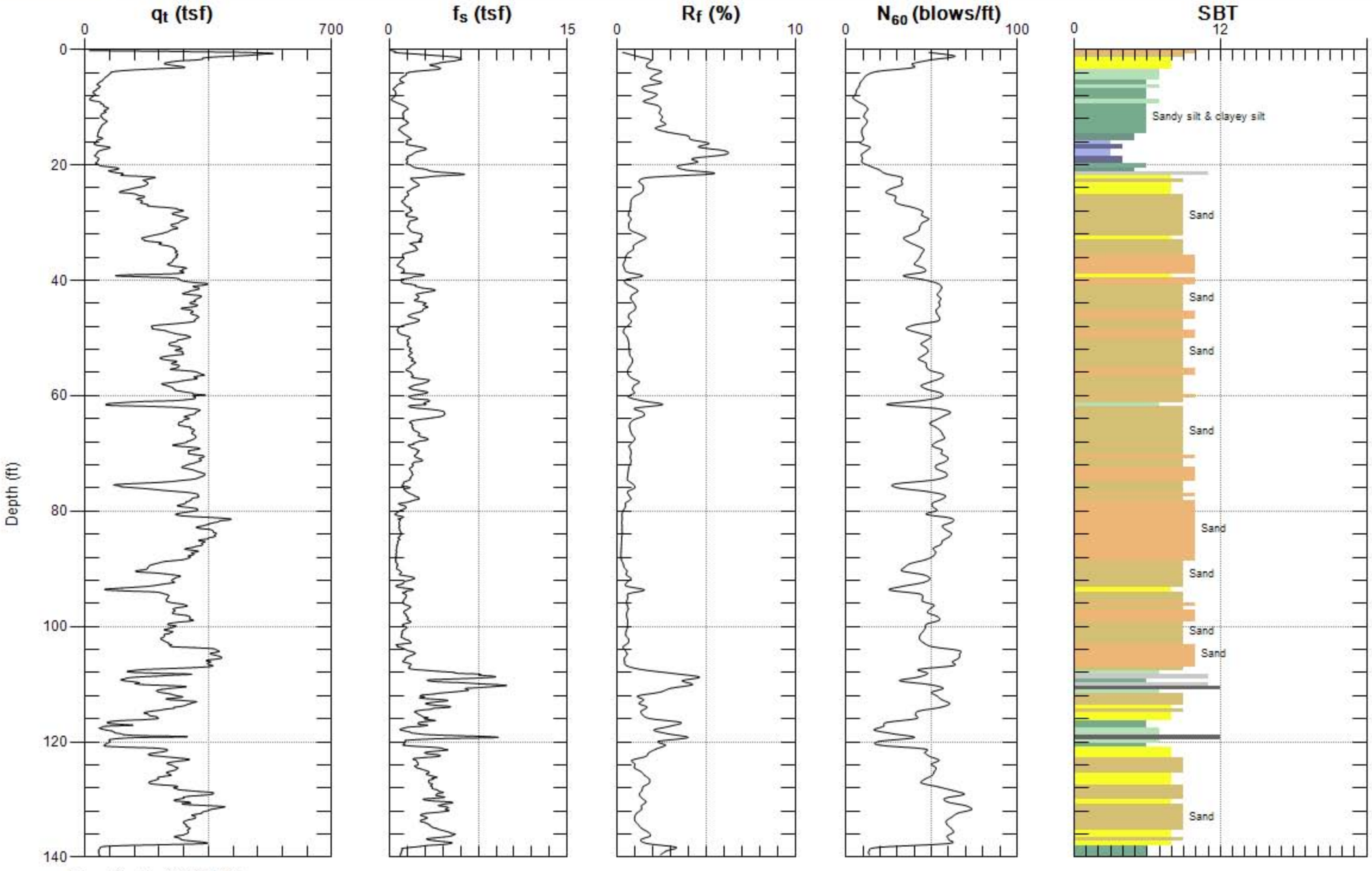
Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	19												
65	20												
			SAND (SM), dark gray, dense, saturated, fine- to medium-grained sand, some silt, trace clay										
	21					24				15	33.6		
70	22												
75	23												
	24		SILTY CLAY (CL), brown, hard, saturated, with fine-grained sand Pocket Torvane = 0.5 tsf			85					19.1	112	> 4.5*
80			12 inch sand lense at 81 feet.										
	25												
85	26		SAND (SP), grayish brown, very dense, saturated, fine- to coarse-grained sand, trace silt, trace clay										
	27					75/11"					20.5		
			Bottom of boring at approximately 89 1/2 feet. Groundwater encountered durig drilling at approximately 15 1/2 feet.										

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT106

Engineer: Z.CRAWFORD
Date: 7/14/2008 08:04



Max. Depth: 140.256 (ft)
Avg. Interval: 0.656 (ft)

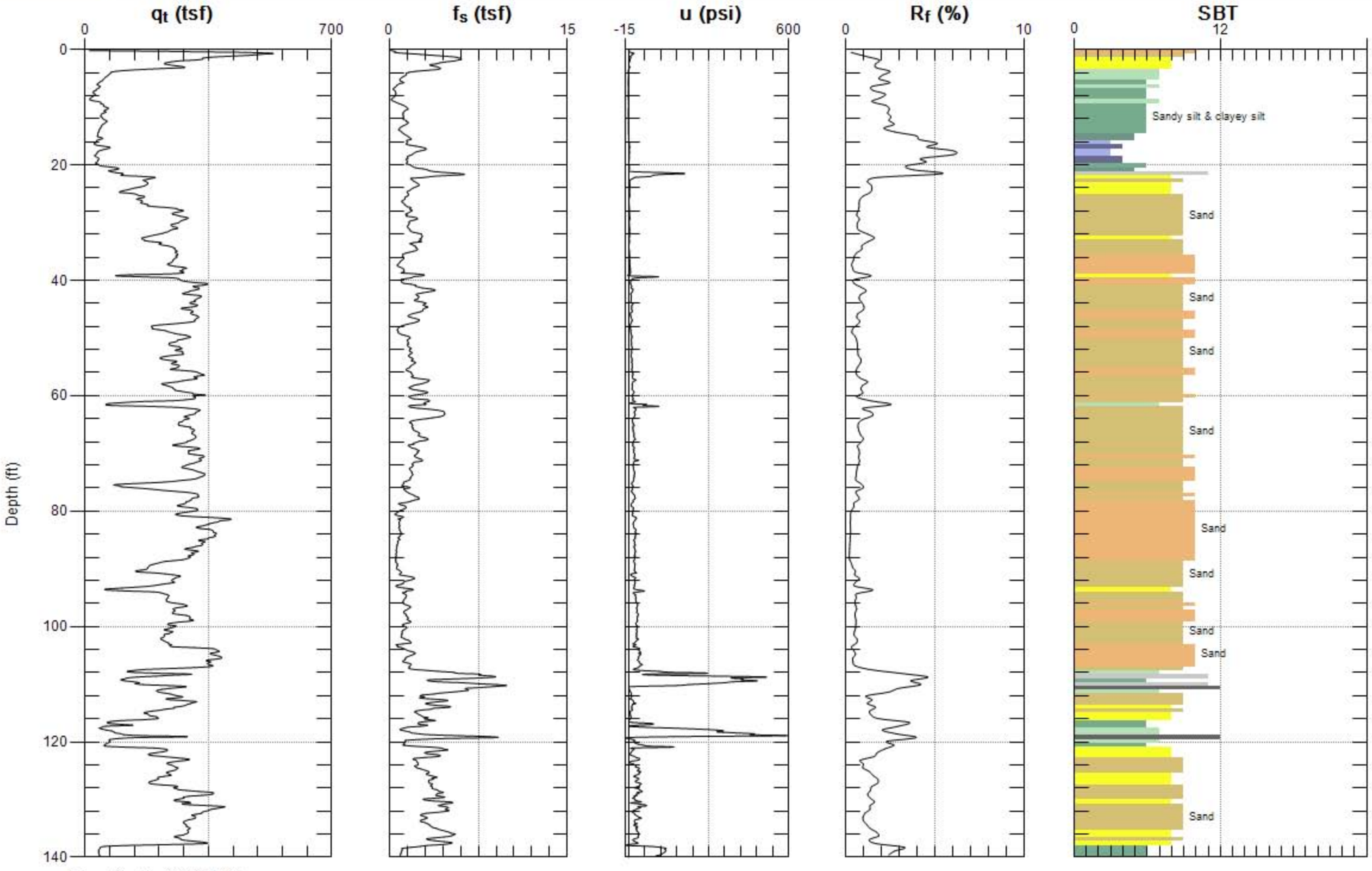
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT106

Engineer: Z.CRAWFORD
Date: 7/14/2008 08:04



Max. Depth: 140.256 (ft)
Avg. Interval: 0.656 (ft)

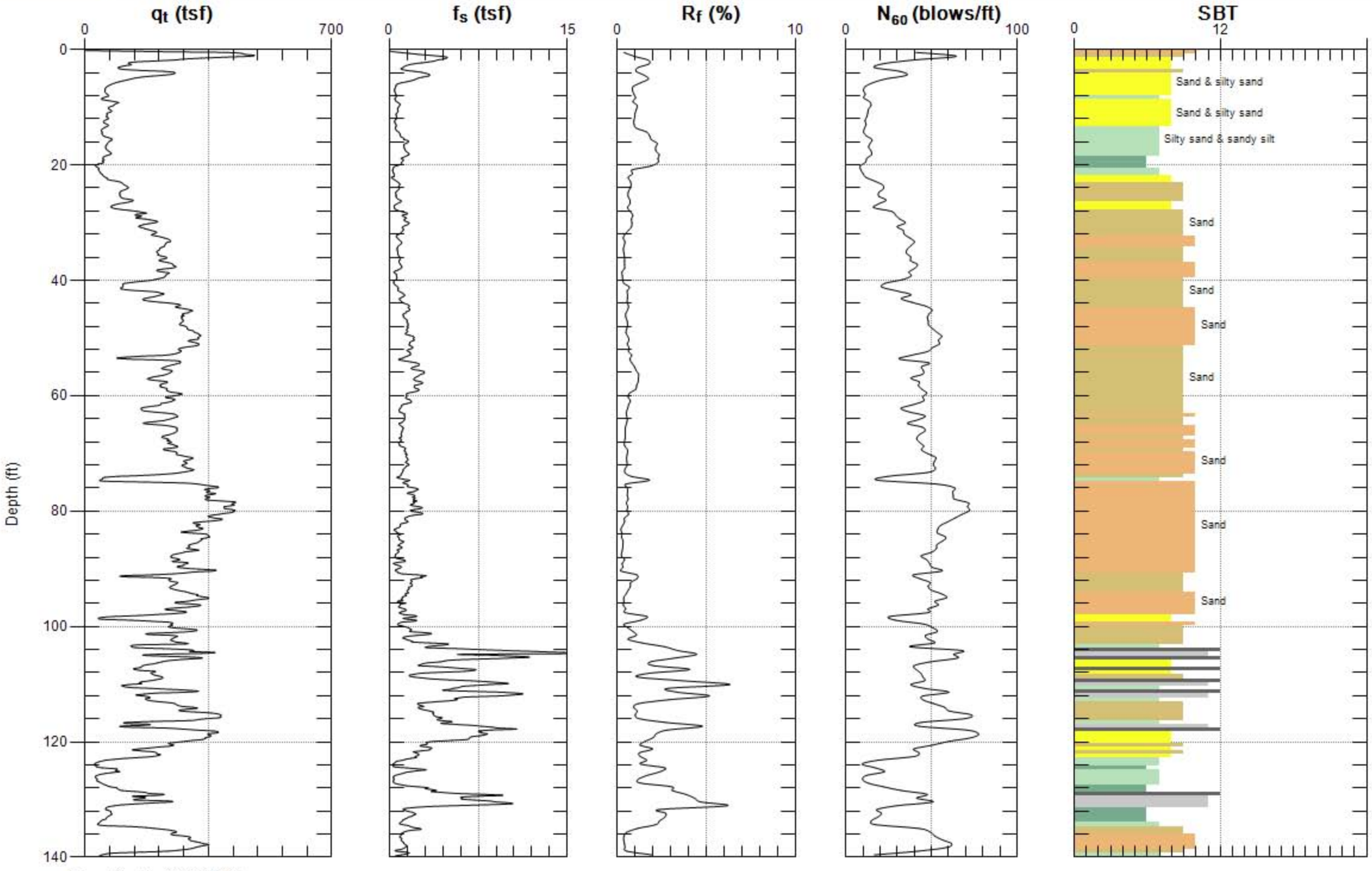
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT107

Engineer: Z.CRAWFORD
Date: 7/14/2008 10:19



Max. Depth: 140.092 (ft)
Avg. Interval: 0.656 (ft)

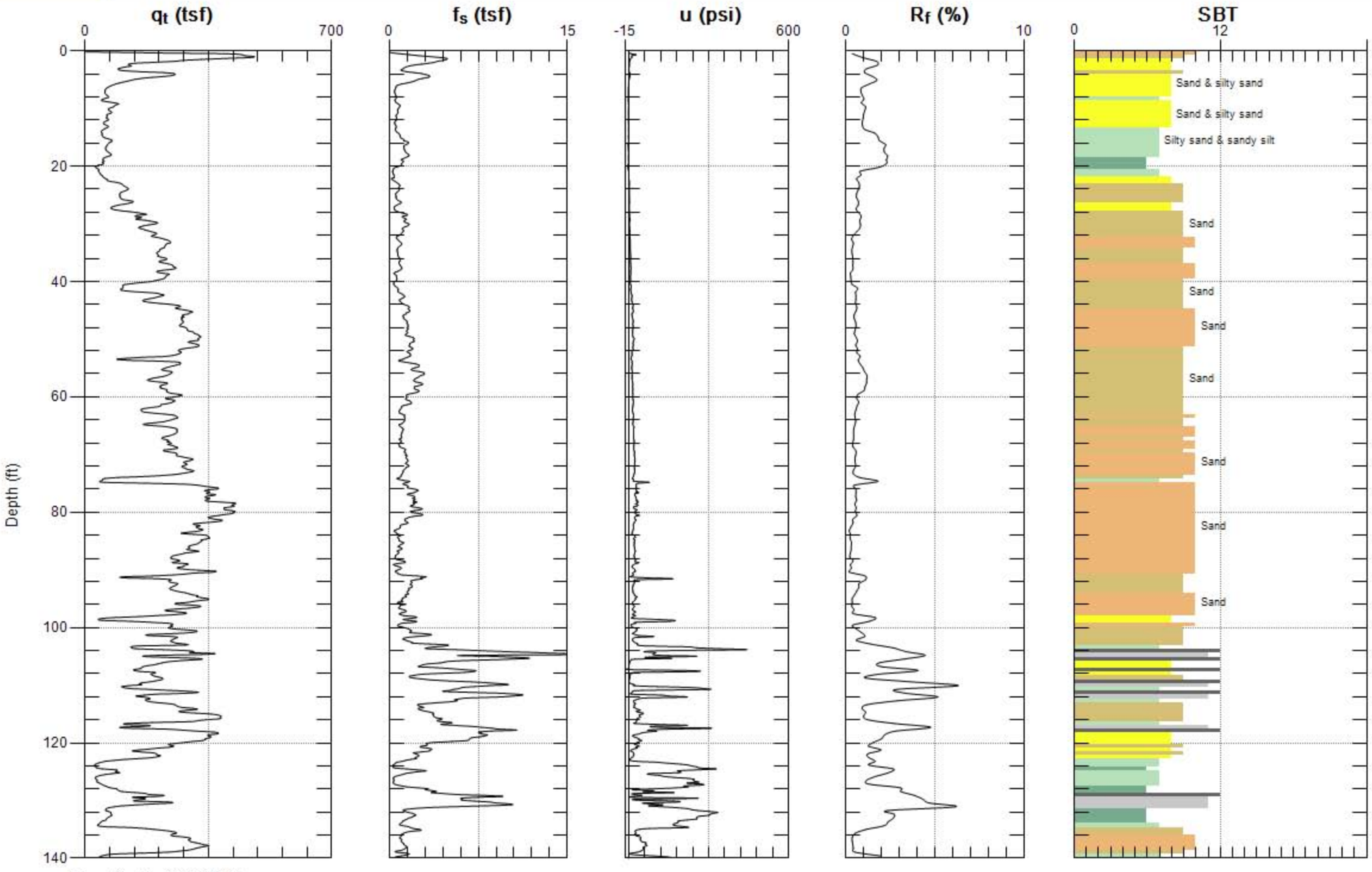
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT107

Engineer: Z.CRAWFORD
Date: 7/14/2008 10:19



Max. Depth: 140.092 (ft)
Avg. Interval: 0.656 (ft)

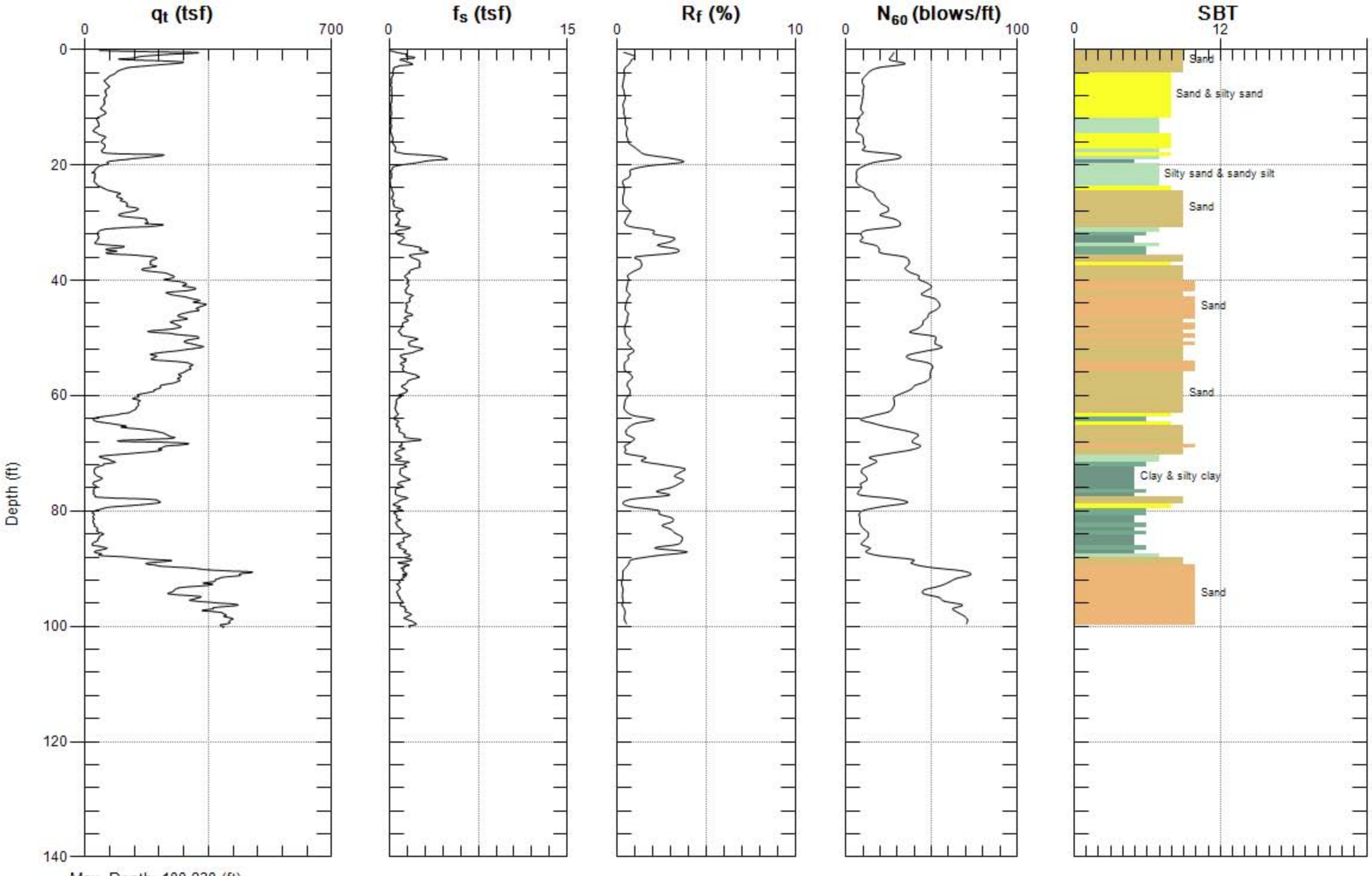
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT108

Engineer: Z.CRAWFORD
Date: 7/14/2008 01:14



Max. Depth: 100.230 (ft)
Avg. Interval: 0.656 (ft)

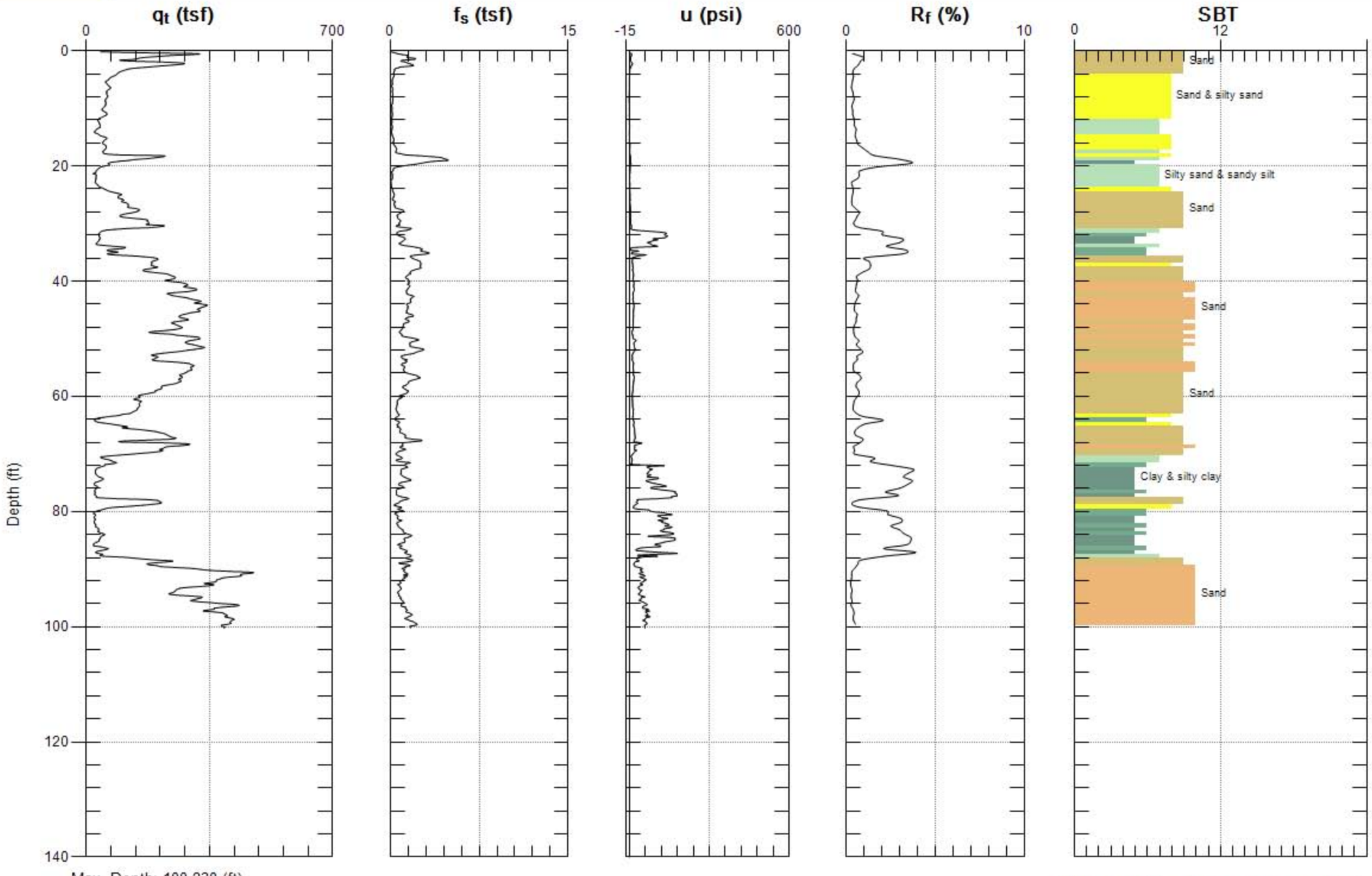
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT108

Engineer: Z.CRAWFORD
Date: 7/14/2008 01:14



Max. Depth: 100.230 (ft)
Avg. Interval: 0.656 (ft)

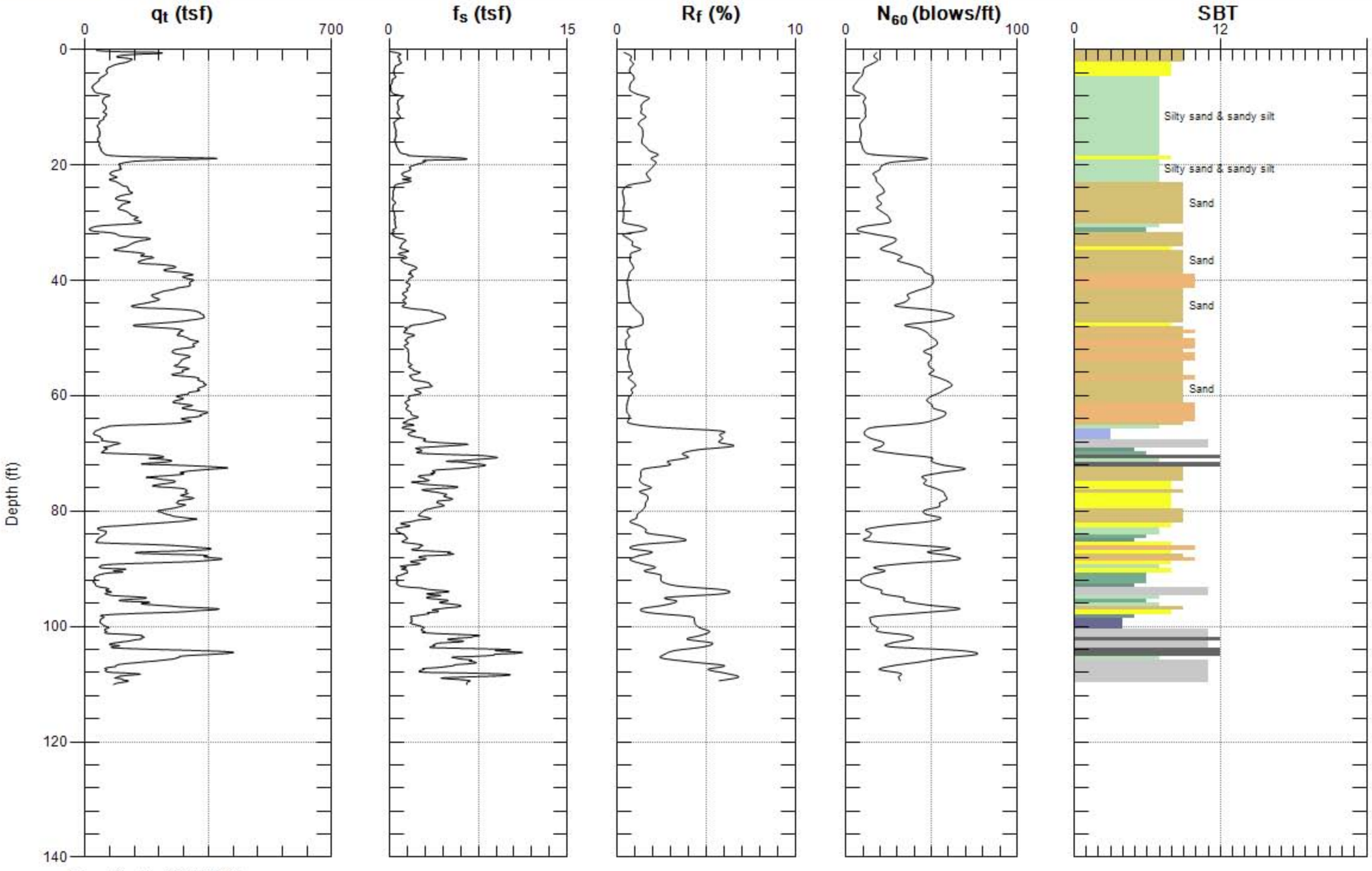
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT109

Engineer: Z.CRAWFORD
Date: 7/15/2008 07:17



Max. Depth: 110.072 (ft)
Avg. Interval: 0.656 (ft)

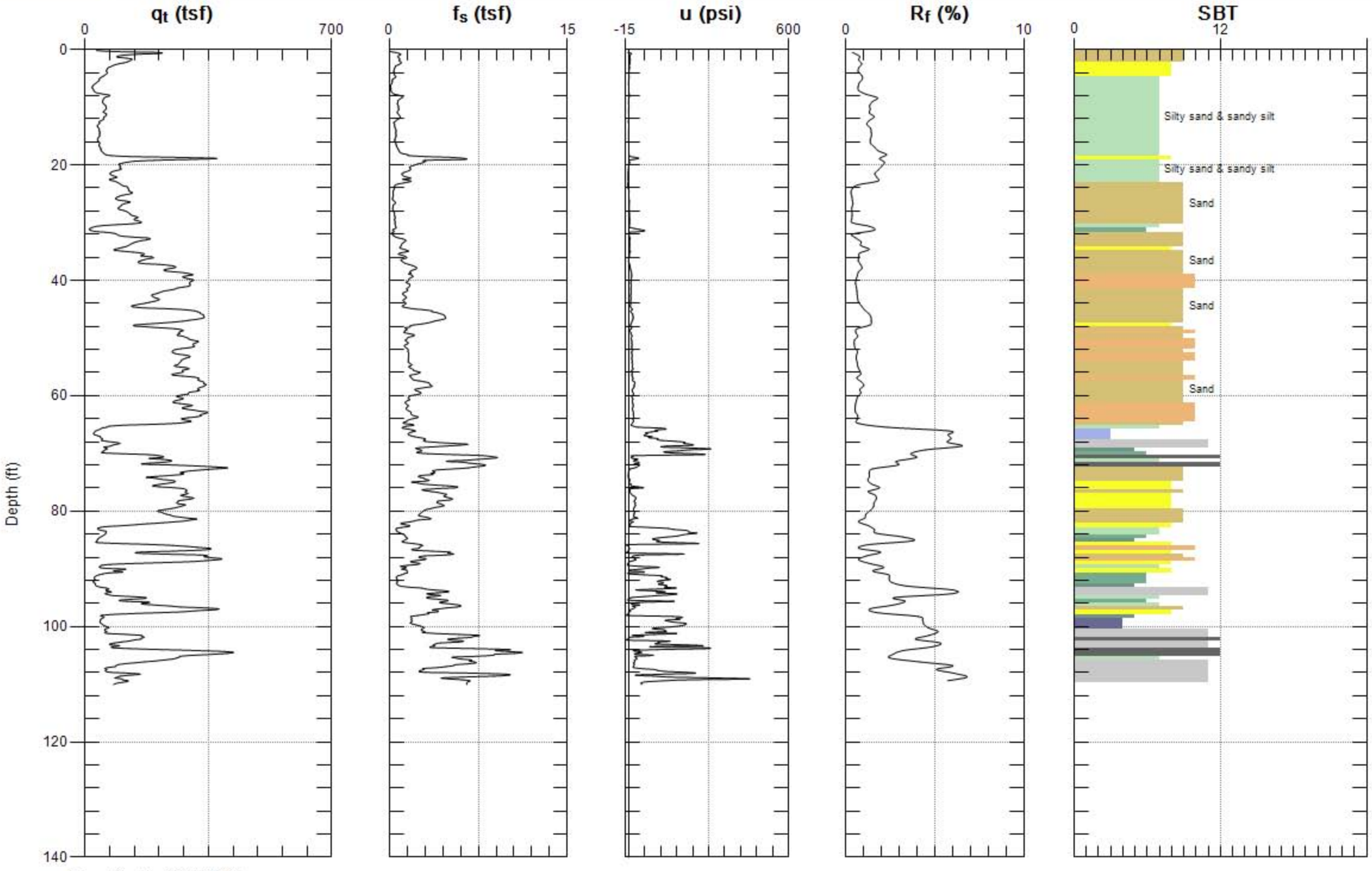
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT109

Engineer: Z.CRAWFORD
Date: 7/15/2008 07:17



Max. Depth: 110.072 (ft)
Avg. Interval: 0.656 (ft)

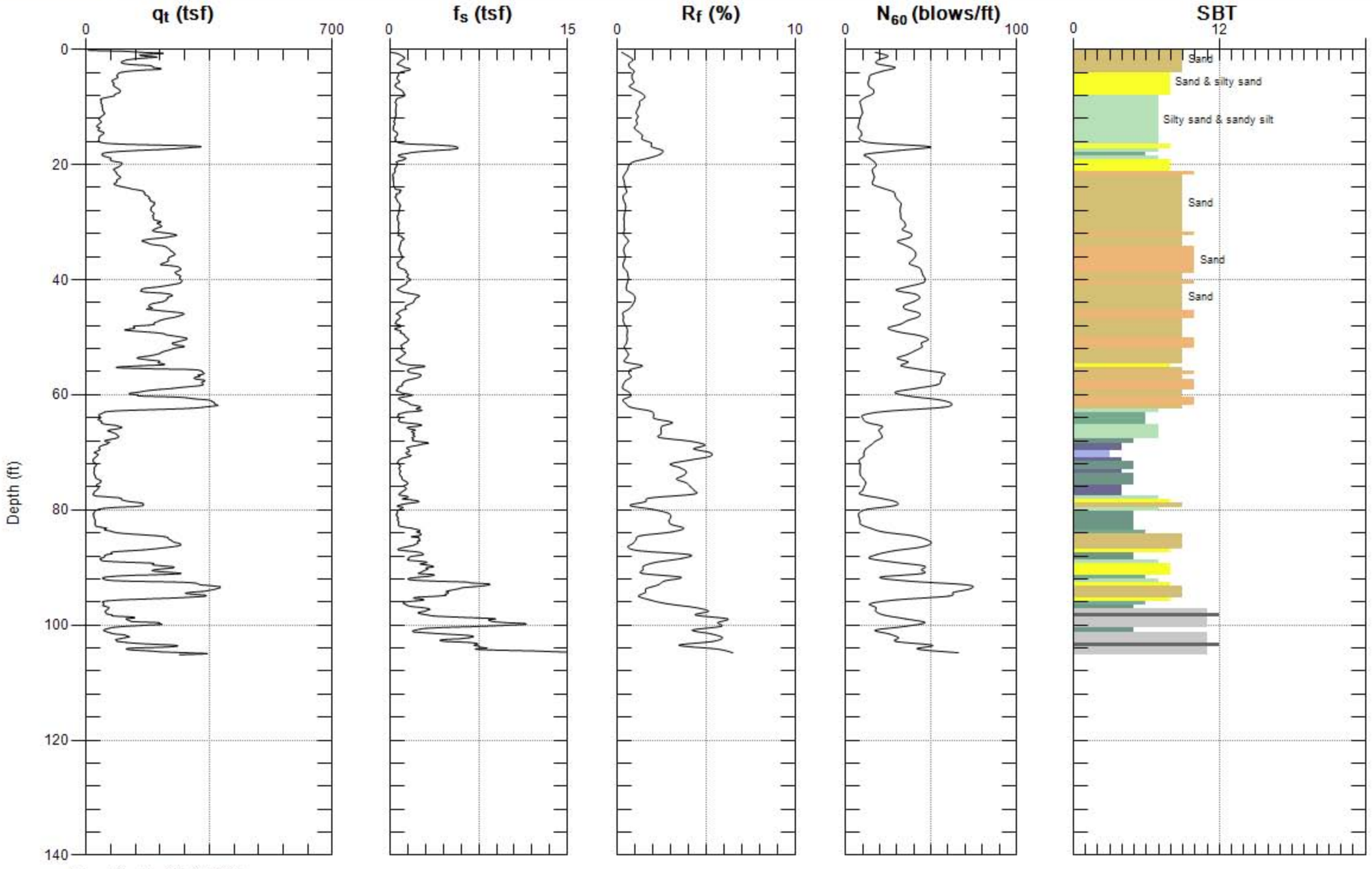
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT110

Engineer: Z.CRAWFORD
Date: 7/15/2008 08:54



Max. Depth: 105.151 (ft)
Avg. Interval: 0.656 (ft)

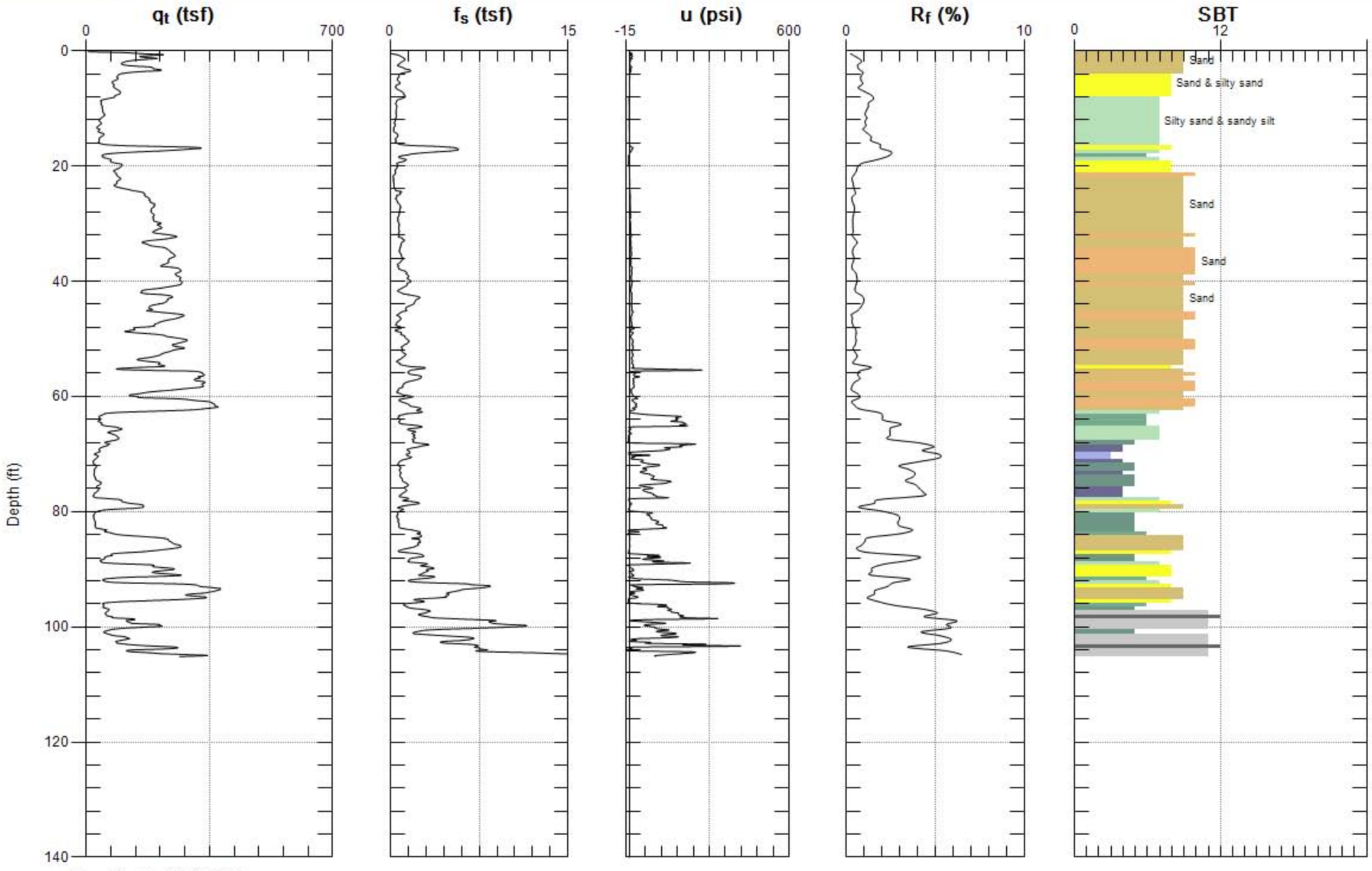
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT110

Engineer: Z.CRAWFORD
Date: 7/15/2008 08:54



Max. Depth: 105.151 (ft)
Avg. Interval: 0.656 (ft)

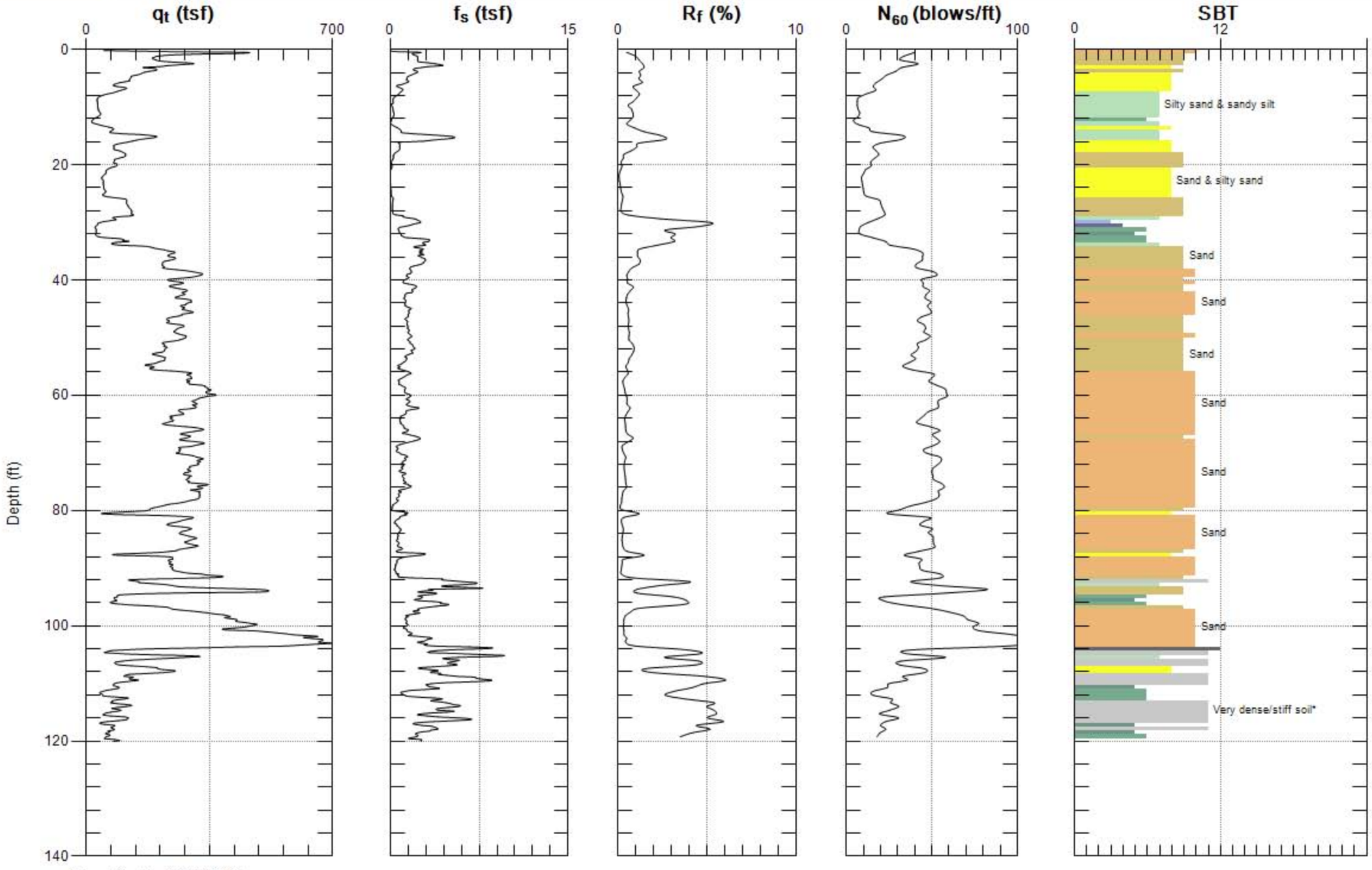
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT111

Engineer: Z.CRAWFORD
Date: 7/15/2008 11:24



Max. Depth: 120.079 (ft)
Avg. Interval: 0.656 (ft)

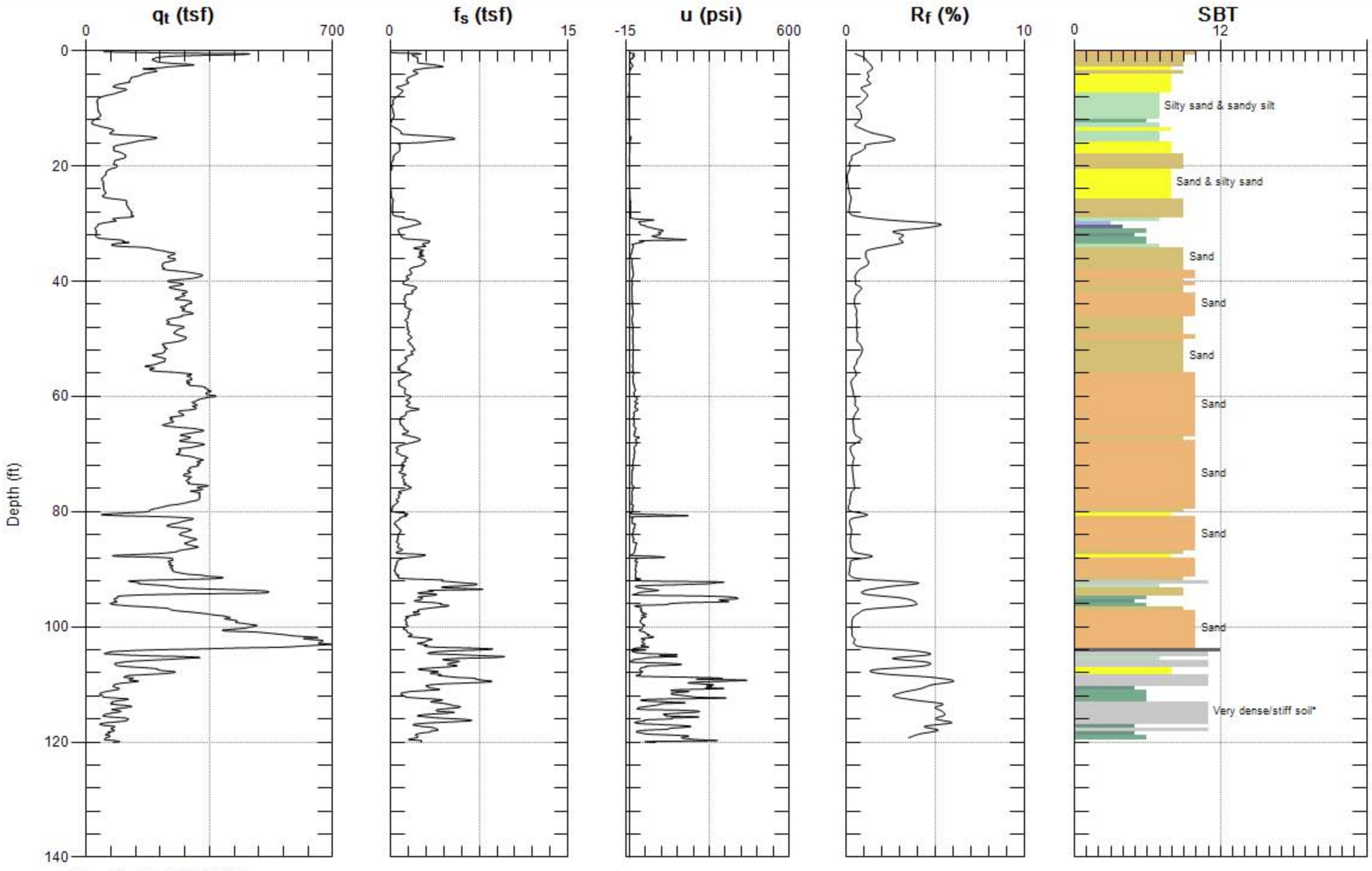
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT111

Engineer: Z.CRAWFORD
Date: 7/15/2008 11:24



Max. Depth: 120.079 (ft)
Avg. Interval: 0.656 (ft)

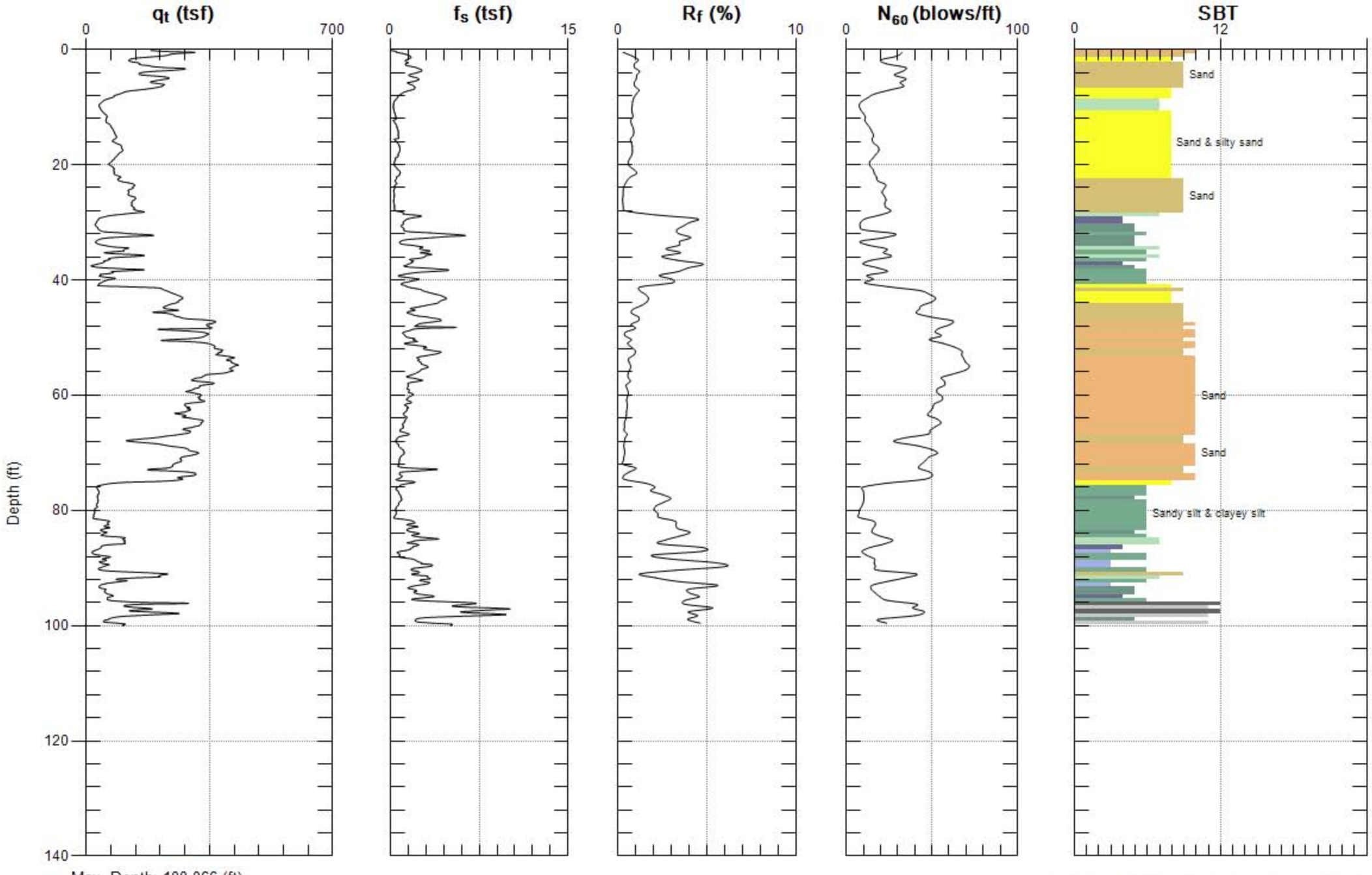
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT112

Engineer: Z.CRAWFORD
Date: 7/15/2008 01:29



Max. Depth: 100.066 (ft)
Avg. Interval: 0.656 (ft)

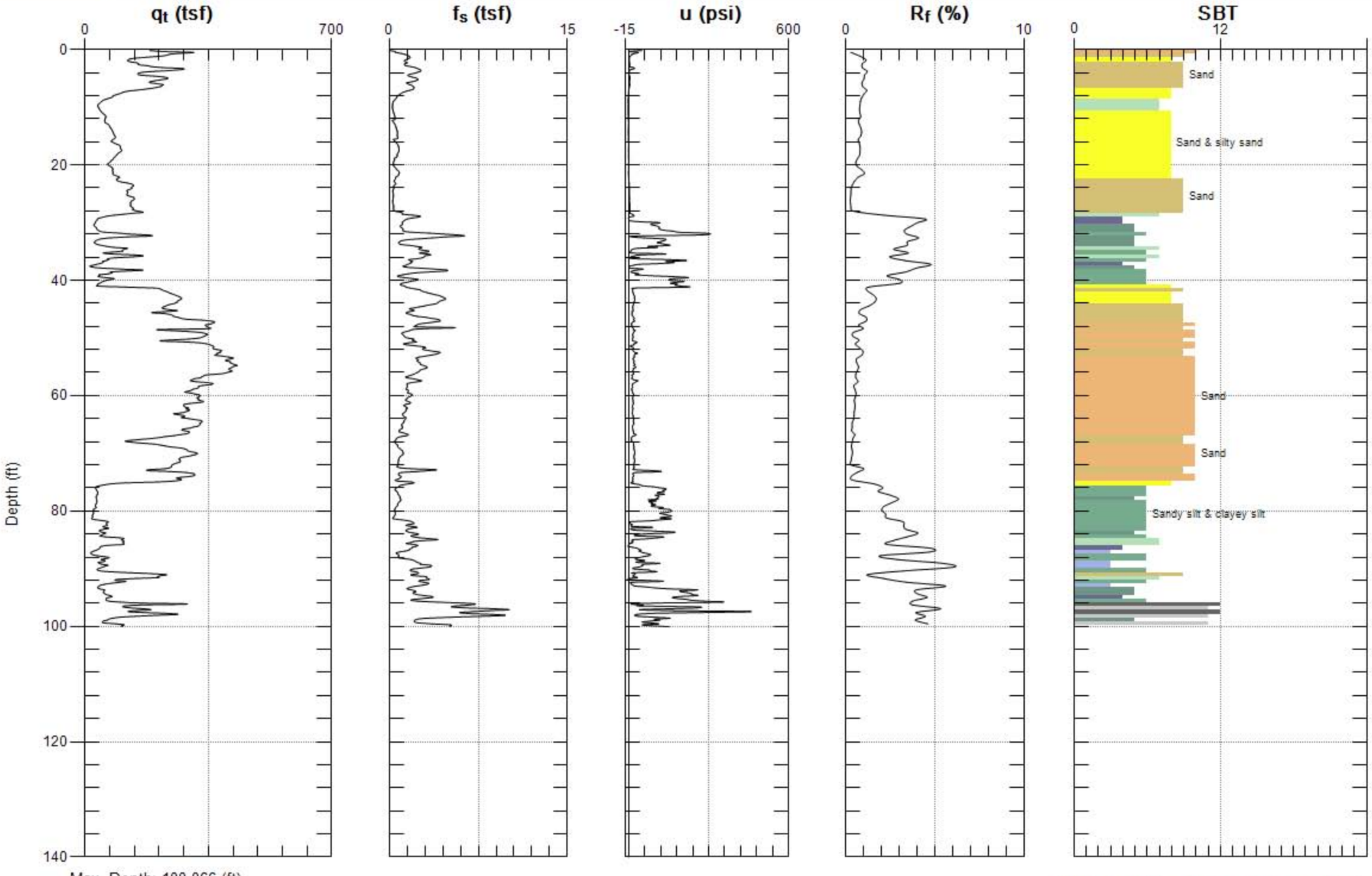
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT112

Engineer: Z.CRAWFORD
Date: 7/15/2008 01:29



Max. Depth: 100.066 (ft)
Avg. Interval: 0.656 (ft)

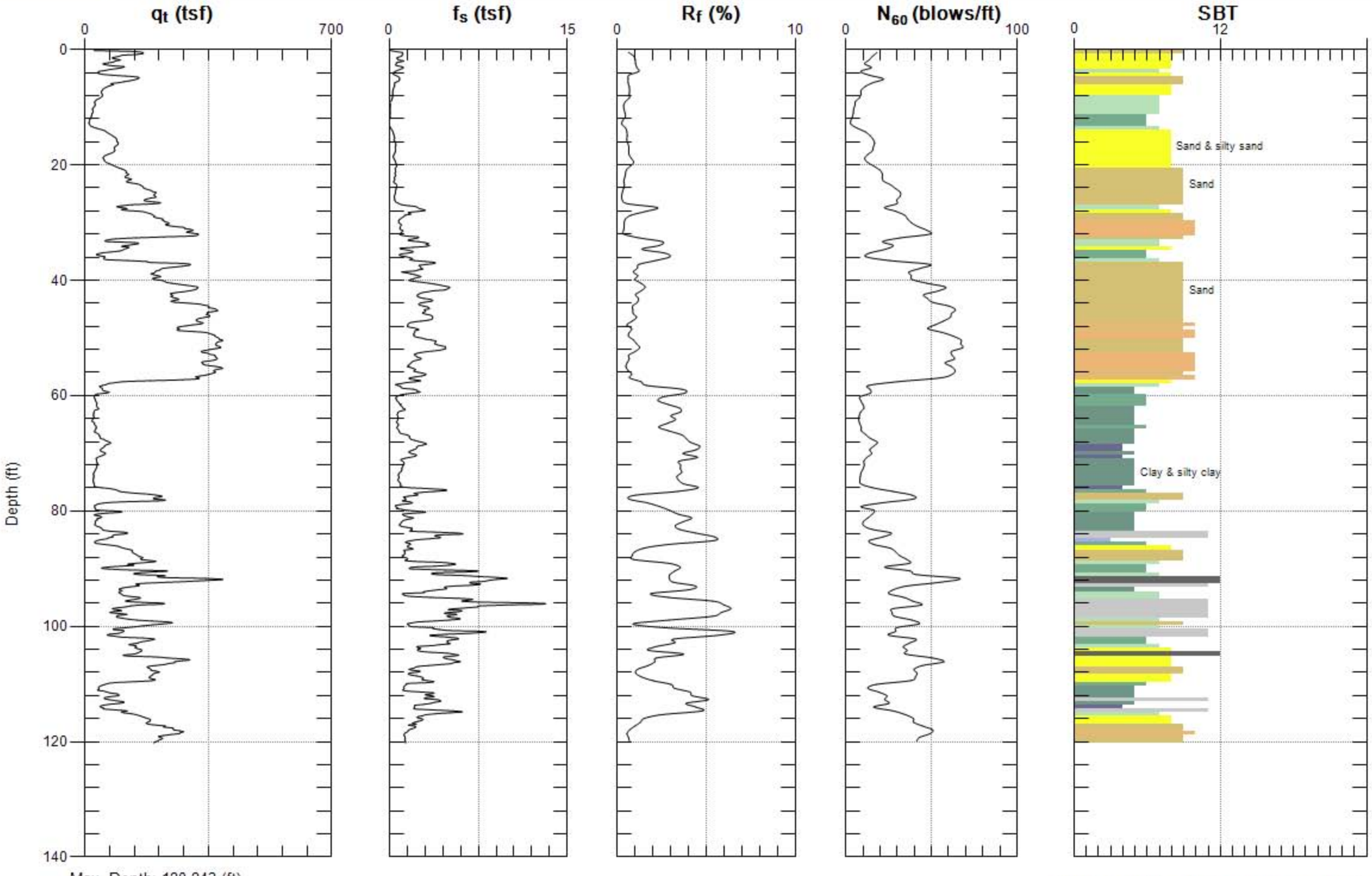
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT113

Engineer: Z.CRAWFORD
Date: 7/16/2008 07:19



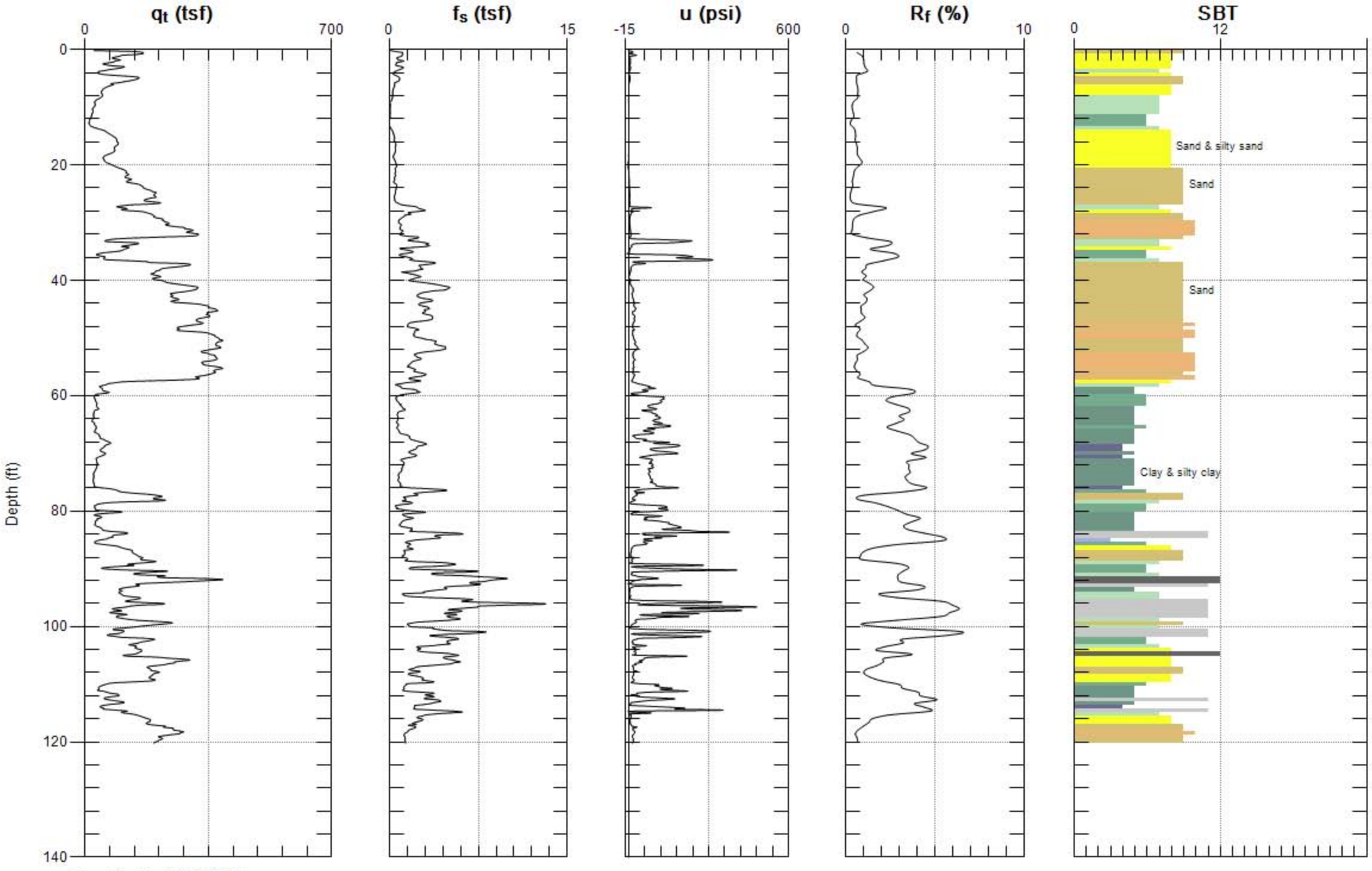
Max. Depth: 120.243 (ft)
Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Engineer: Z.CRAWFORD
Sounding: 3-CPT113
Date: 7/16/2008 07:19



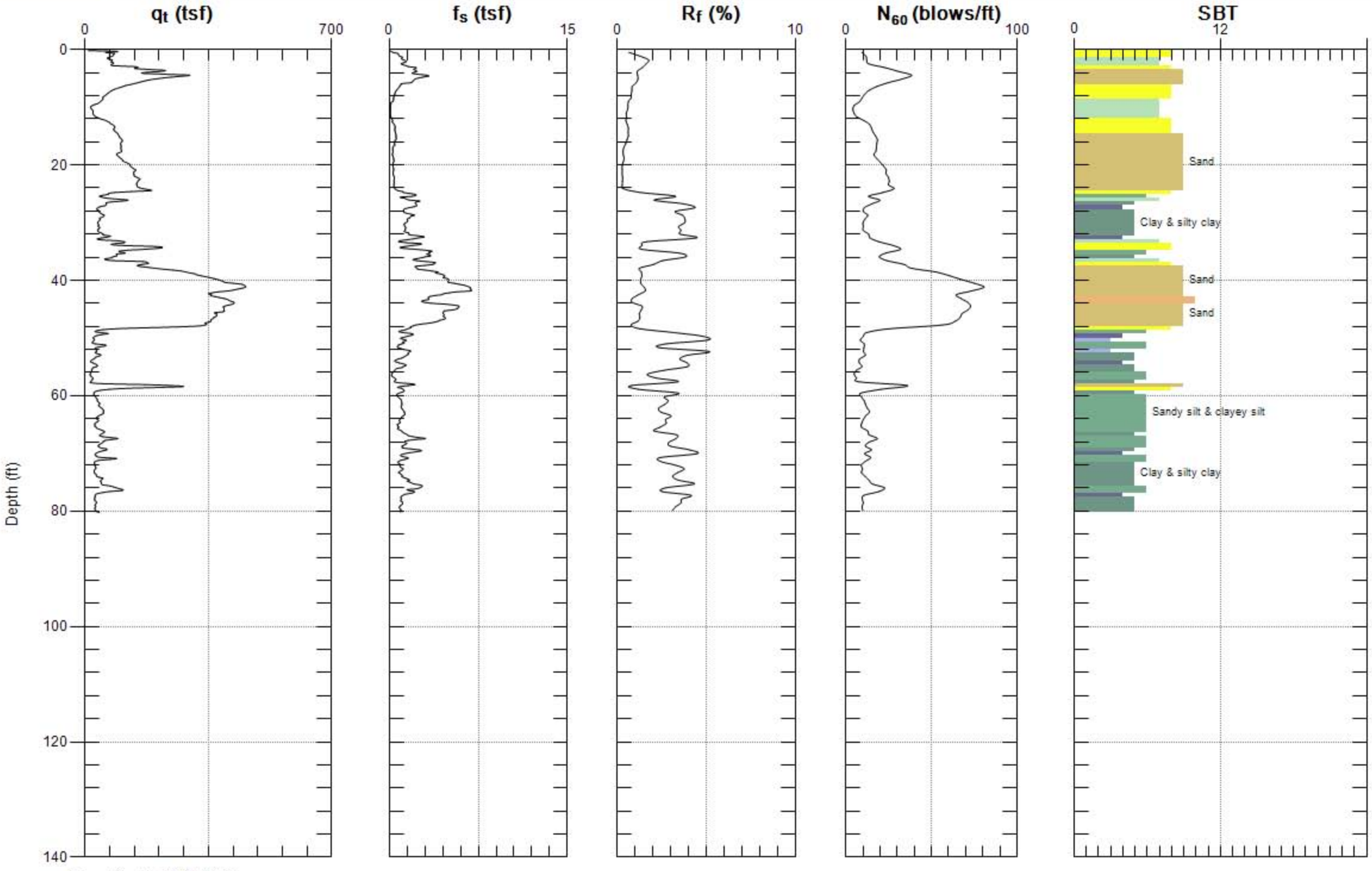
Max. Depth: 120.243 (ft)
Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG **ENGEO**

Site: TRAILS OF MANTECA Engineer: Z.CRAWFORD

Sounding: 3-CPT114 Date: 7/16/2008 10:02



Max. Depth: 80.217 (ft)
Avg. Interval: 0.656 (ft)

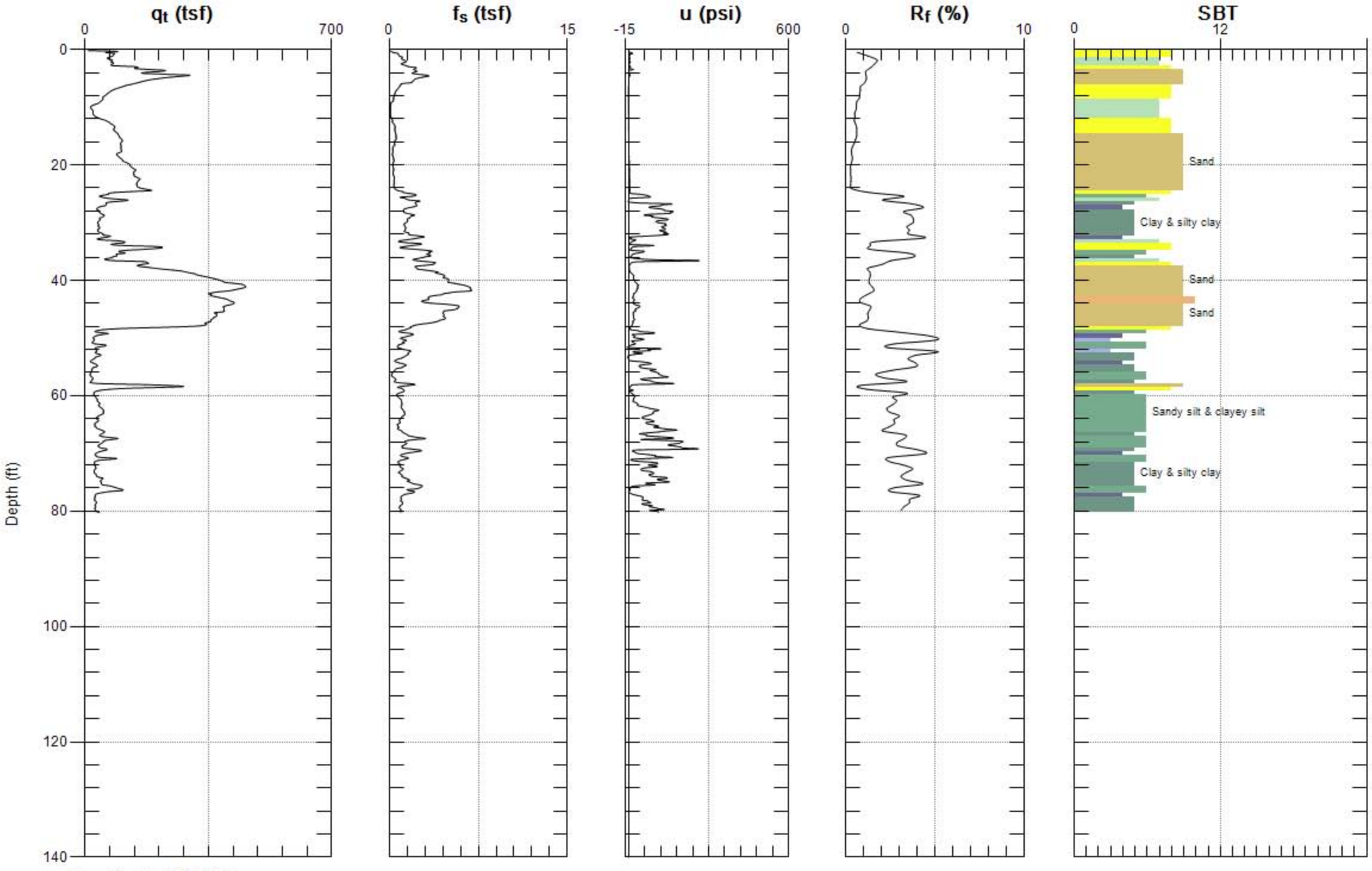
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT114

Engineer: Z.CRAWFORD
Date: 7/16/2008 10:02



Max. Depth: 80.217 (ft)
Avg. Interval: 0.656 (ft)

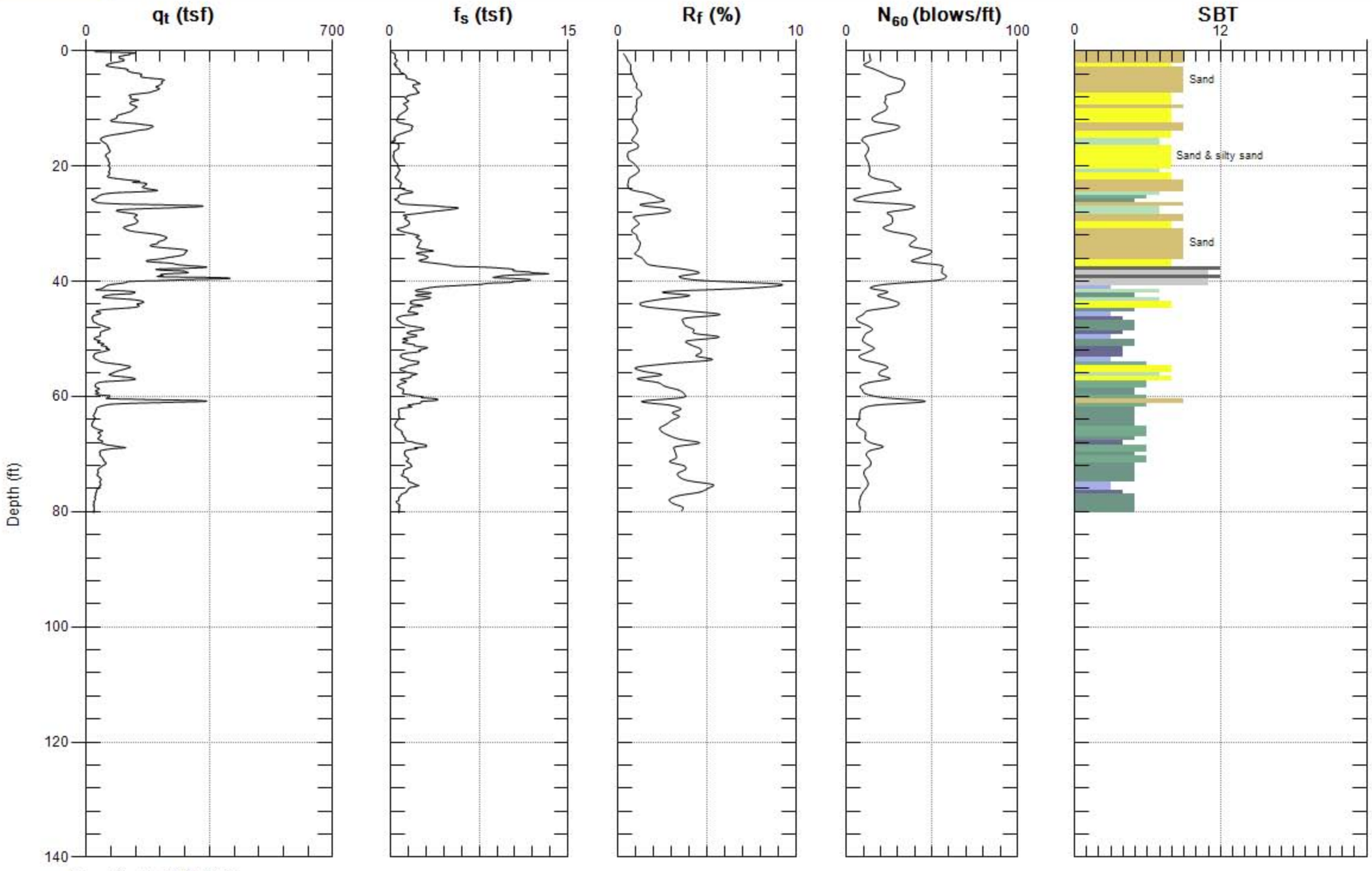
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT115

Engineer: Z.CRAWFORD
Date: 7/16/2008 11:52



Max. Depth: 80.217 (ft)
Avg. Interval: 0.656 (ft)

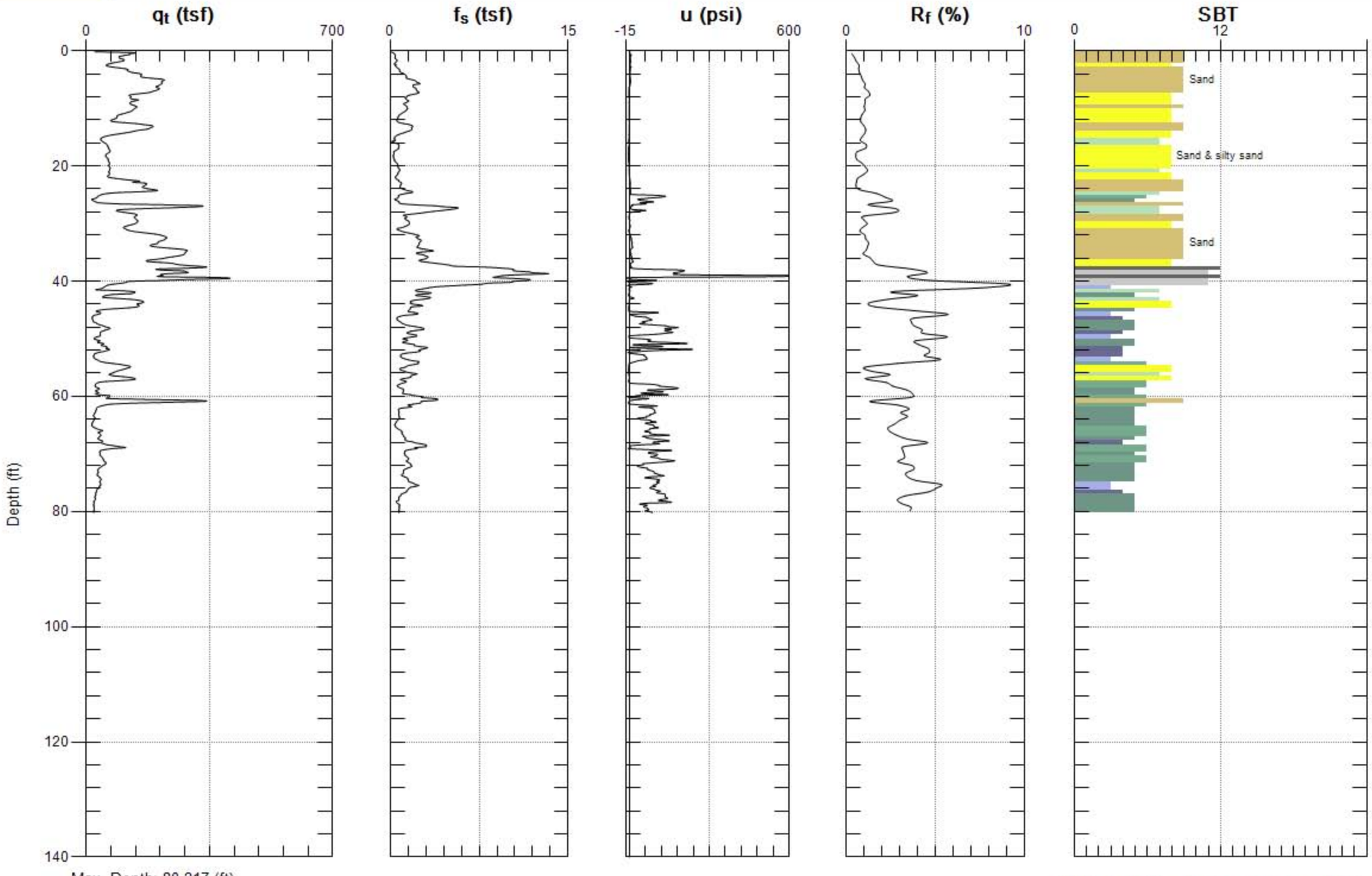
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT115

Engineer: Z.CRAWFORD
Date: 7/16/2008 11:52



Max. Depth: 80.217 (ft)
Avg. Interval: 0.656 (ft)

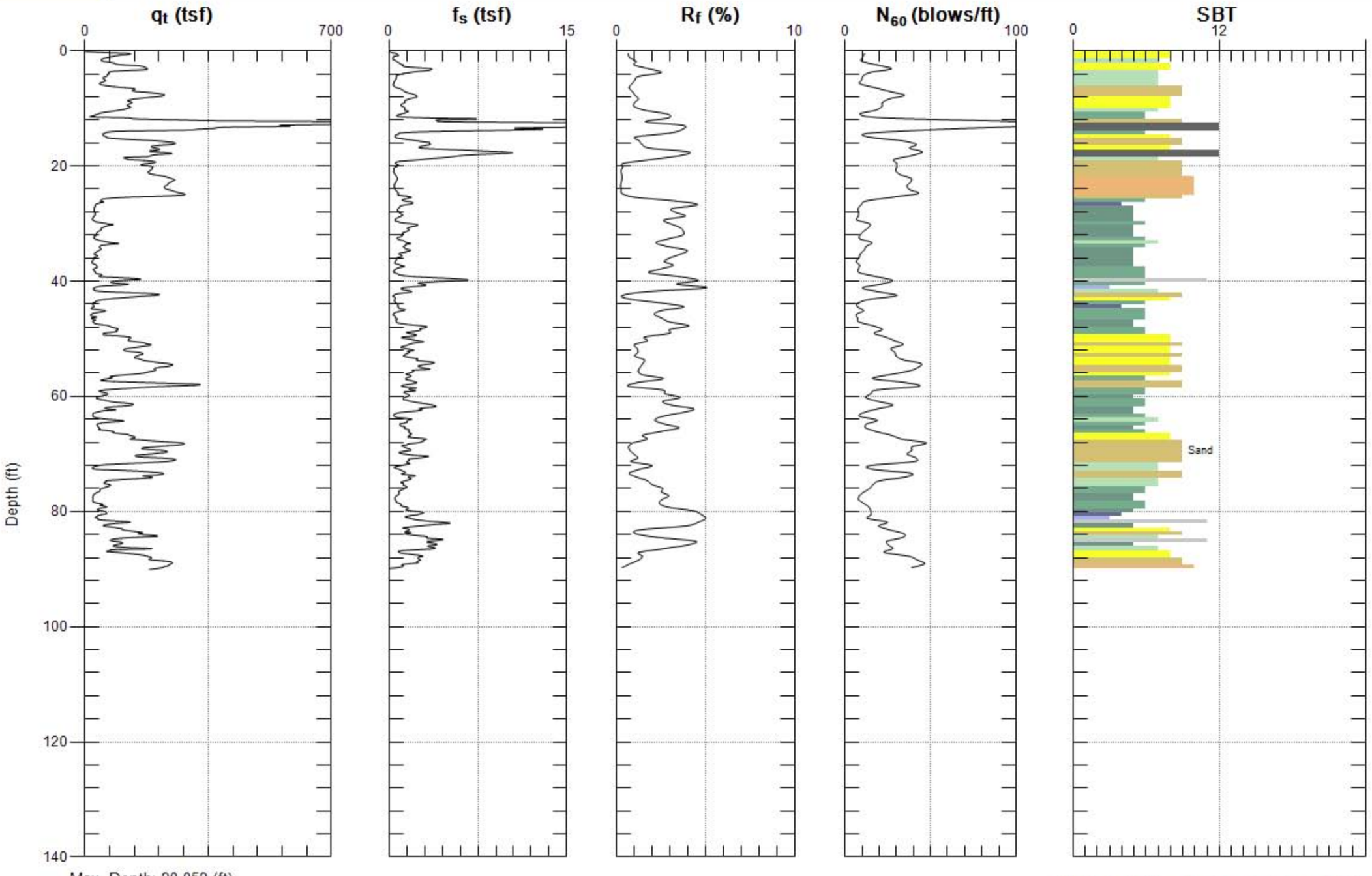
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT116

Engineer: Z.CRAWFORD
Date: 7/17/2008 10:49



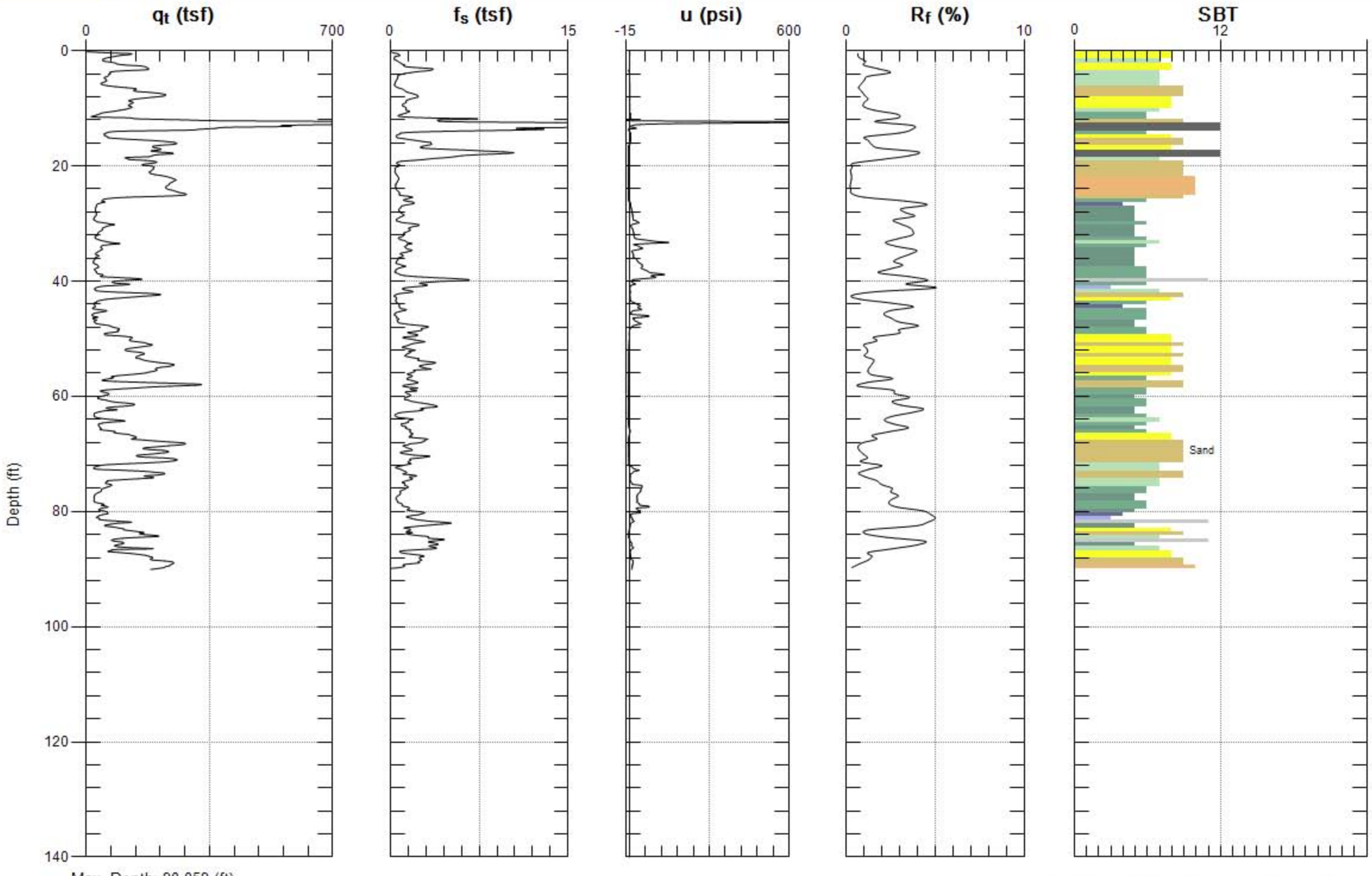
Max. Depth: 90.059 (ft)
Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT116
Engineer: Z.CRAWFORD
Date: 7/17/2008 10:49



Max. Depth: 90.059 (ft)
Avg. Interval: 0.656 (ft)

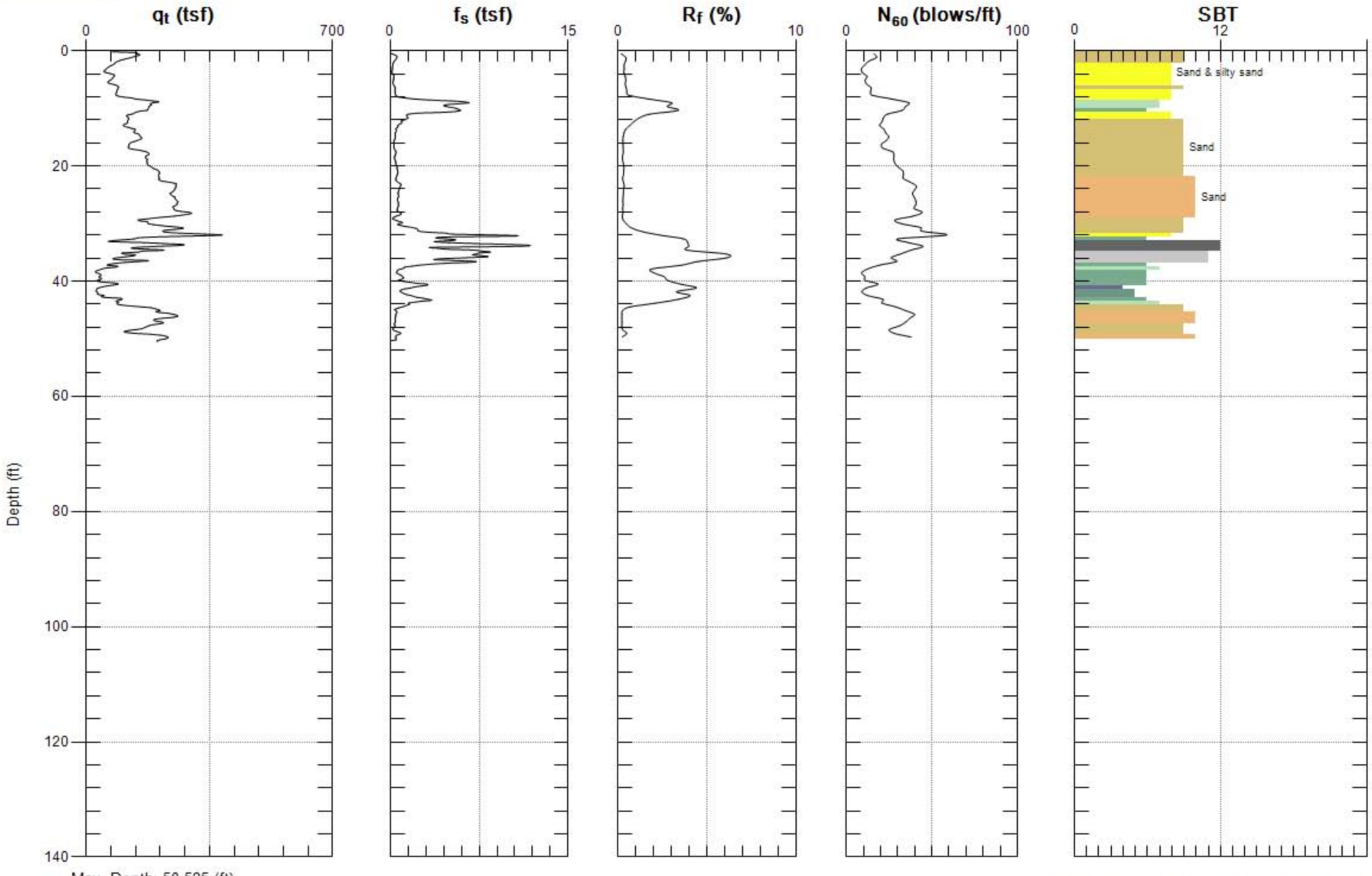
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT117

Engineer: Z.CRAWFORD
Date: 7/17/2008 09:41



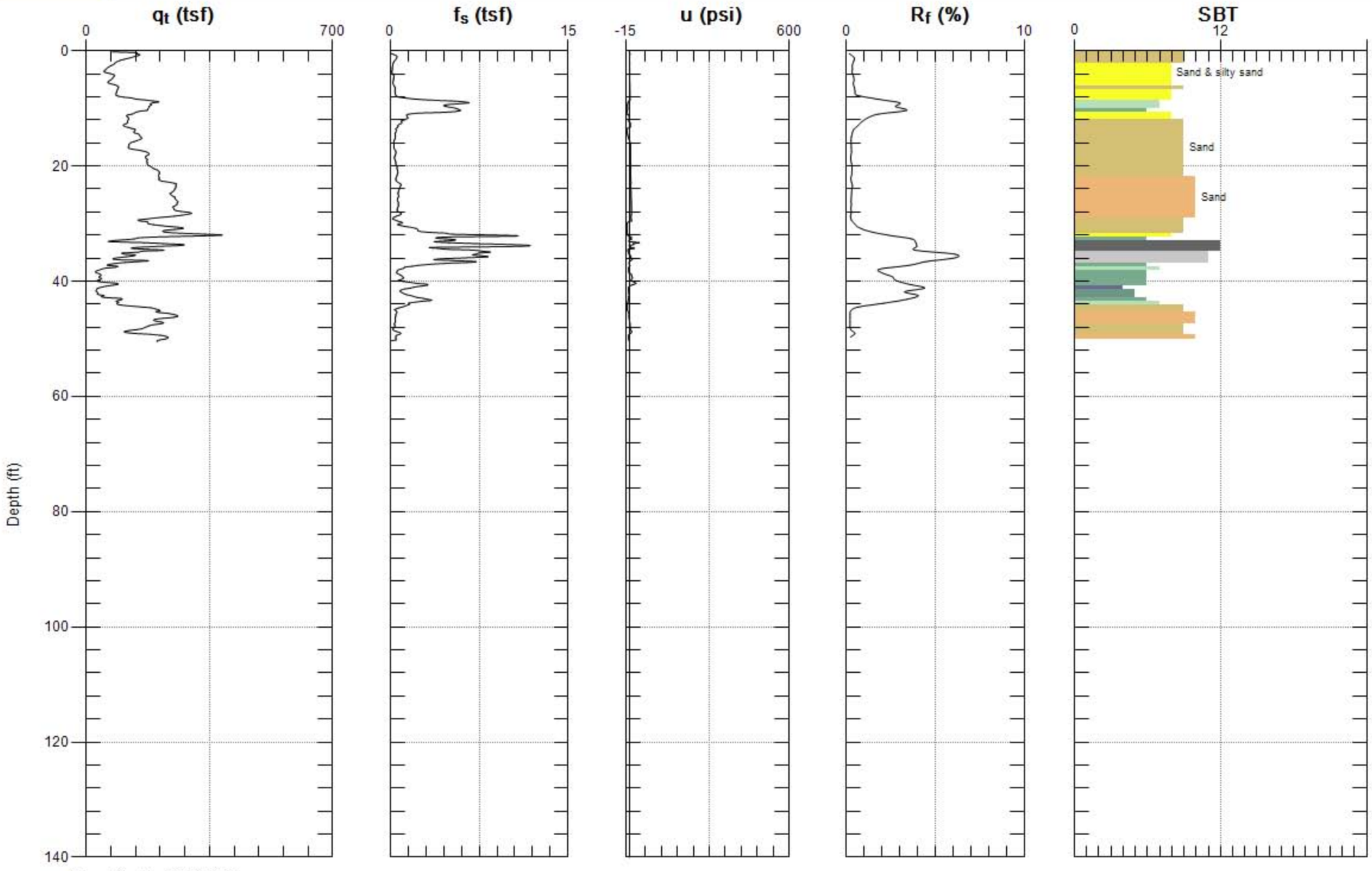
Max. Depth: 50.525 (ft)
Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG **ENGEO**

Site: TRAILS OF MANTECA **Engineer: Z.CRAWFORD**

Sounding: 3-CPT117 **Date: 7/17/2008 09:41**



Max. Depth: 50.525 (ft)
Avg. Interval: 0.656 (ft)

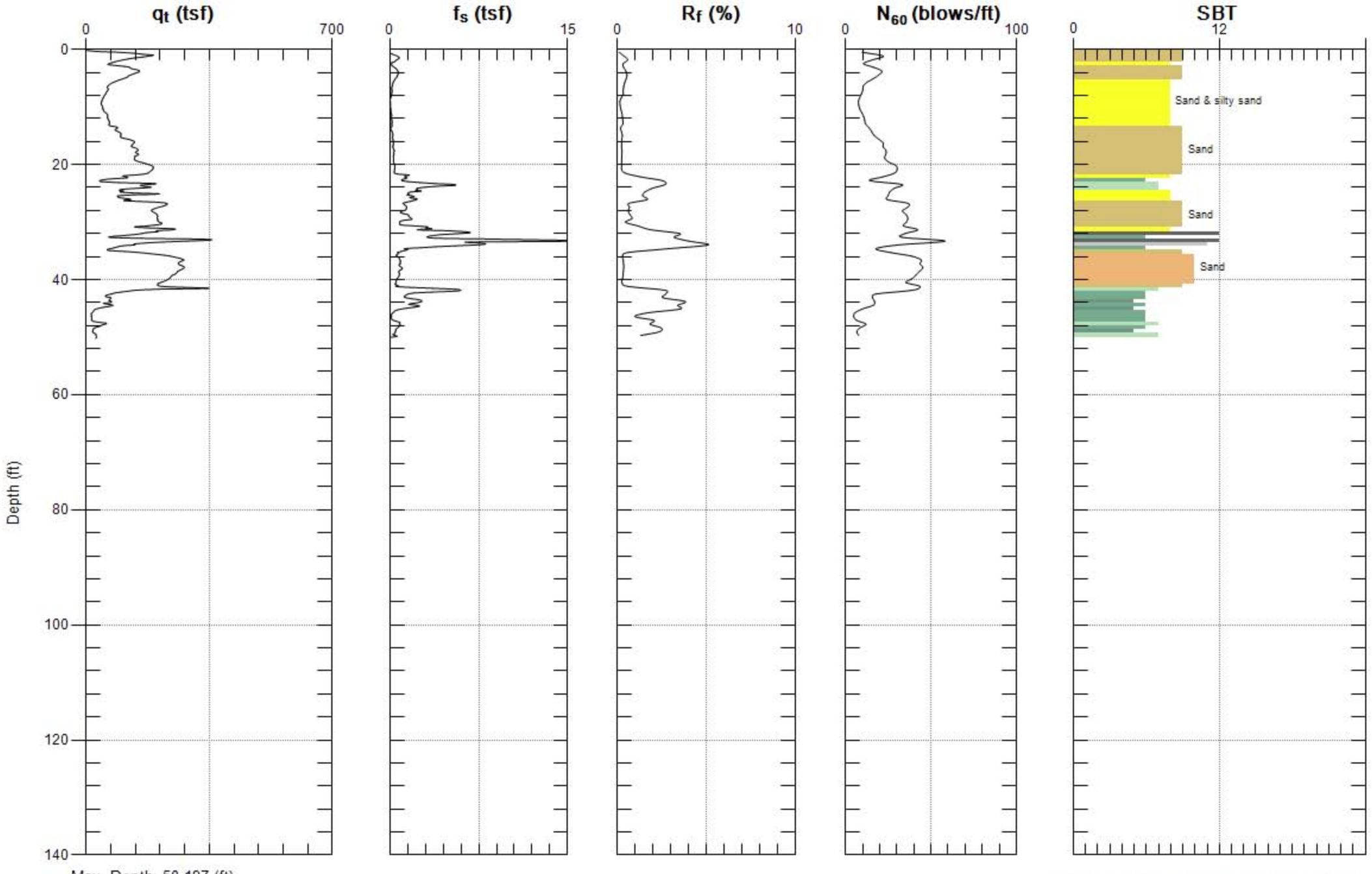
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT118a

Engineer: Z.CRAWFORD
Date: 7/17/2008 08:08



Max. Depth: 50.197 (ft)
Avg. Interval: 0.656 (ft)

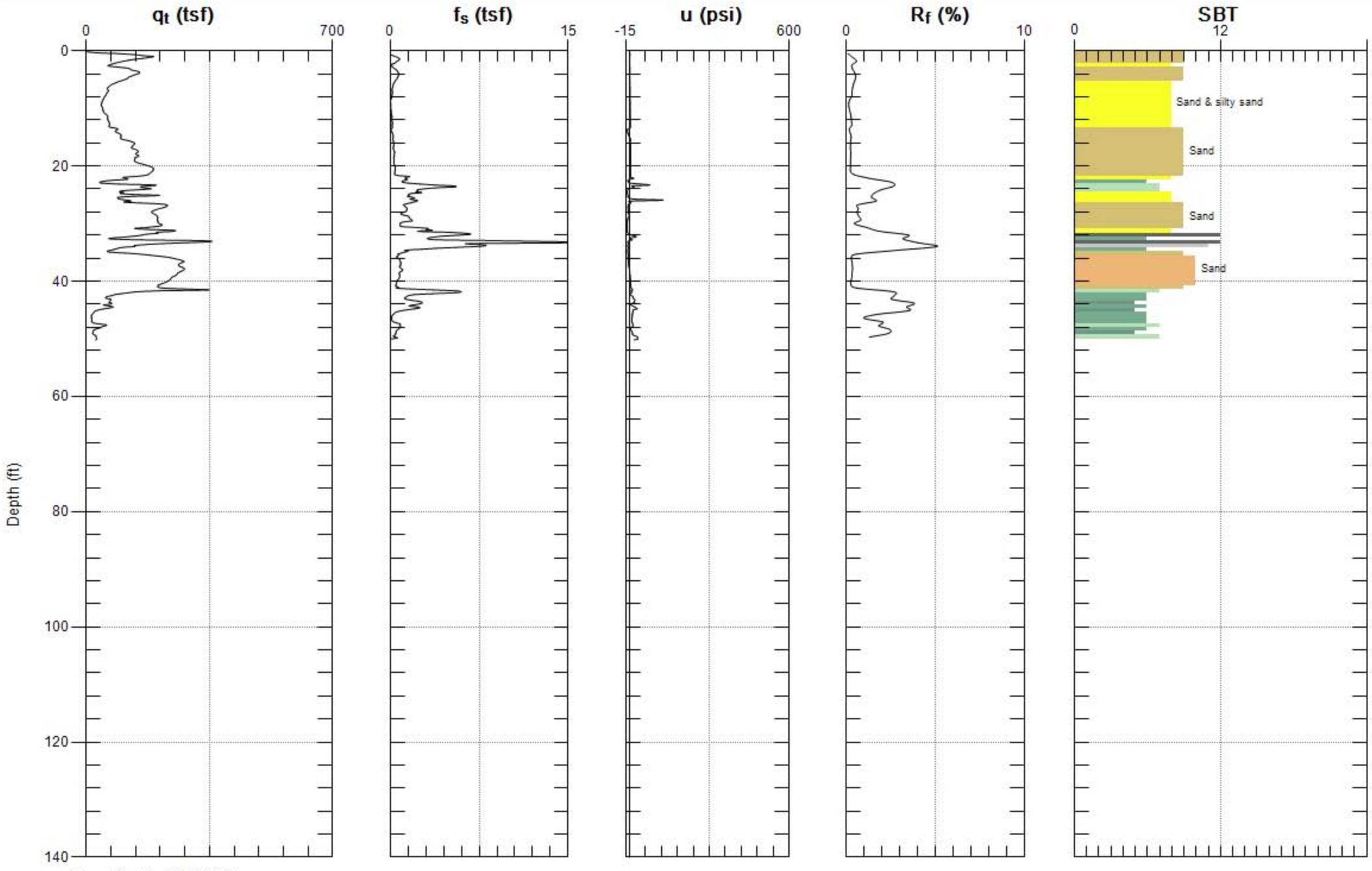
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ENGEO

Site: TRAILS OF MANTECA
Sounding: 3-CPT118a

Engineer: Z.CRAWFORD
Date: 7/17/2008 08:08



Max. Depth: 50.197 (ft)
Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)

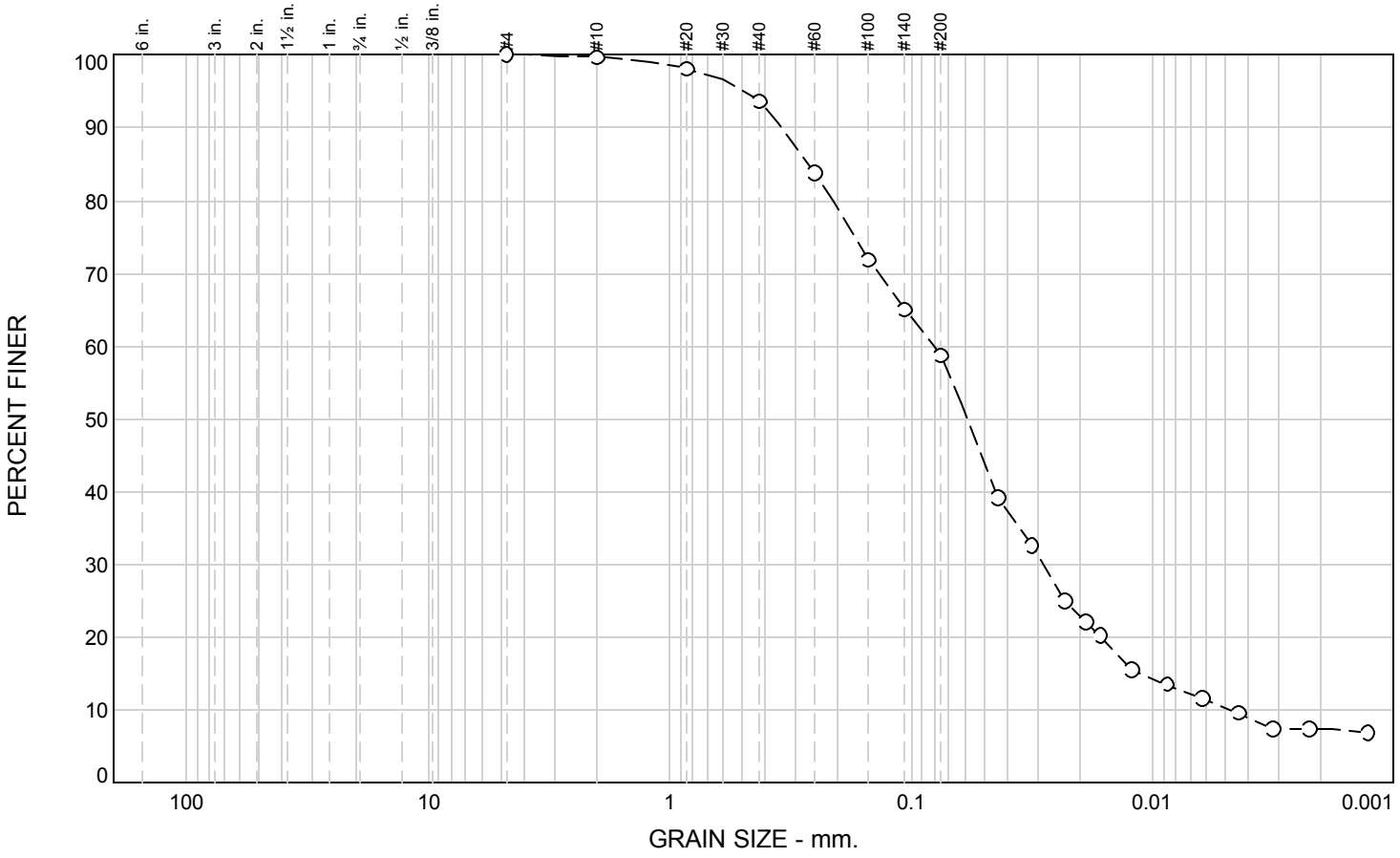
APPENDIX C

Laboratory Test Results

APPENDIX C



Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	6.0	34.9	51.4	7.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.7		
#20	98.1		
#40	93.7		
#60	83.8		
#100	71.9		
#140	65.1		
#200	58.8		
0.0438 mm.	39.3		
0.0317 mm.	32.6		
0.0230 mm.	25.1		
0.0190 mm.	22.2		
0.0165 mm.	20.3		
0.0123 mm.	15.6		
0.0087 mm.	13.6		
0.0062 mm.	11.6		
0.0044 mm.	9.7		
0.0032 mm.	7.5		
0.0022 mm.	7.5		
0.0013 mm.	6.8		

*See (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.2639 D_{60}= 0.0787 D_{50}= 0.0587
D_{30}= 0.0284 D_{15}= 0.0116 D_{10}= 0.0047
C_u= 16.85 C_c= 2.19

Classification

USCS= CL AASHTO=

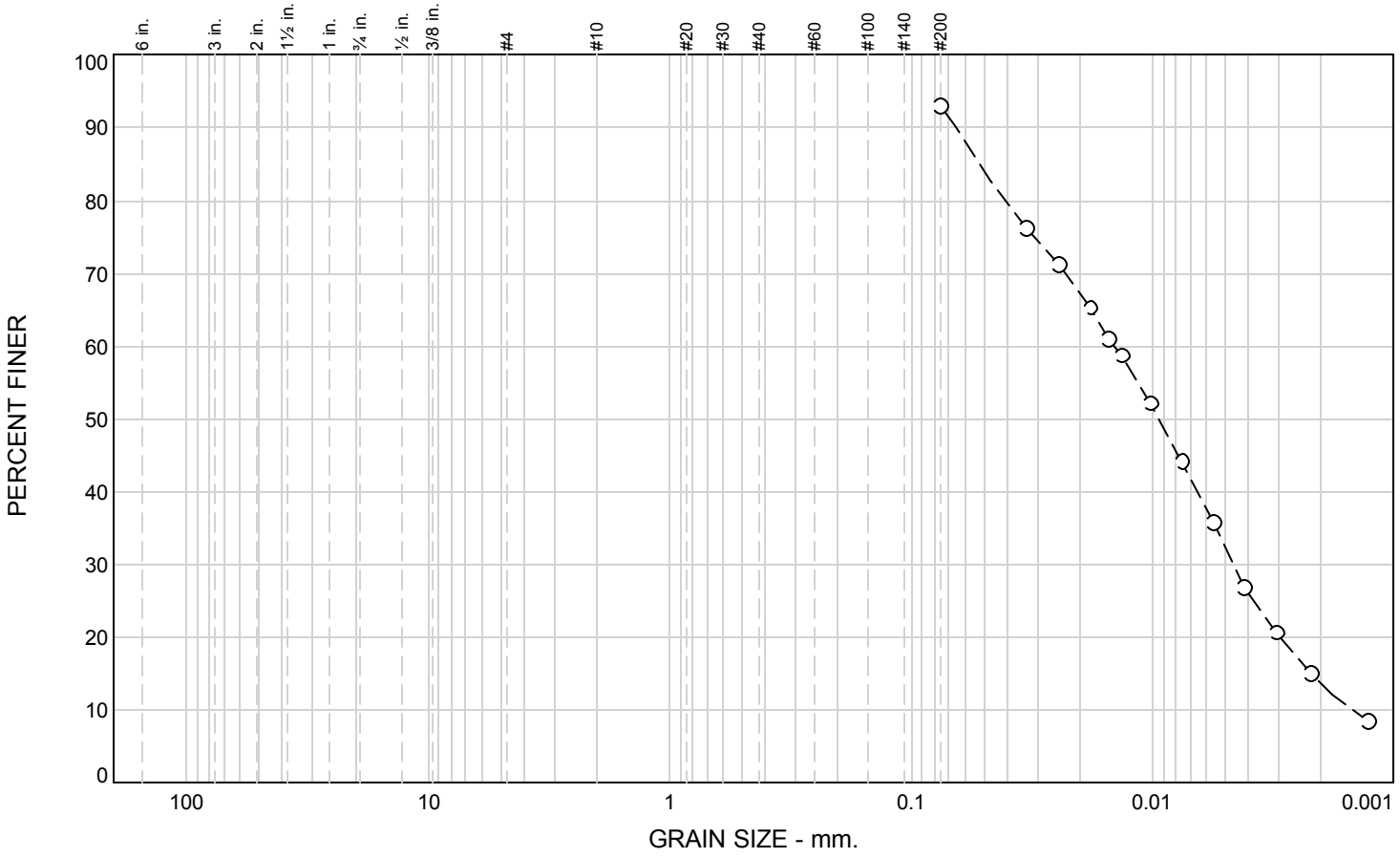
Remarks

Sample No.: 3-B-103 @ 6.5' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 6.5 ft.

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						79.2	13.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	92.9		
0.0333 mm.	76.3		
0.0245 mm.	71.2		
0.0181 mm.	65.3		
0.0152 mm.	60.9		
0.0134 mm.	58.7		
0.0102 mm.	52.2		
0.0075 mm.	44.1		
0.0056 mm.	35.8		
0.0042 mm.	26.8		
0.0030 mm.	20.7		
0.0022 mm.	15.0		
0.0013 mm.	8.4		

*See exploratory boring logS (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= 25 LL= 35 PI= 10

Coefficients

D_{85}= 0.0520 D_{60}= 0.0145 D_{50}= 0.0094
D_{30}= 0.0047 D_{15}= 0.0022 D_{10}= 0.0015
C_u= 9.76 C_c= 1.01

Classification

USCS= ML AASHTO=

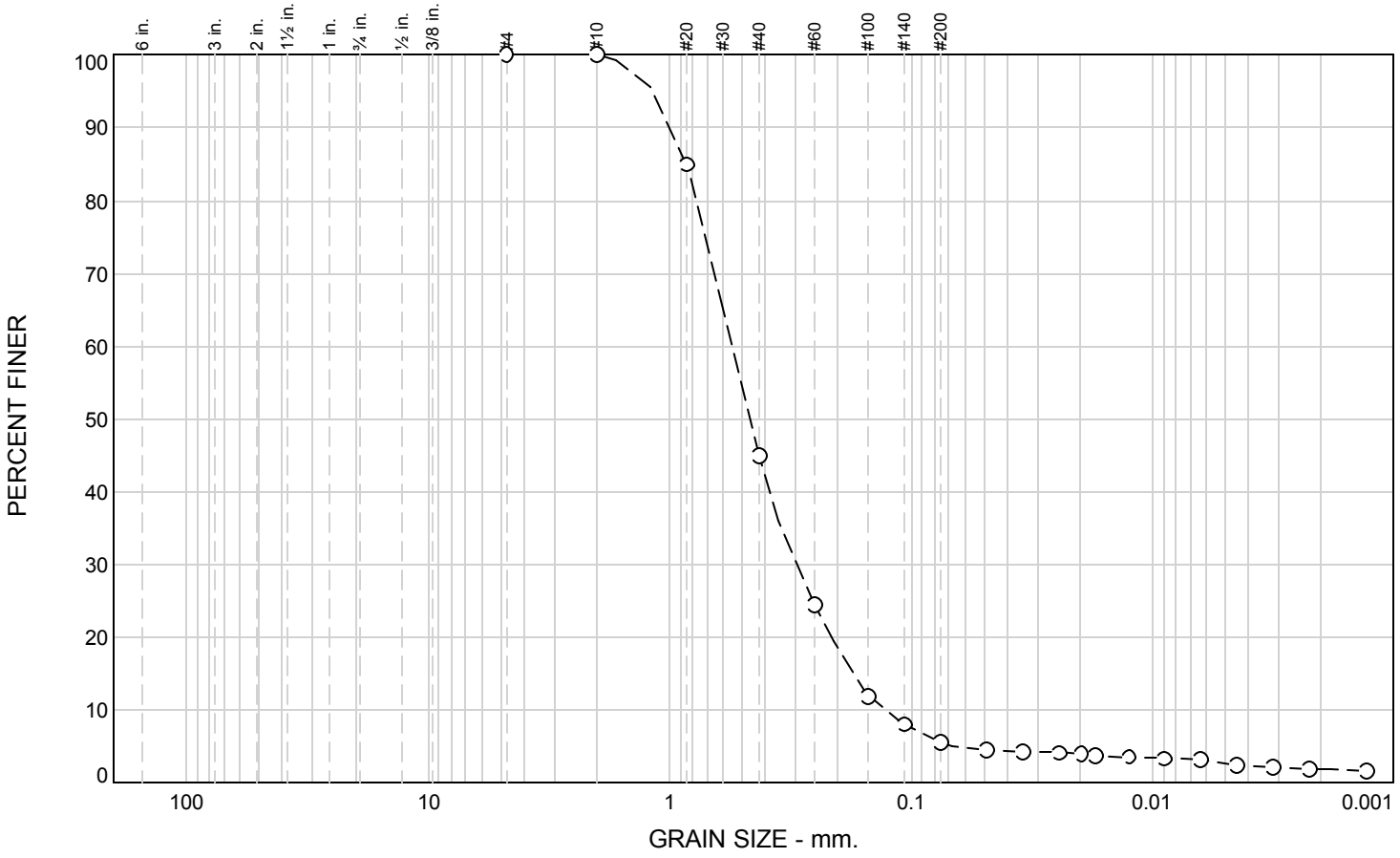
Remarks

Sample No.: 3-B-103 @ 20.0' **Source of Sample:** GRN_SIZE **Date:** 09/05/08
Location: **Elev./Depth:**

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	55.1	39.3	3.7	1.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	85.0		
#40	44.9		
#60	24.5		
#100	11.9		
#140	8.1		
#200	5.6		
0.0485 mm.	4.6		
0.0343 mm.	4.3		
0.0243 mm.	4.2		
0.0198 mm.	4.1		
0.0172 mm.	3.8		
0.0126 mm.	3.6		
0.0089 mm.	3.4		
0.0063 mm.	3.2		
0.0045 mm.	2.5		
0.0032 mm.	2.2		
0.0023 mm.	2.0		
0.0013 mm.	1.7		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.8505 D_{60}= 0.5500 D_{50}= 0.4663
D_{30}= 0.2976 D_{15}= 0.1757 D_{10}= 0.1298
C_u= 4.24 C_c= 1.24

Classification

USCS= AASHTO=

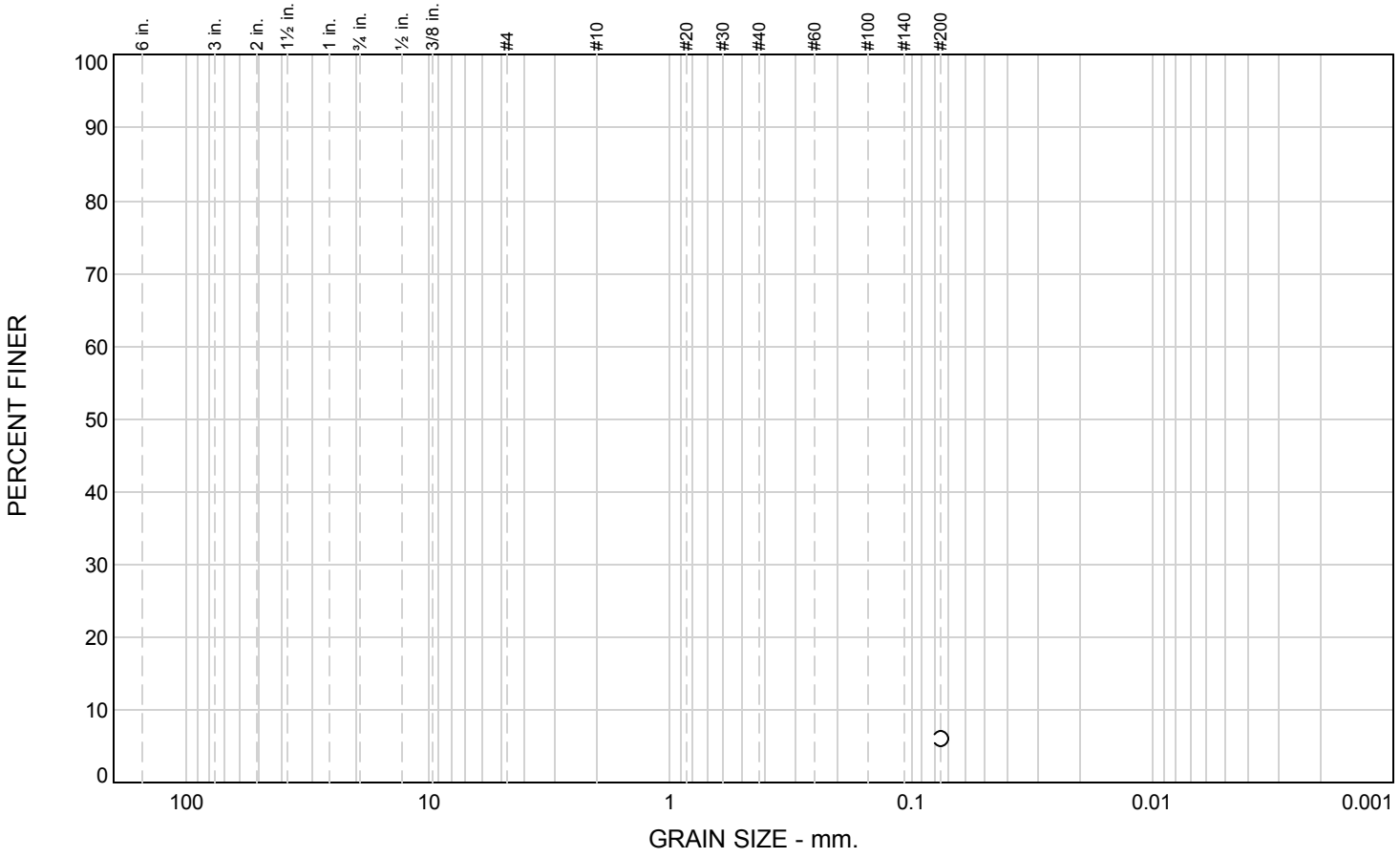
Remarks

Sample No.: 3-B-103 @ 29.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 29.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	6.2		

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SP AASHTO=

Remarks

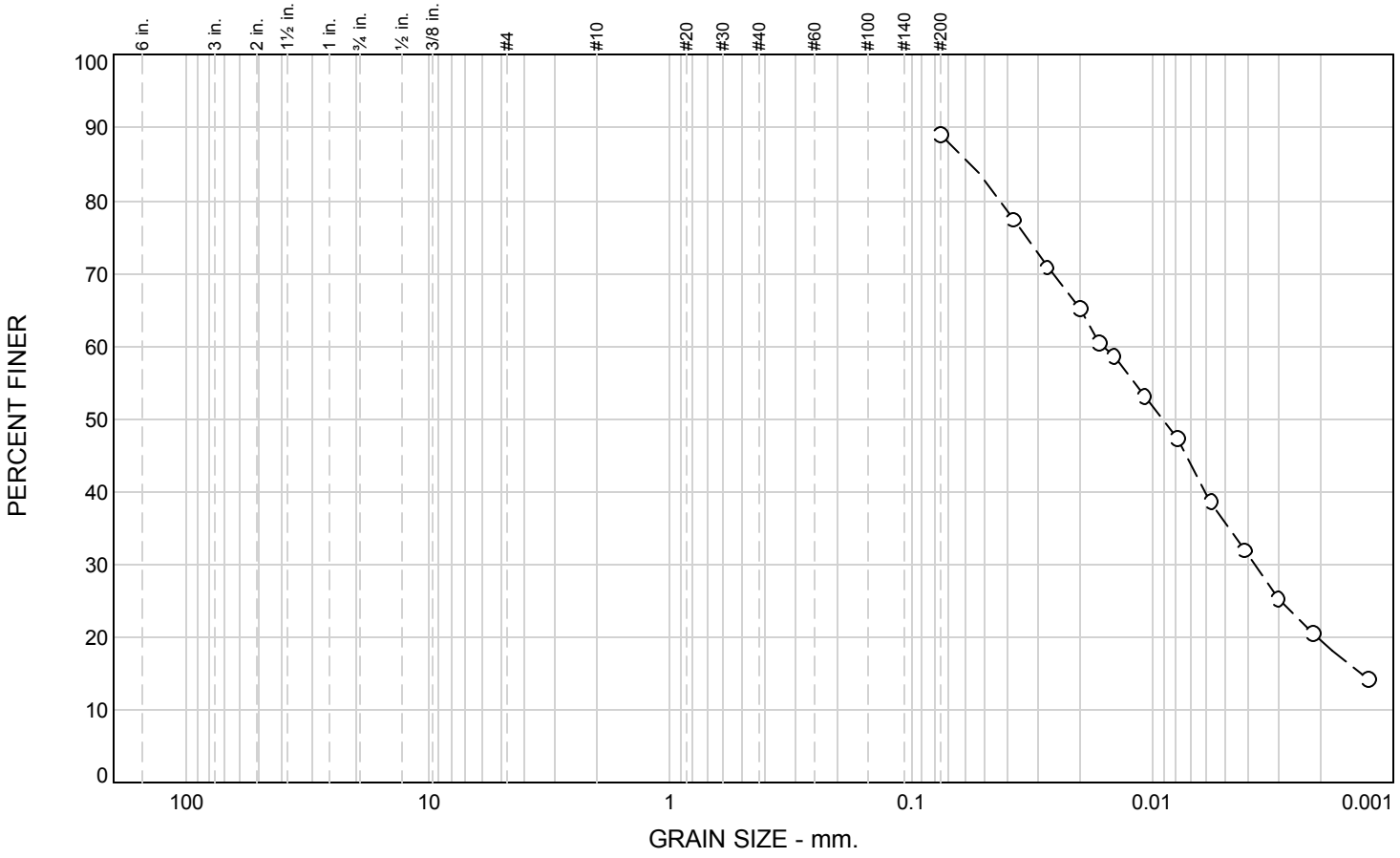
* (no specification provided)

Sample No.: 3-B-103 @ 69.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 69.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						69.5	19.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	89.0		
0.0376 mm.	77.4		
0.0274 mm.	70.8		
0.0199 mm.	65.2		
0.0166 mm.	60.5		
0.0145 mm.	58.7		
0.0108 mm.	53.1		
0.0079 mm.	47.3		
0.0057 mm.	38.8		
0.0042 mm.	32.0		
0.0030 mm.	25.2		
0.0022 mm.	20.6		
0.0013 mm.	14.2		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0573 D_{60}= 0.0161 D_{50}= 0.0090
D_{30}= 0.0038 D_{15}= 0.0014 D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

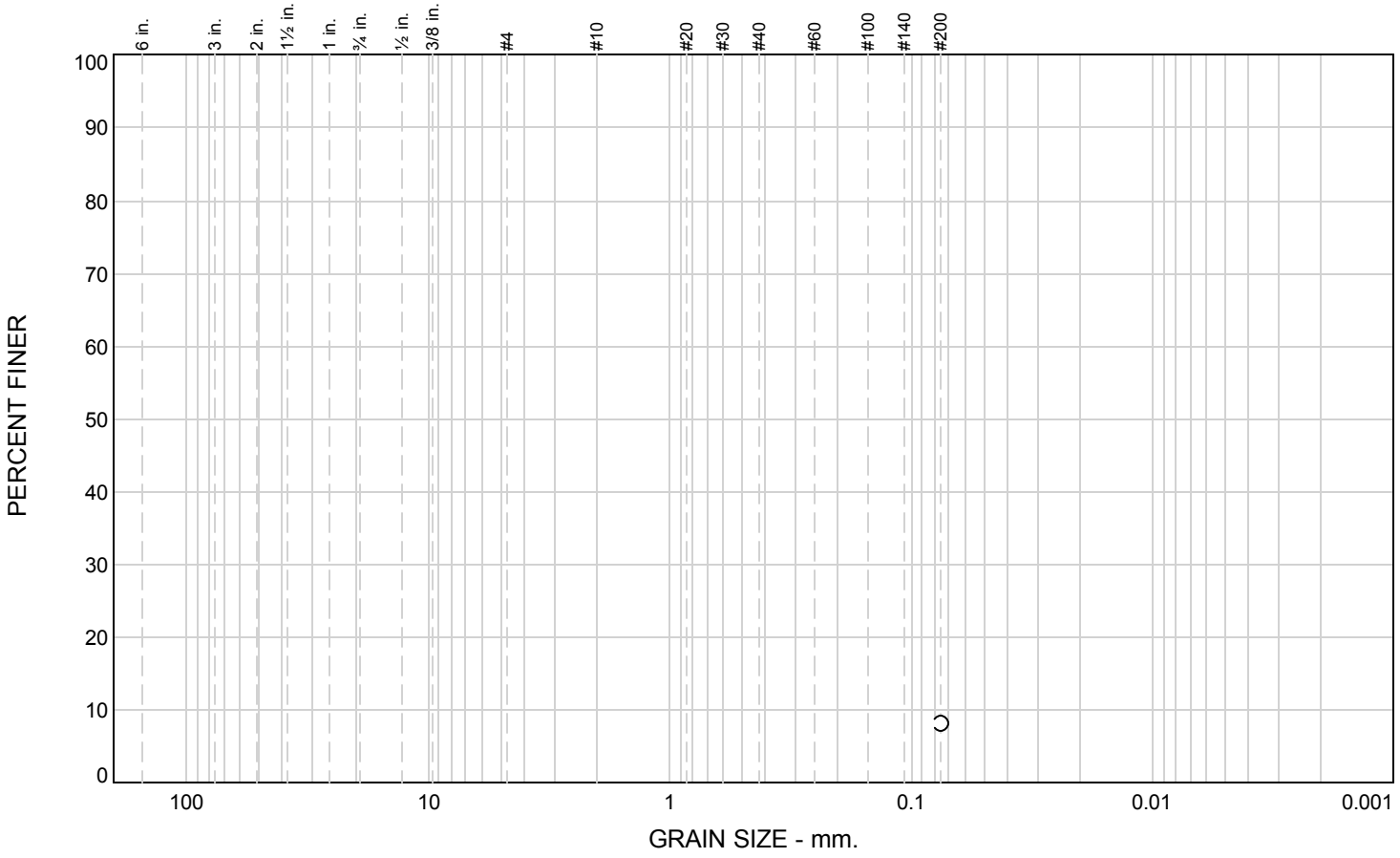
Remarks

Sample No.: 3-B-103 @ 108.5' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 108.5 feet

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						8.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	8.3		

*See exploratory boring log (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SP AASHTO=

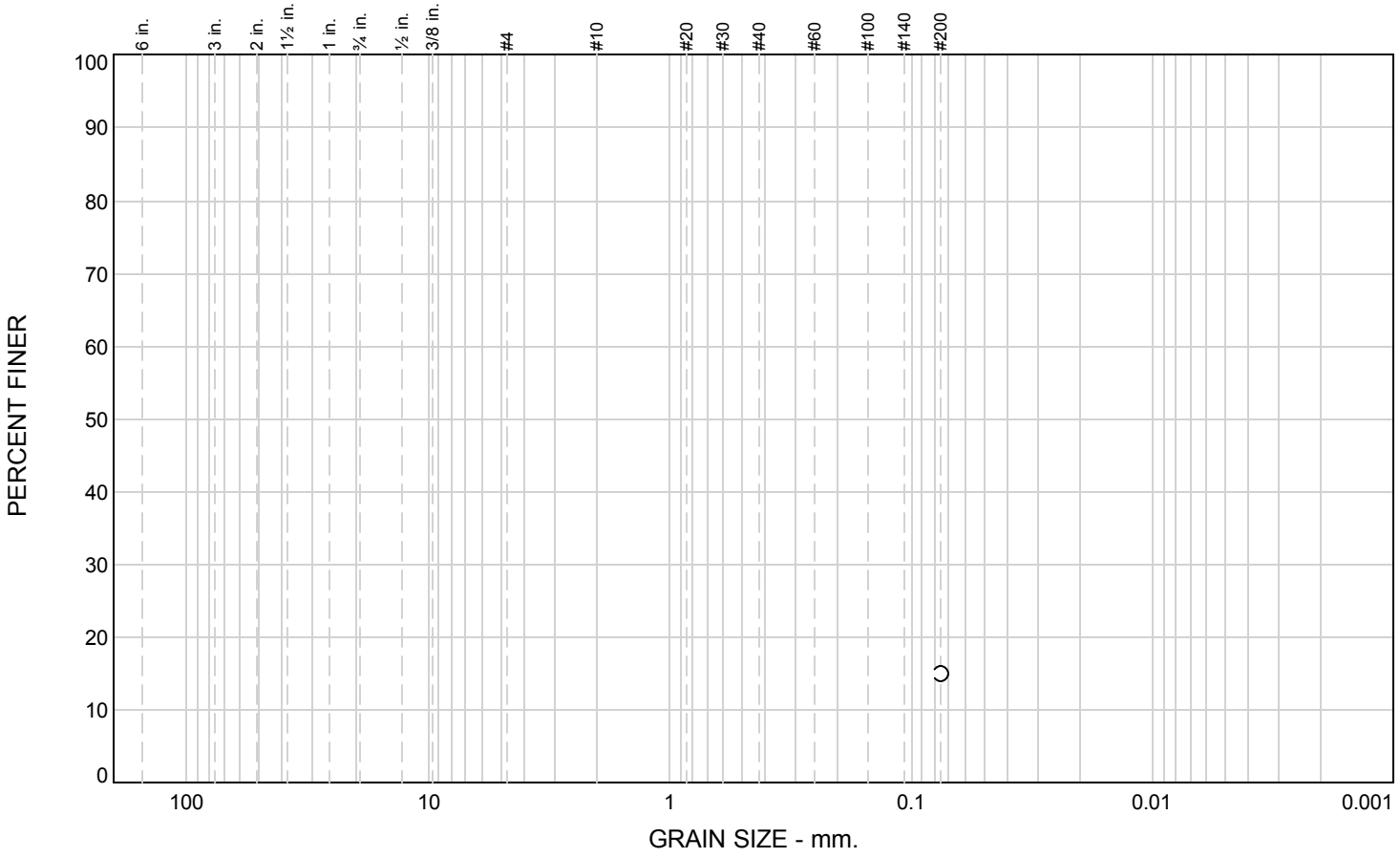
Remarks

Sample No.: 3-B-104 @ 4.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 4.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						15.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	15.1		

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

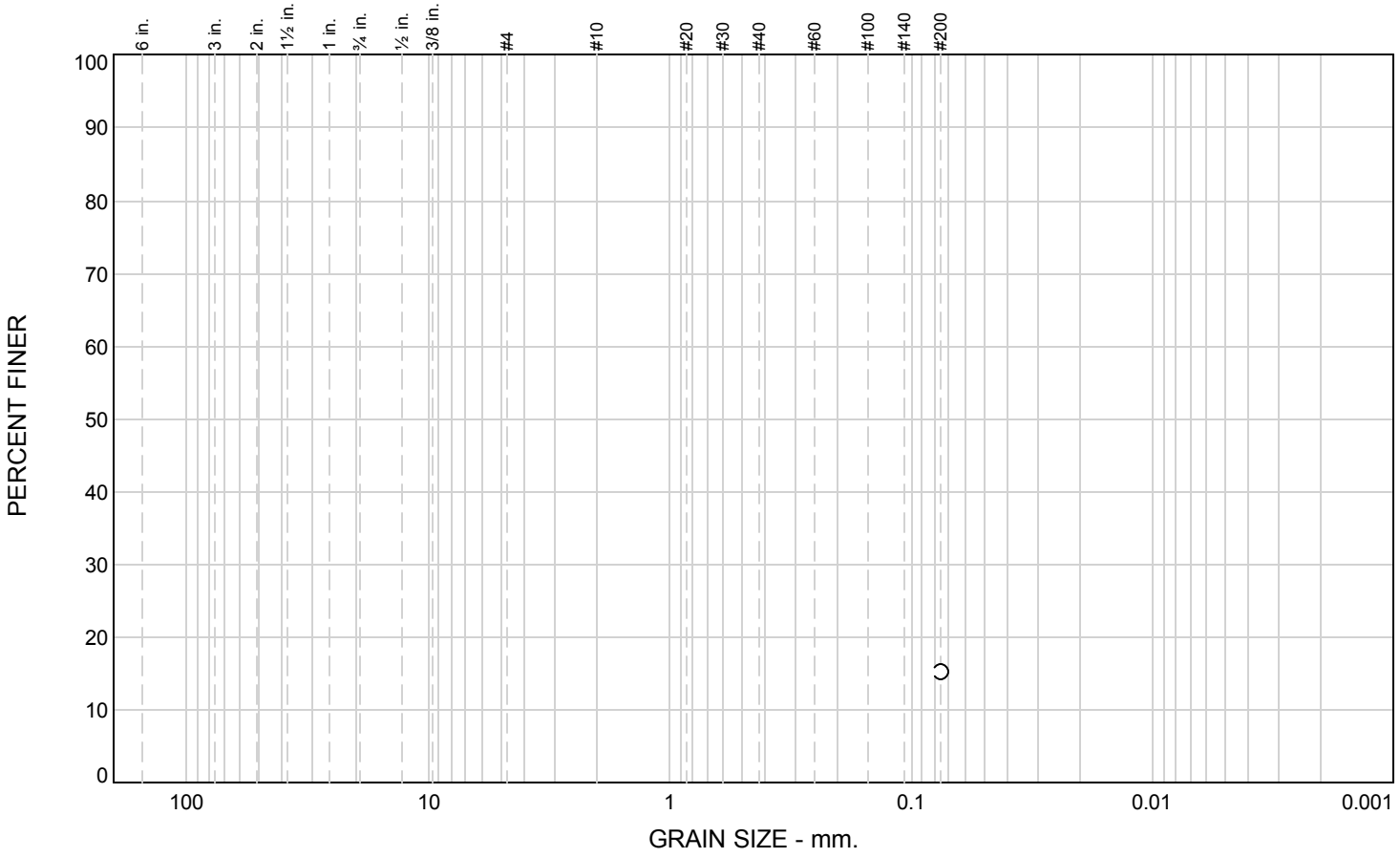
* (no specification provided)

Sample No.: 3-B-104 @ 8.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 8.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						15.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	15.3		

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

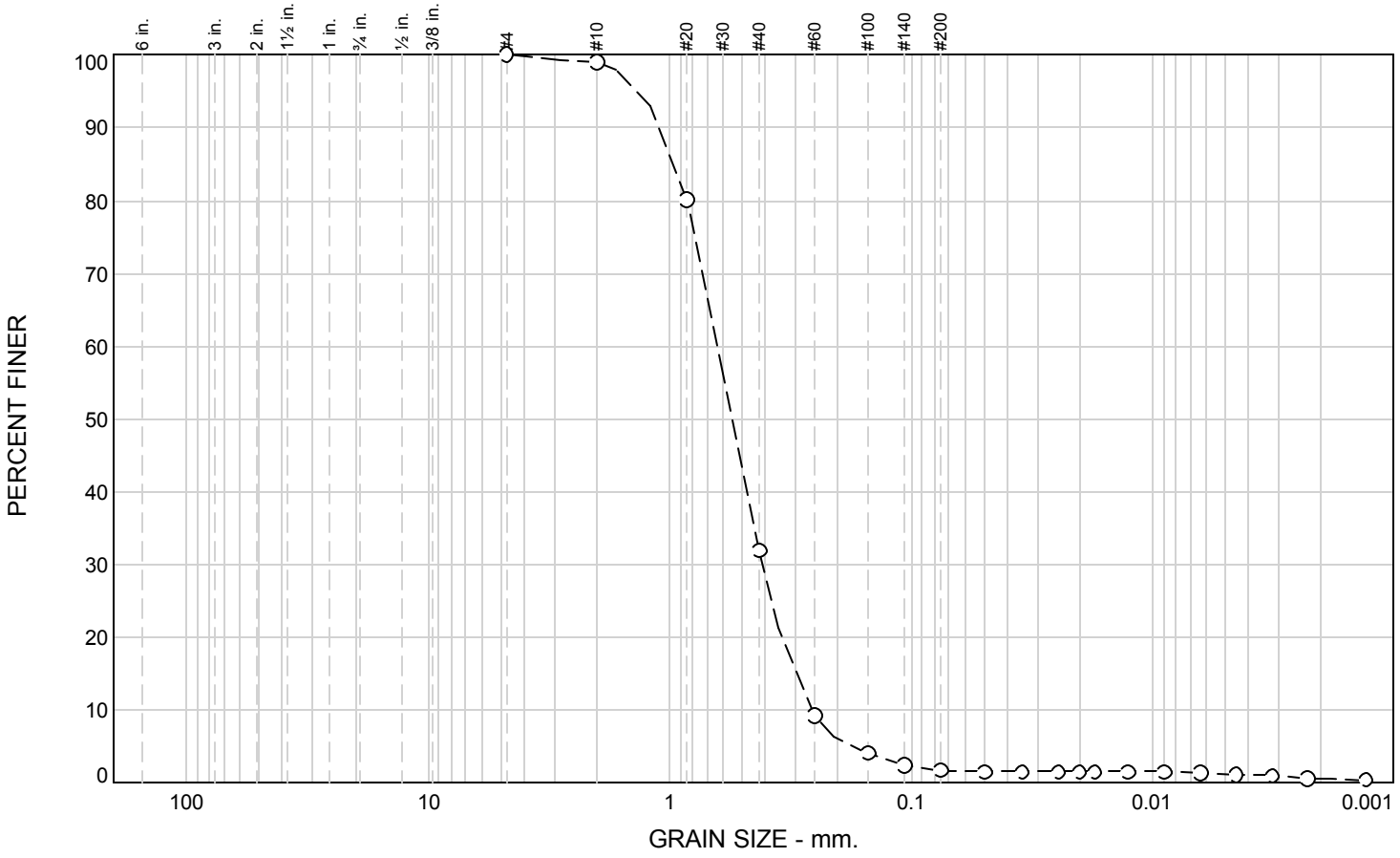
* (no specification provided)

Sample No.: 3-B-104 @ 14.5' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 14.5 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	67.1	30.1	1.2	0.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.0		
#20	80.1		
#40	31.9		
#60	9.3		
#100	4.2		
#140	2.5		
#200	1.8		
0.0493 mm.	1.6		
0.0349 mm.	1.6		
0.0247 mm.	1.6		
0.0201 mm.	1.6		
0.0174 mm.	1.6		
0.0127 mm.	1.6		
0.0090 mm.	1.6		
0.0064 mm.	1.4		
0.0045 mm.	1.1		
0.0032 mm.	1.0		
0.0023 mm.	0.6		
0.0013 mm.	0.5		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.9400 D_{60}= 0.6271 D_{50}= 0.5487
D_{30}= 0.4119 D_{15}= 0.3031 D_{10}= 0.2577
C_u= 2.43 C_c= 1.05

Classification

USCS= AASHTO=

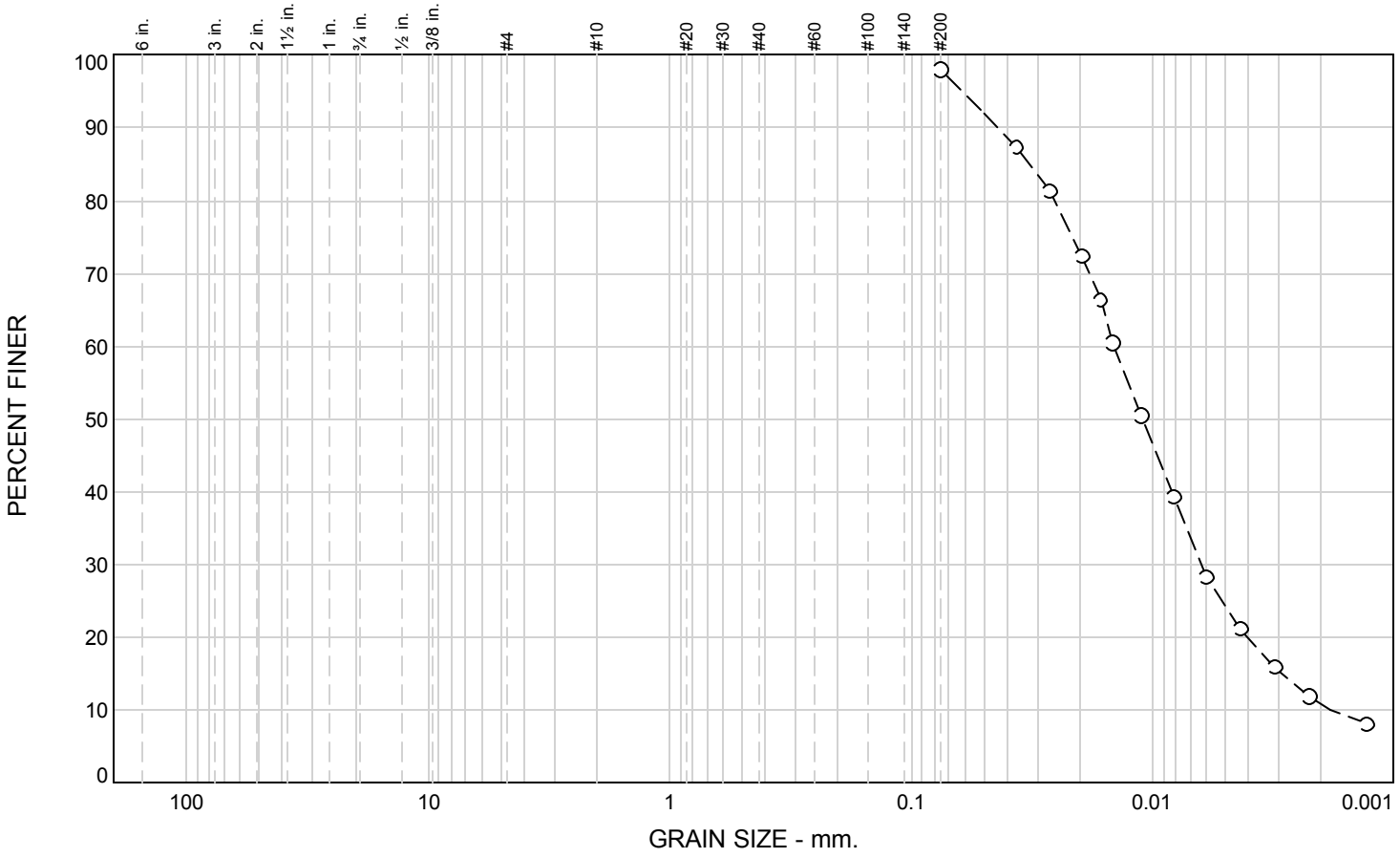
Remarks

Sample No.: 3-B-104 @ 23.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 23.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						87.3	10.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	98.1		
0.0367 mm.	87.3		
0.0267 mm.	81.3		
0.0197 mm.	72.4		
0.0165 mm.	66.4		
0.0146 mm.	60.4		
0.0111 mm.	50.5		
0.0082 mm.	39.3		
0.0060 mm.	28.3		
0.0043 mm.	21.2		
0.0031 mm.	16.0		
0.0022 mm.	11.9		
0.0013 mm.	8.1		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= 26 LL= 28 PI= 2

Coefficients

D_{85}= 0.0318 D_{60}= 0.0145 D_{50}= 0.0109
D_{30}= 0.0063 D_{15}= 0.0029 D_{10}= 0.0018
C_u= 8.08 C_c= 1.54

Classification

USCS= ML AASHTO=

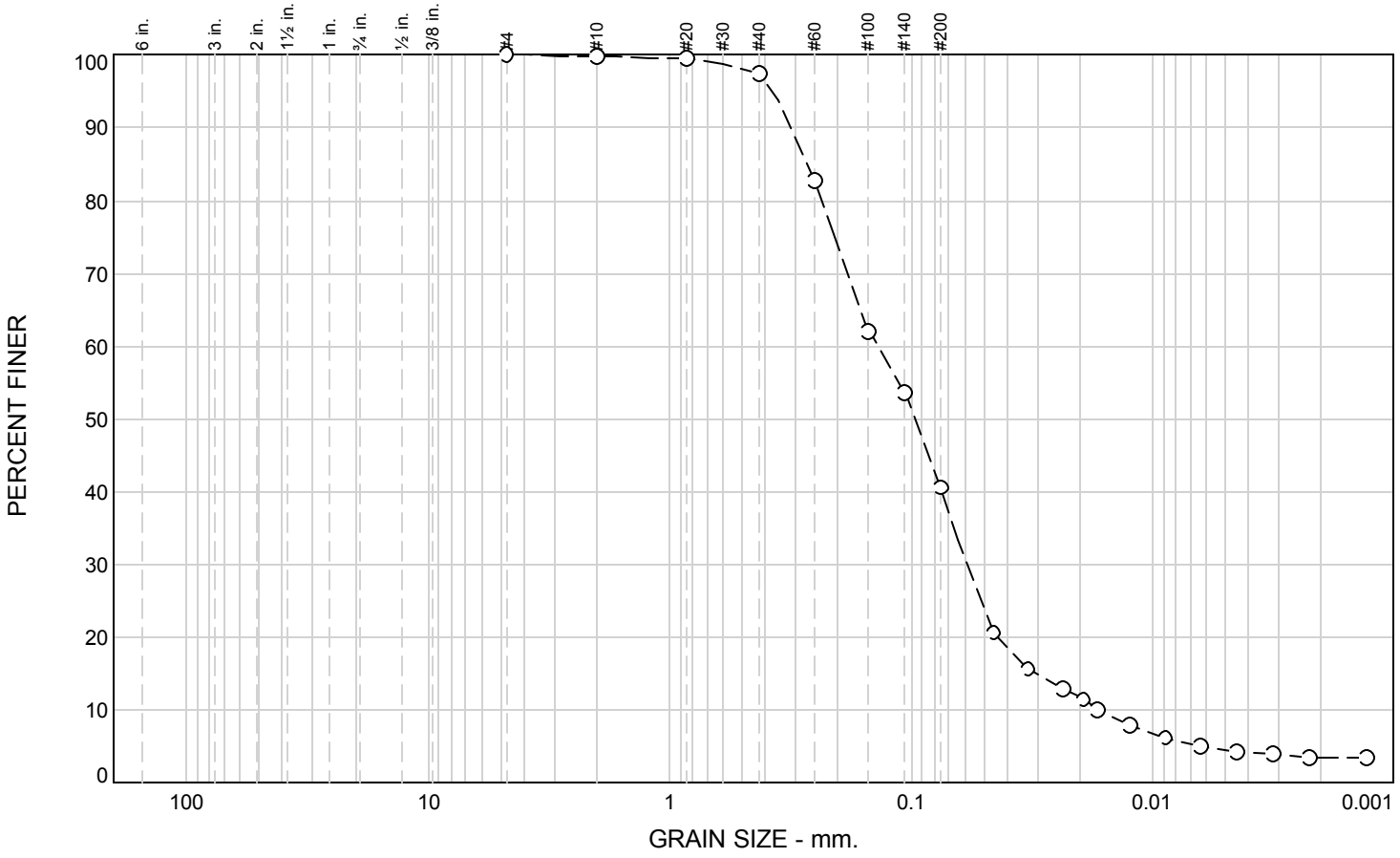
Remarks

Sample No.: 3-B-104 @ 29.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 29.0 feet

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.3	56.9	37.1	3.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	99.5		
#40	97.5		
#60	82.7		
#100	62.1		
#140	53.6		
#200	40.6		
0.0456 mm.	20.7		
0.0330 mm.	15.8		
0.0236 mm.	12.9		
0.0194 mm.	11.5		
0.0169 mm.	10.1		
0.0124 mm.	8.0		
0.0089 mm.	6.2		
0.0063 mm.	5.1		
0.0045 mm.	4.3		
0.0032 mm.	4.0		
0.0023 mm.	3.5		
0.0013 mm.	3.4		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.2652 D_{60}= 0.1388 D_{50}= 0.0946
D_{30}= 0.0592 D_{15}= 0.0304 D_{10}= 0.0167
C_u= 8.34 C_c= 1.52

Classification

USCS= SM AASHTO=

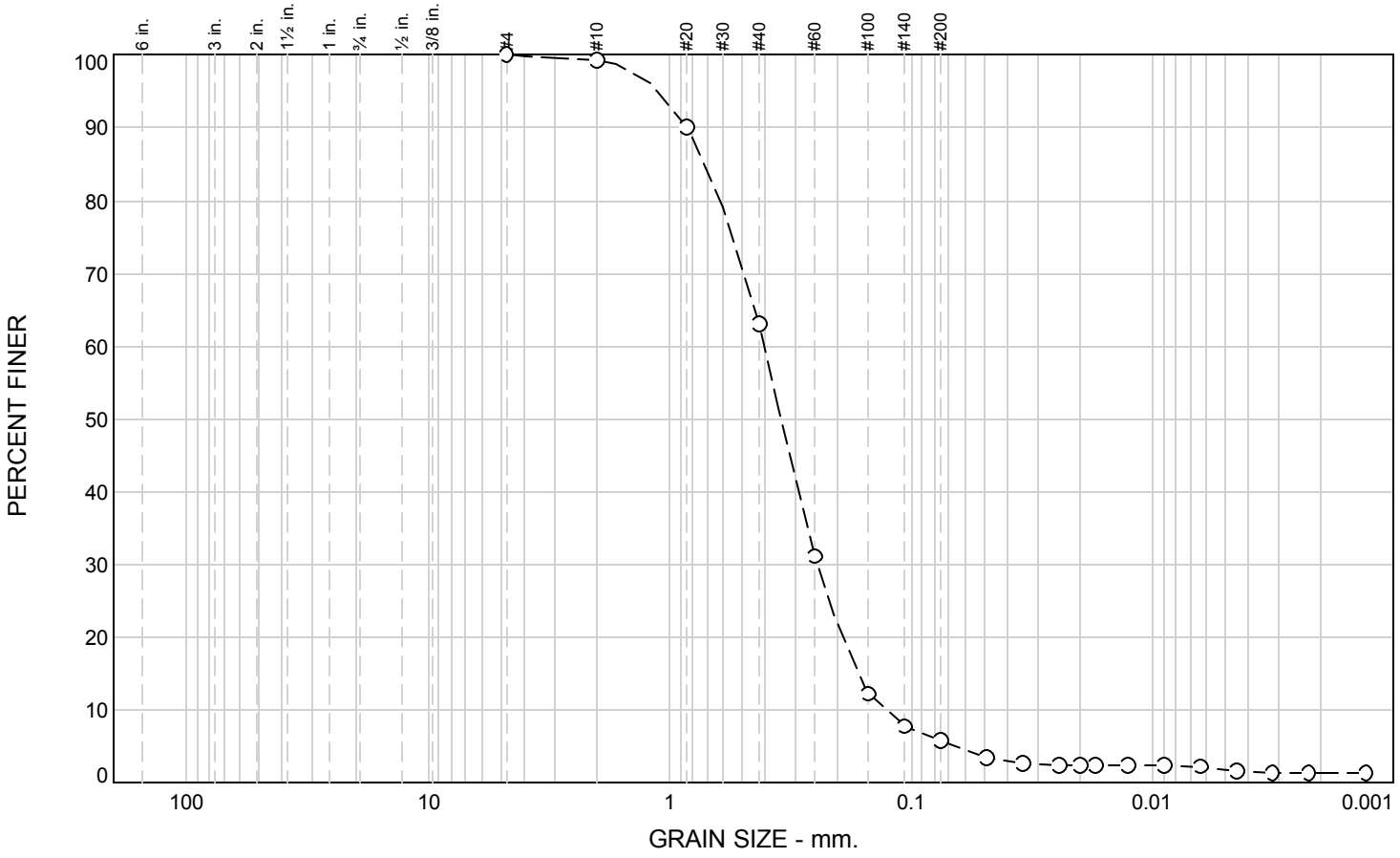
Remarks

Sample No.: 3-B-104 @ 35.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 35.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	36.4	57.2	4.4	1.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.4		
#20	90.1		
#40	63.0		
#60	31.2		
#100	12.3		
#140	7.9		
#200	5.8		
0.0488 mm.	3.5		
0.0347 mm.	2.7		
0.0245 mm.	2.5		
0.0200 mm.	2.5		
0.0173 mm.	2.5		
0.0127 mm.	2.5		
0.0090 mm.	2.4		
0.0063 mm.	2.3		
0.0045 mm.	1.7		
0.0032 mm.	1.4		
0.0023 mm.	1.4		
0.0013 mm.	1.3		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.7051 D_{60}= 0.4032 D_{50}= 0.3423
D_{30}= 0.2442 D_{15}= 0.1675 D_{10}= 0.1311
C_u= 3.08 C_c= 1.13

Classification

USCS= SP AASHTO=

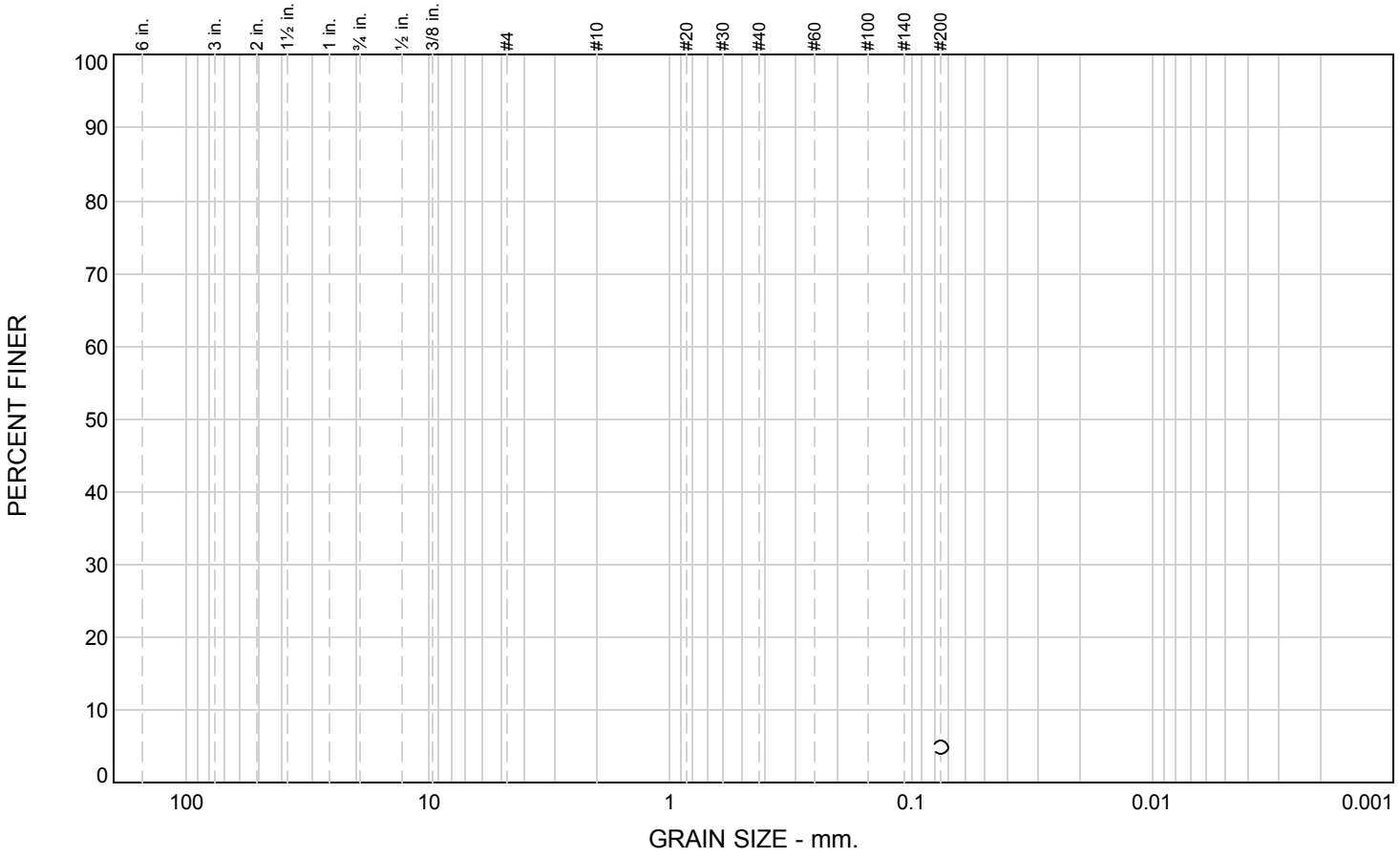
Remarks

Sample No.: 3-B-104 @ 41.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 41.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	5.0		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SP AASHTO=

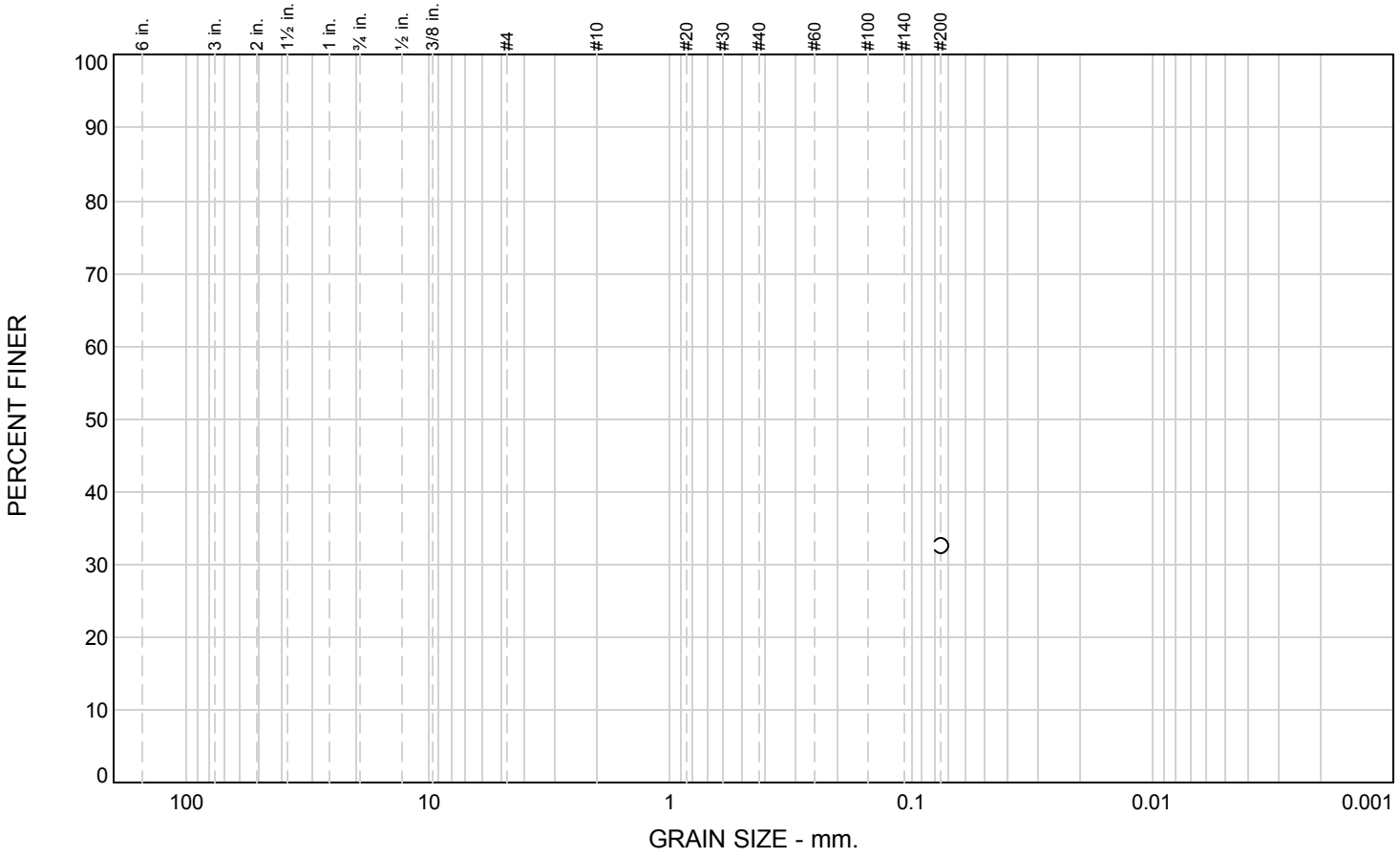
Remarks

Sample No.: 3-B-104 @ 61.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 61.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						32.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	32.7		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

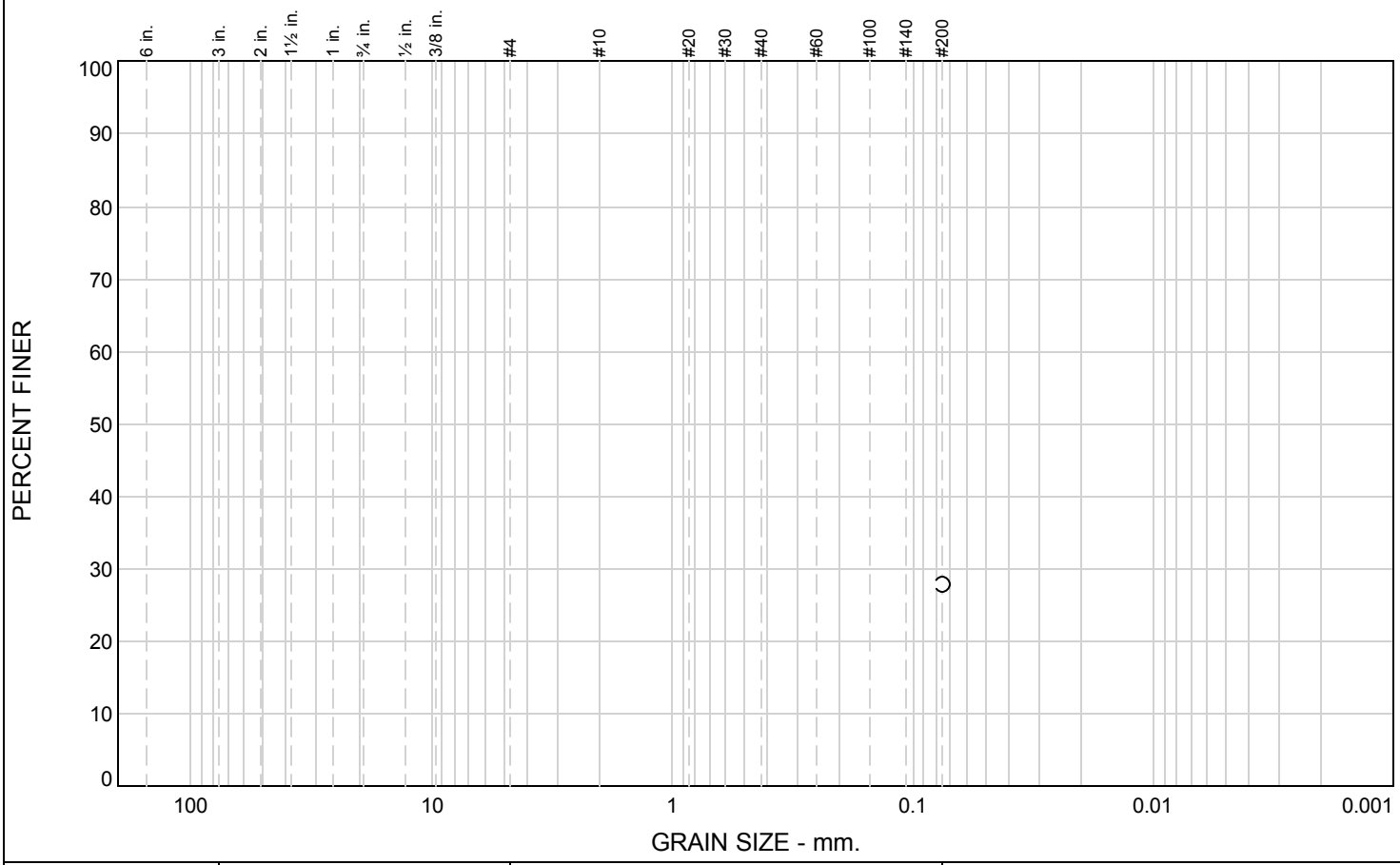
Remarks

Sample No.: 3-B-104 @ 112.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 112.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						27.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	27.8		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= 18 LL= 16 PI= NP

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

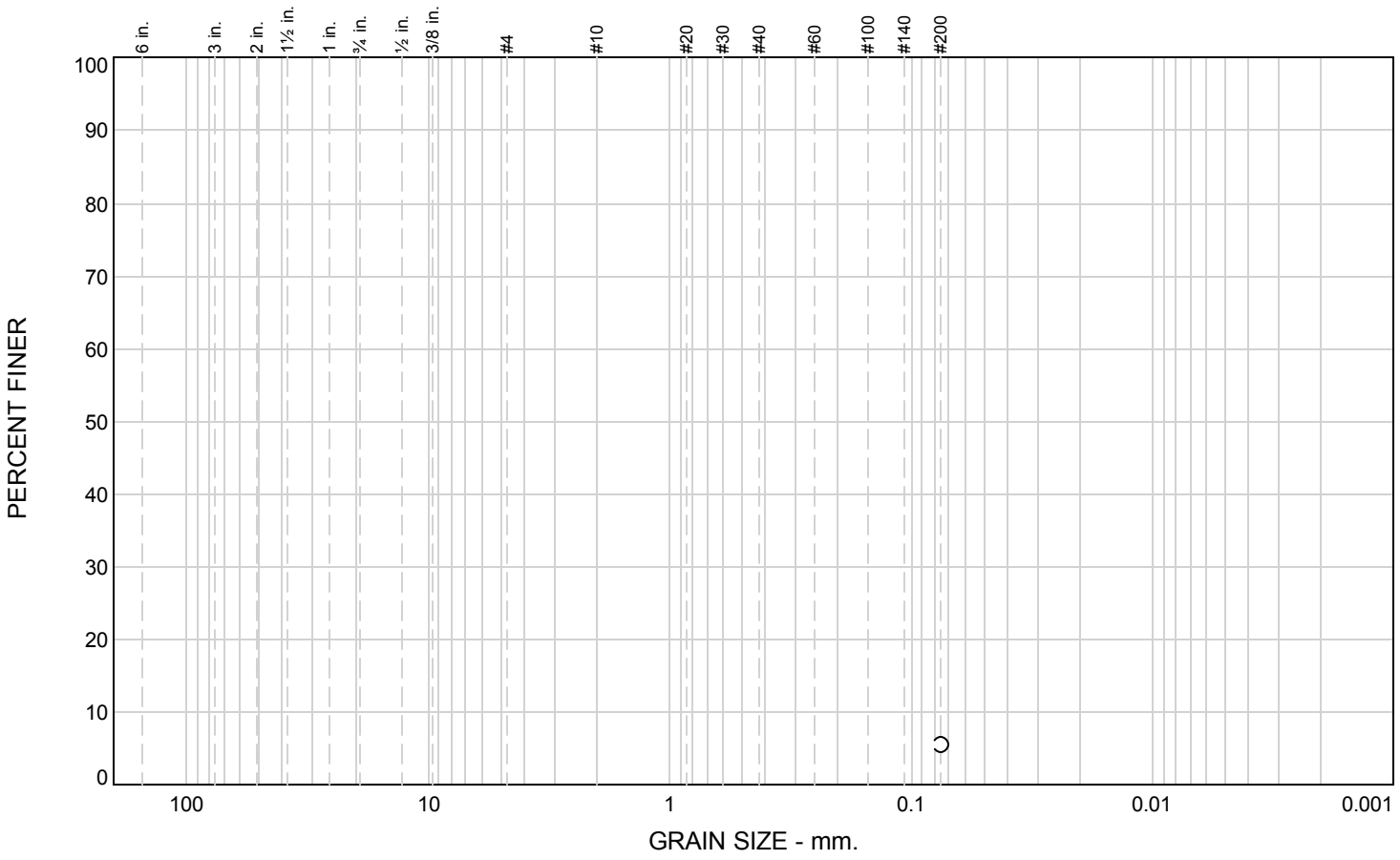
Remarks

Sample No.: B-B-105 @ 6.5' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 6.5 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	5.6		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

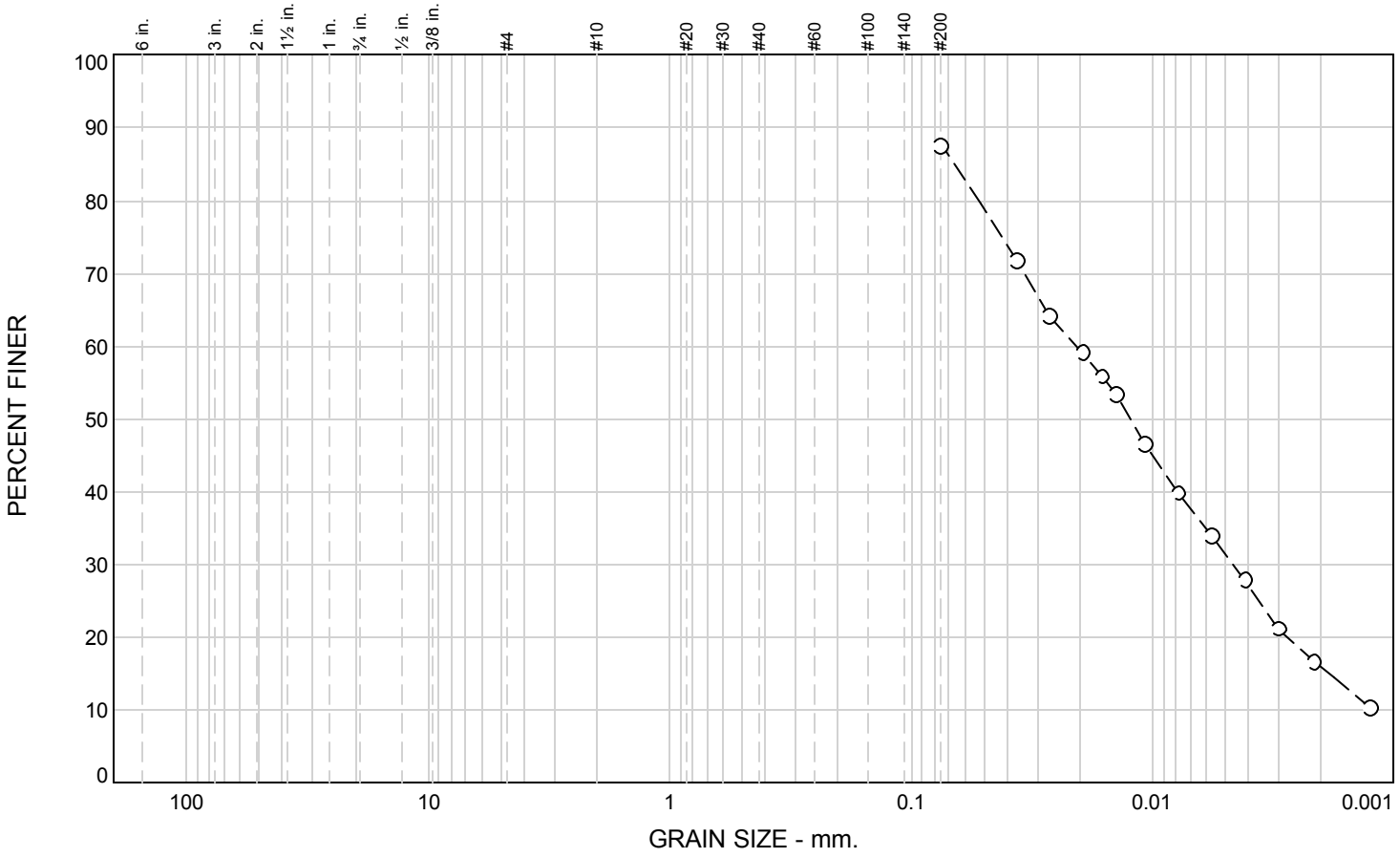
Remarks

Sample No.: B-B-105 @ 23.5' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 23.5 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						71.6	15.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	87.5		
0.0363 mm.	71.7		
0.0268 mm.	64.2		
0.0195 mm.	59.2		
0.0162 mm.	55.9		
0.0142 mm.	53.4		
0.0107 mm.	46.6		
0.0078 mm.	39.9		
0.0057 mm.	34.0		
0.0041 mm.	28.0		
0.0030 mm.	21.2		
0.0021 mm.	16.7		
0.0013 mm.	10.3		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= 22 LL= 25 PI= 3

Coefficients

D_{85}= 0.0661 D_{60}= 0.0205 D_{50}= 0.0123
D_{30}= 0.0046 D_{15}= 0.0019 D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

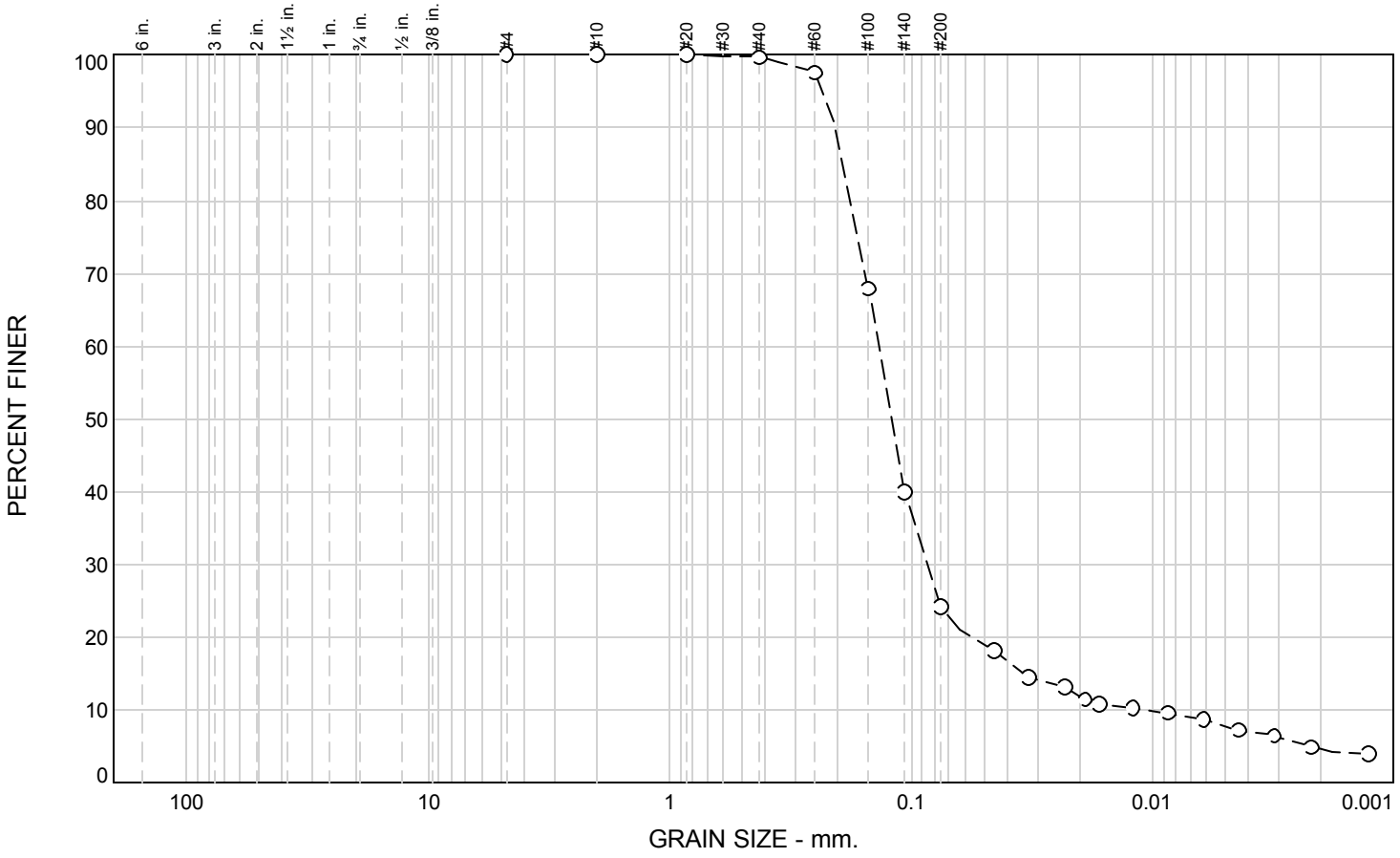
Remarks

Sample No.: B-B-105 @ 29.0' **Source of Sample:** GRN_SIZE **Date:** 08/29/08
Location: **Elev./Depth:**

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	75.5	19.6	4.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.7		
#60	97.6		
#100	67.9		
#140	39.9		
#200	24.2		
0.0451 mm.	18.3		
0.0325 mm.	14.6		
0.0231 mm.	13.2		
0.0191 mm.	11.5		
0.0166 mm.	10.9		
0.0121 mm.	10.3		
0.0086 mm.	9.7		
0.0062 mm.	8.7		
0.0044 mm.	7.3		
0.0031 mm.	6.5		
0.0022 mm.	5.0		
0.0013 mm.	4.0		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.1899 D_{60}= 0.1365 D_{50}= 0.1211
D_{30}= 0.0887 D_{15}= 0.0341 D_{10}= 0.0102
C_u= 13.32 C_c= 5.63

Classification

USCS= SM AASHTO=

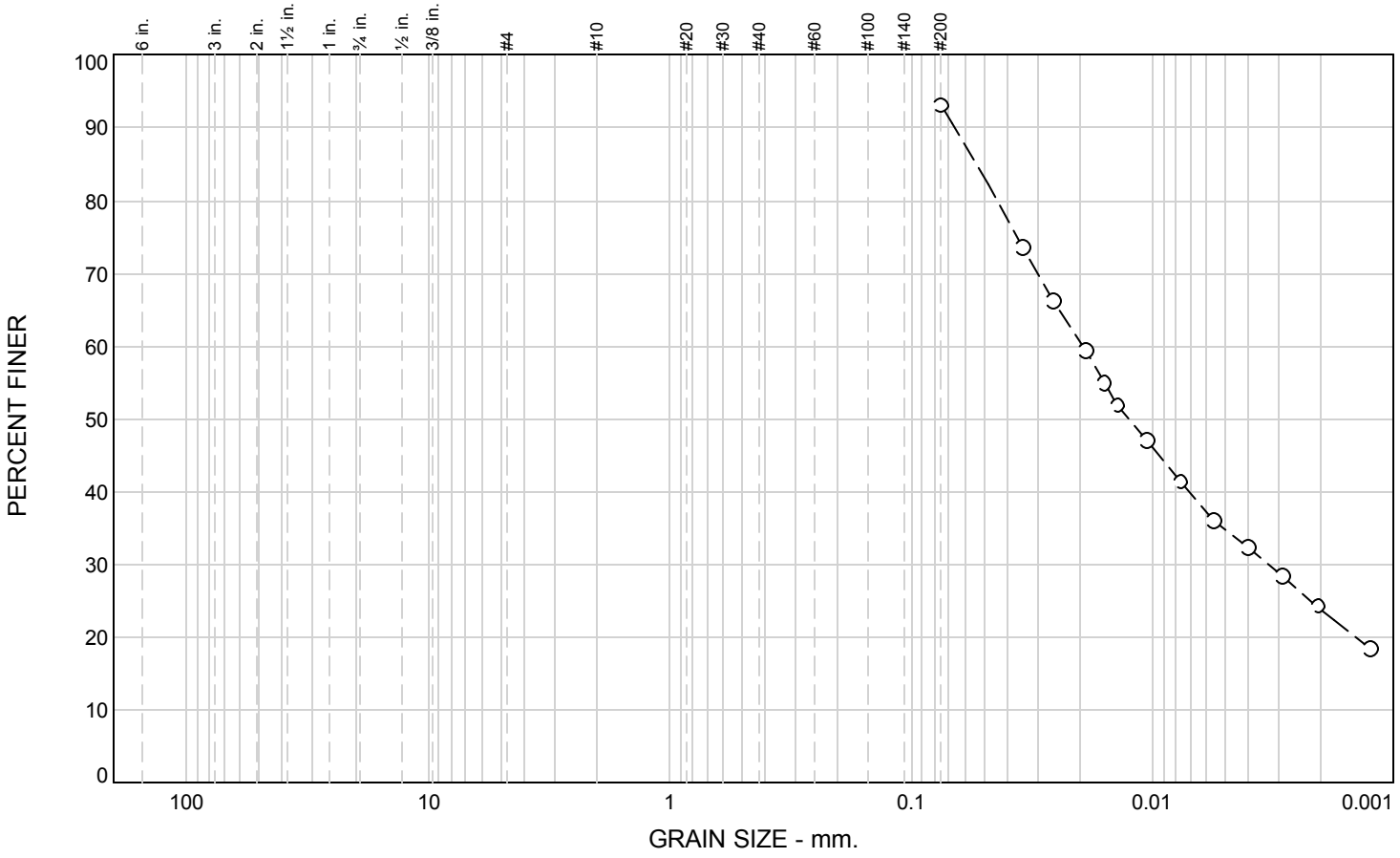
Remarks

Sample No.: B-B-105 @ 49.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 49.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						69.3	23.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	93.2		
0.0343 mm.	73.7		
0.0256 mm.	66.2		
0.0189 mm.	59.4		
0.0159 mm.	55.0		
0.0140 mm.	52.0		
0.0105 mm.	47.1		
0.0077 mm.	41.4		
0.0056 mm.	36.1		
0.0040 mm.	32.3		
0.0029 mm.	28.5		
0.0021 mm.	24.3		
0.0013 mm.	18.4		

* (no specification provided)

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0536 D_{60}= 0.0194 D_{50}= 0.0126
D_{30}= 0.0033 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

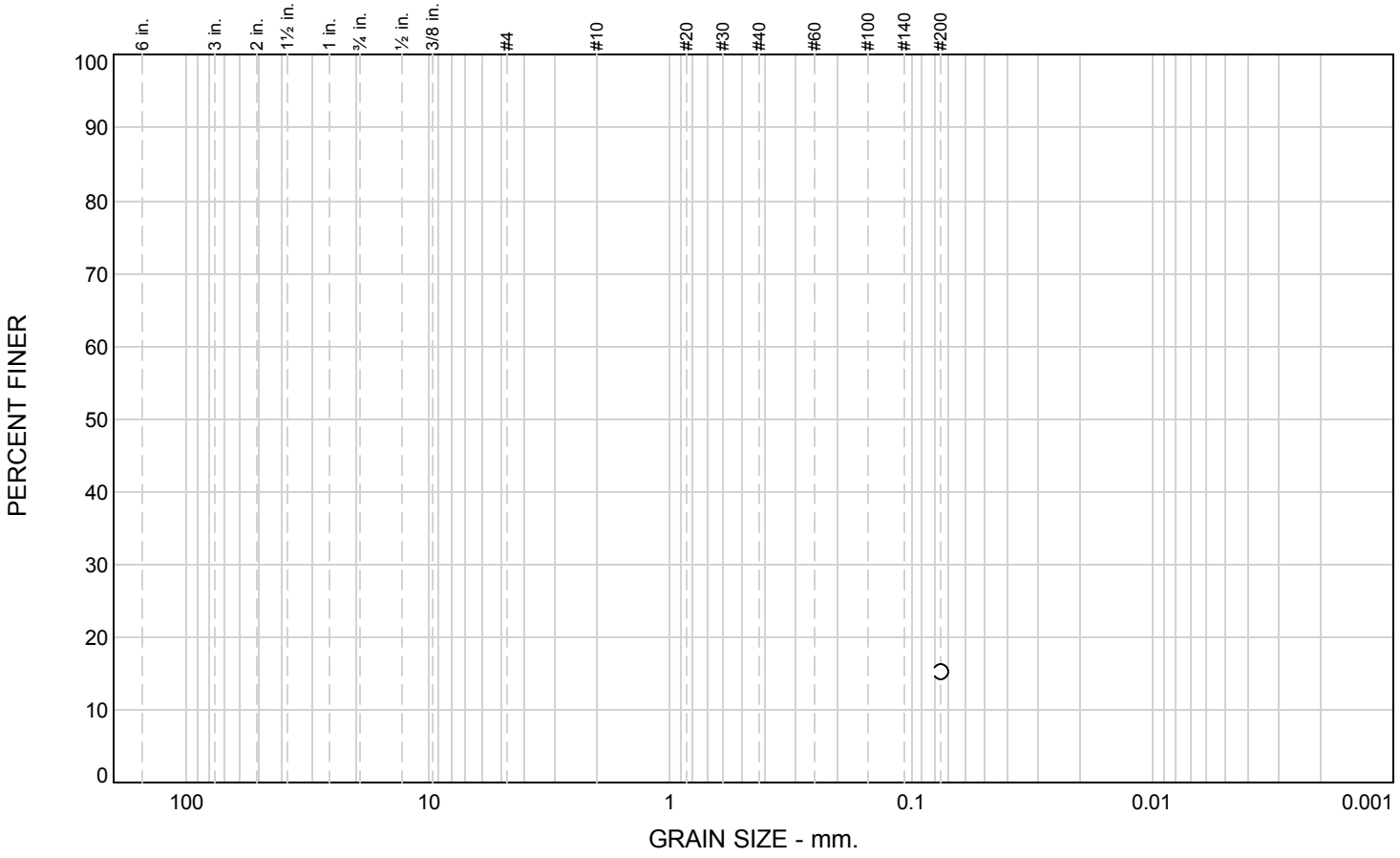
Remarks

Sample No.: B-B-105 @ 59.0' **Source of Sample:** GRN_SIZE **Date:** 08/29/08
Location: **Elev./Depth:** 59.0 feet

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						15.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	15.4		

Soil Description

See exploratory boring log.

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

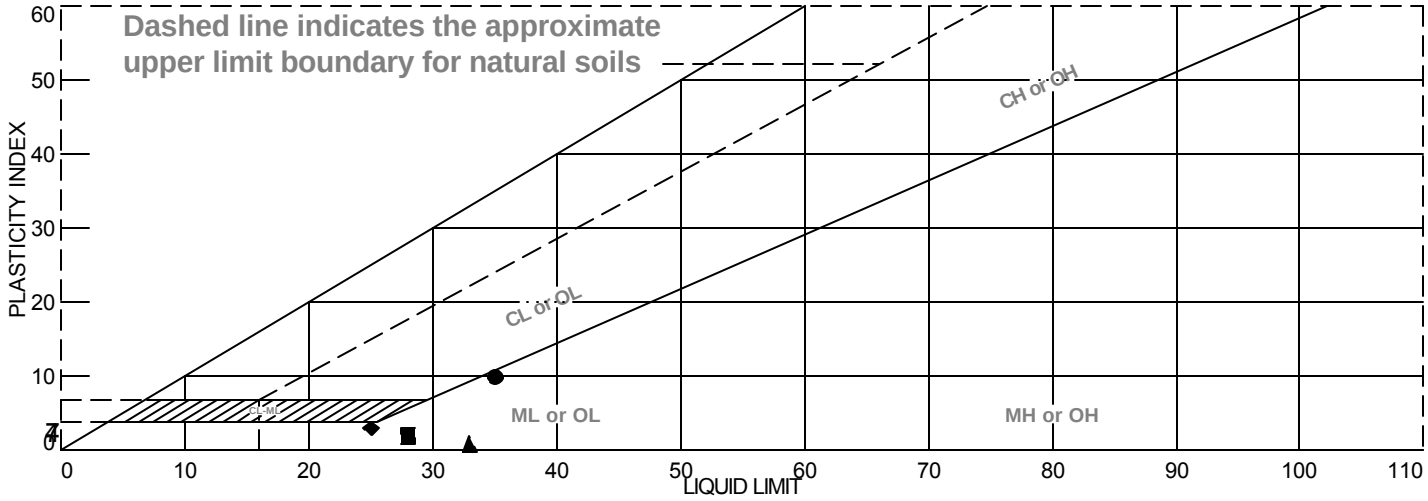
* (no specification provided)

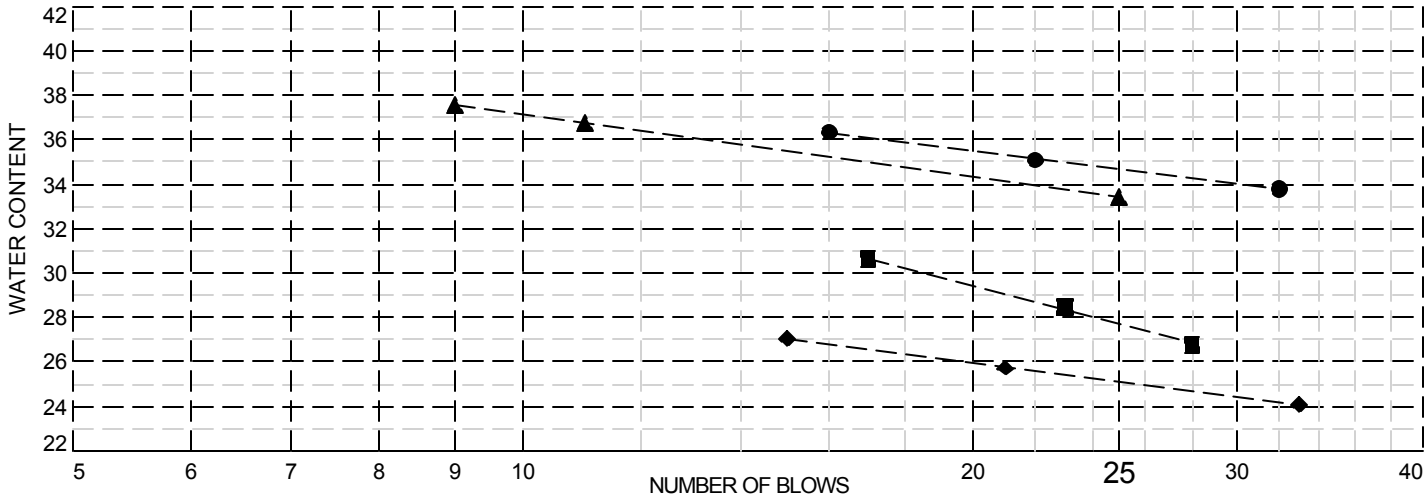
Sample No.: B-B-105 @ 69.0' **Source of Sample:** GRN_SIZE **Date:** 08/28/08
Location: **Elev./Depth:** 69.0 feet

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Trails of Manteca. Manteca, CA.
Project No: 8188.001.000

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	See exploratory boring logs.	35	25	10		92.9	ML
■	See exploratory boring logs.	28	26	2		98.1	ML
▲	See exploratory boring logs.	33	32	1			ML
◆	See exploratory boring logs.	25	22	3		87.5	ML

Project No. 8188.001.000 **Client:**

Project: Trails of Manteca. Manteca, CA.

Remarks:

● **Source of Sample:** GRN_SIZE **Sample Number:** 3-B-103 @ 20.0'

■ **Sample Source:** GRN_SIZE **Depth:** 29.0 feet **Sample No.:** 3-B-104 @ 29.0'

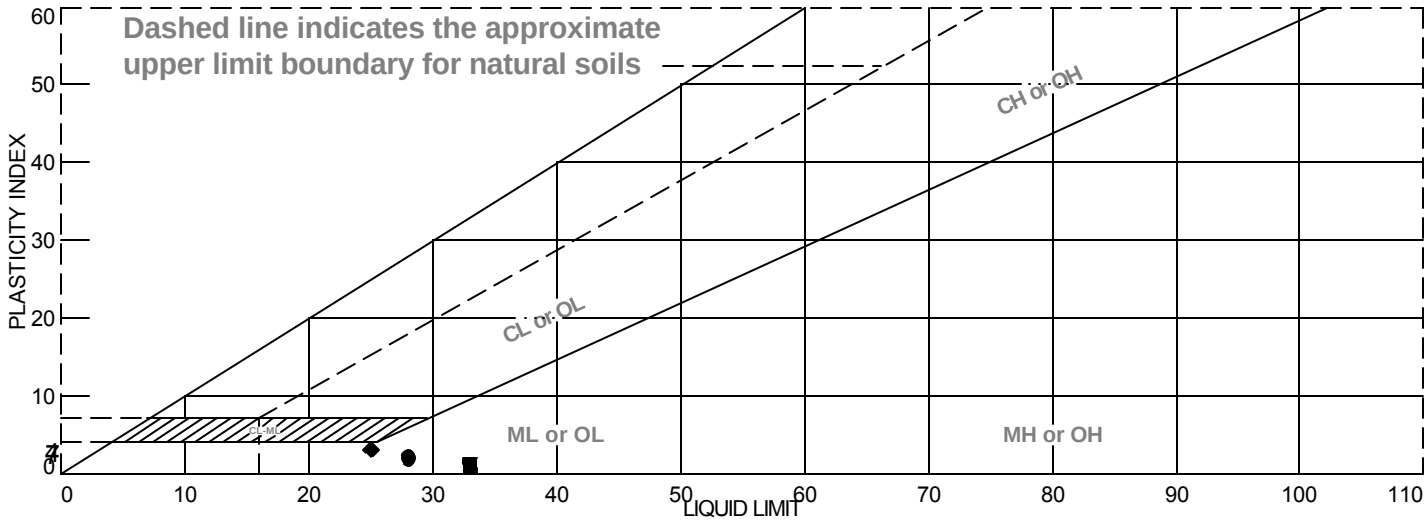
▲ **Sample Source:** GRN_SIZE **Depth:** 11.5 feet **Sample No.:** B-B-105 @ 11.5'

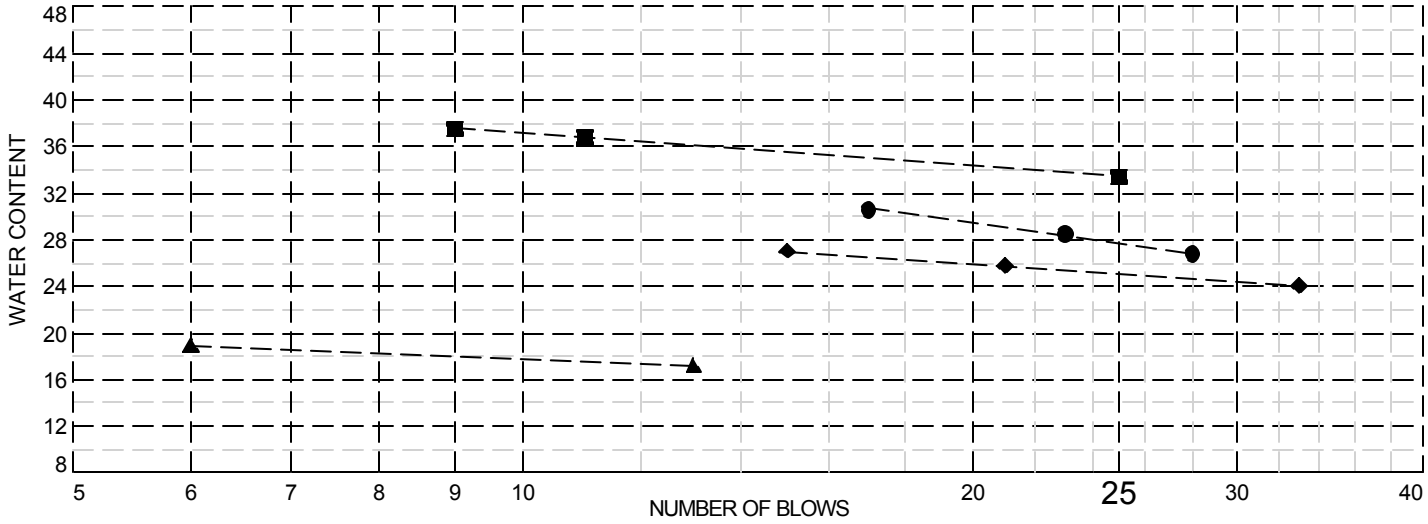
◆ **Source of Sample:** GRN_SIZE **Sample Number:** B-B-105 @ 29.0'

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Tested By: RC **Checked By:** GC

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	See exploratory boring log.	28	26	2		98.1	ML
■	See exploratory boring log.	33	32	1			ML
▲	See exploratory boring log.	16	18	NP		27.8	SM
◆	See exploratory bring log.	25	22	3		87.5	ML

Project No. 8188.001.000 **Client:**

Project: Trails of Manteca. Manteca, CA.

● **Sample Source:** GRN_SIZE **Depth:** 29.0 feet **Sample No.:** 3-B-104 @ 29.0'

■ **Sample Source:** GRN_SIZE **Depth:** 11.5 feet **Sample No.:** B-B-105 @ 11.5'

▲ **Sample Source:** GRN_SIZE **Depth:** 6.5 feet **Sample No.:** B-B-105 @ 6.5'

◆ **Source of Sample:** GRN_SIZE **Sample Number:** B-B-105 @ 29.0'

Remarks:

ENGEO INCORPORATED GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Unconsolidated Undrained Triaxial Test (ASTM D2850)

ENGEO INCORPORATED

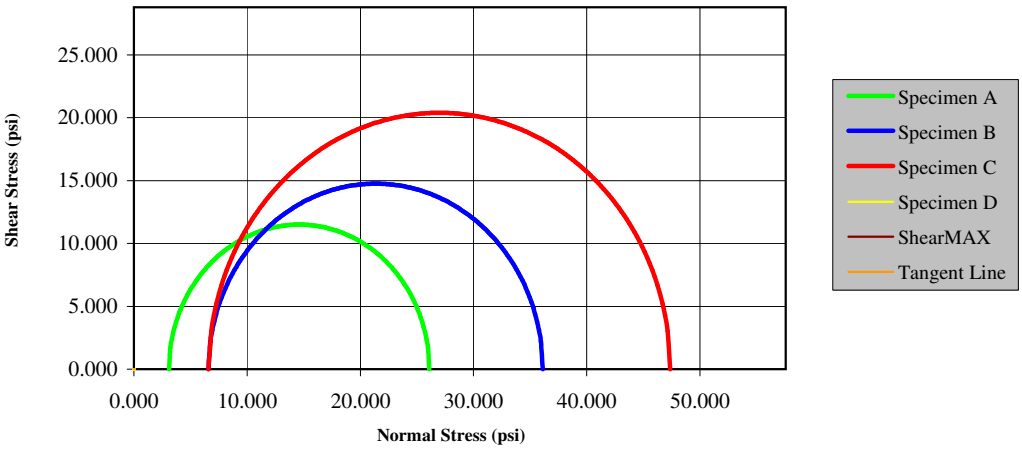
Date: 08/12/08

Checked By: RC

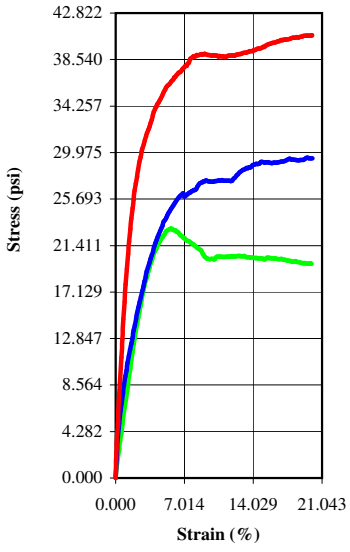
Date: 8/12/2008

Tested By: DS

Mohr Circles



Stress-Strain Curve



Before Test	Specimen A	B	C	D
Water Content (%)	17.65	27.38	17.65	0.00
Dry Density (pcf)	105.18	89.25	106.36	0.00
Saturation (%)	81.65	85.00	84.21	0.00
Void Ratio	0.57	0.85	0.56	0.00
Diameter (in)	2.420	2.420	2.420	0.000
Height (in)	4.900	4.600	4.900	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.650	2.650	2.650	
After Test	**A**	**B**	**C**	**D**
Water Content (%)	0.00	27.38	17.65	0.00
Test Data	**A**	**B**	**C**	**D**
Strain Rate (in/min)	0.02	0.02	0.02	0.00
Peak Deviator Stress (psi)	22.999	29.515	40.783	0.000
Axial Strain @ Failure (%)	5.633	19.478	20.041	0.000
	Cell Pressure			
Cell (psi)	3.1	6.6	6.6	0.0
Back (psi)	n/a	n/a	n/a	n/a
	Principle Stresses at Failure			
σ1 (psi)	26.1	36.1	47.4	0.0
σ3 (psi)	3.1	6.6	6.6	0.0

Mohr-Coulomb Strength Parameters	
C (psi)	0.0
Friction Angle Ø	0.00

Sample Description

Project Information	Trails of Manteca		
Job Number:	8188.001.000		
Location:	Manteca, California	Boring Number:	103
Client:		Sample Number:	16', 19.5', 20'

Remarks:

APPENDIX D

Seepage Analysis



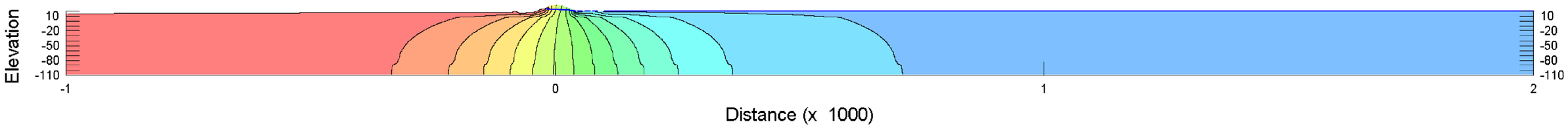
Seepage Analysis: Existing Conditions

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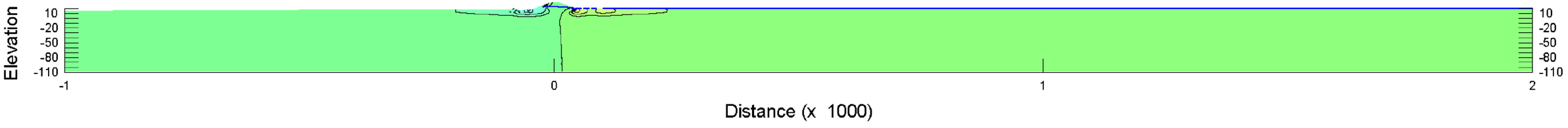
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

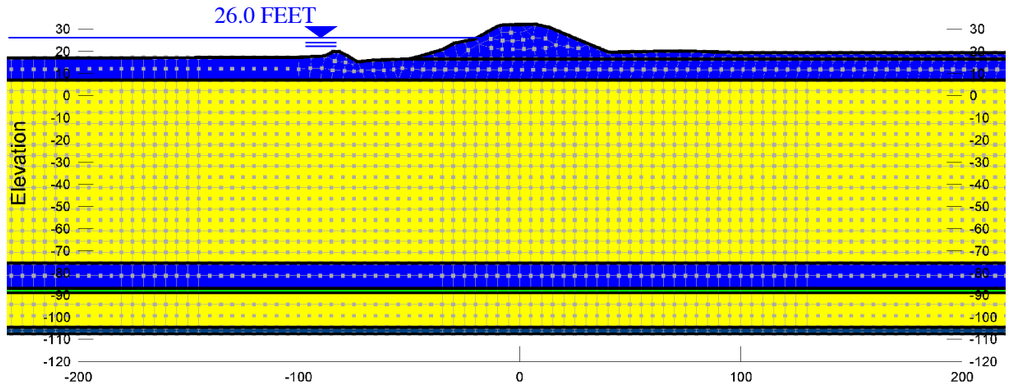
REACH A
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

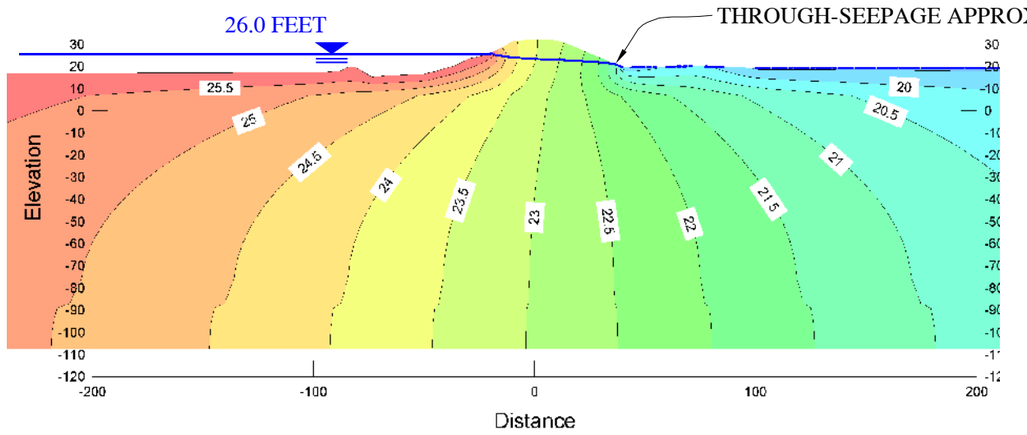
FIGURE NO.
A-1

ORIGINAL FIGURE PRINTED IN COLOR

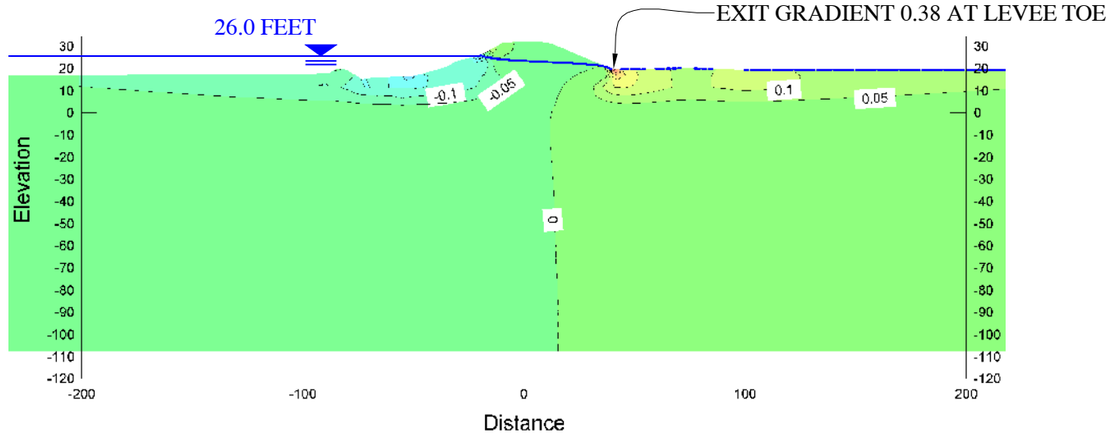
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SEEP/W MODEL (MESH)



TOTAL HEAD



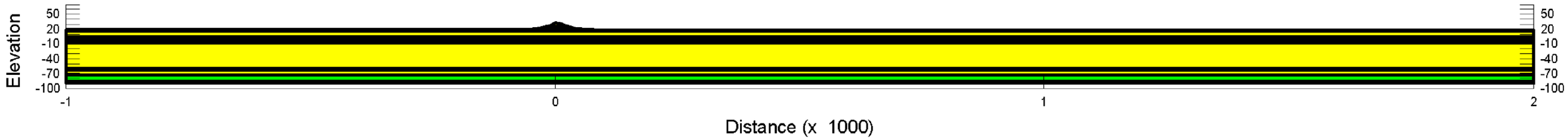
Y-GRADIENT

NO SCALE

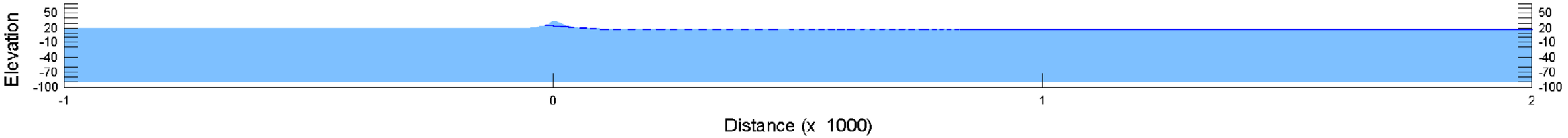
ENGEO INCORPORATED EXCELLENT SERVICE SINCE 1971	REACH A THE TRAILS OF MANTECA SAN JOAQUIN COUNTY, CALIFORNIA	PROJECT NO.: 8188.001.000	FIGURE NO. A-2
		DATE: MARCH 2009	
		DRAWN BY: MES / CHECKED BY: JJT	

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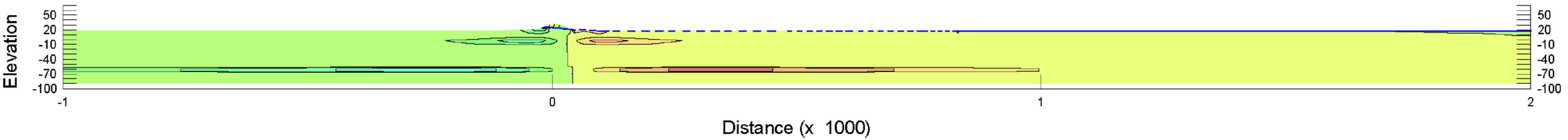
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	32.02 TO 14.5	SP	10	0.25
	14.5 TO 4	SP	17.8	0.25
	4 TO -2	ML	0.57	1
	-2 TO -8	SM	1.2	0.25
	-8 TO -59	SP	10	0.25
	-59 TO -64	CL	0.028	0.1
	-64 TO -73	SP	10	0.25
	-73 TO -86	SM	1.2	0.25
	-86 TO -89.5	CL	0.028	0.1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

REACH B
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

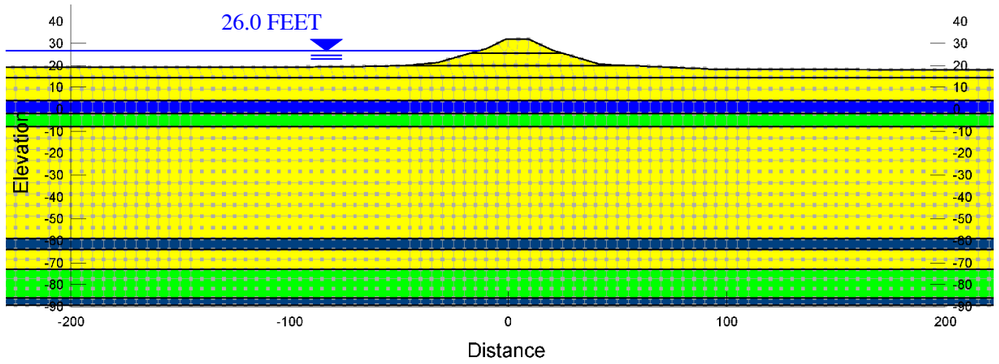
PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

FIGURE NO.
B-1

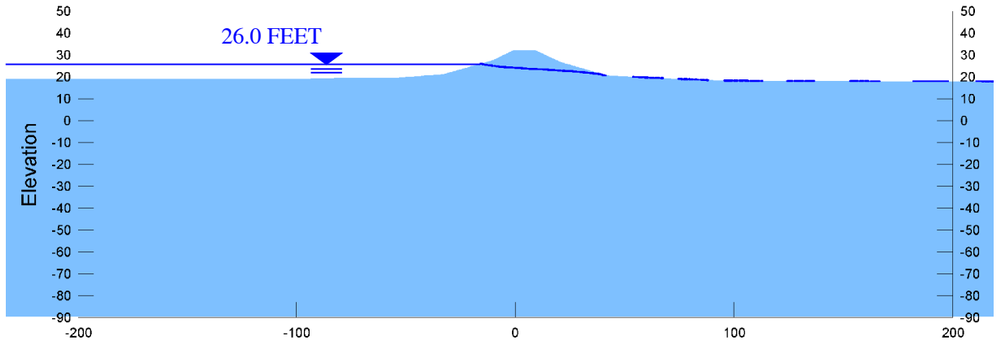
ORIGINAL FIGURE PRINTED IN COLOR

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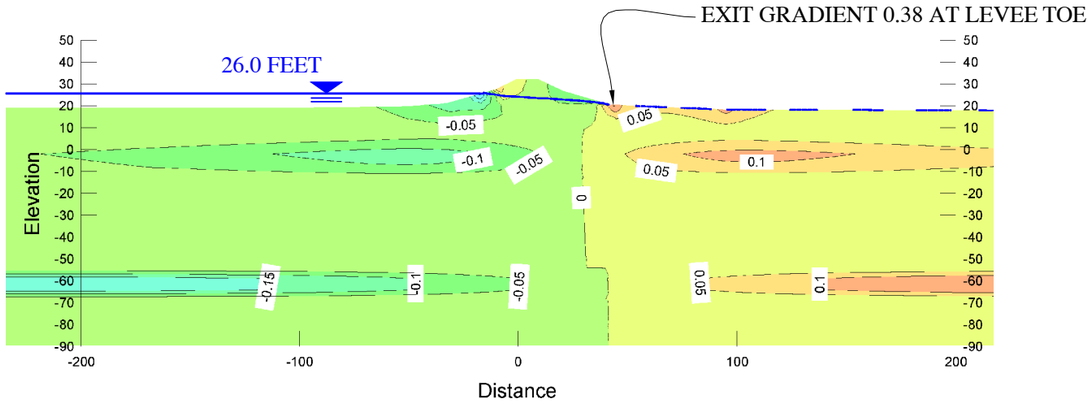
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

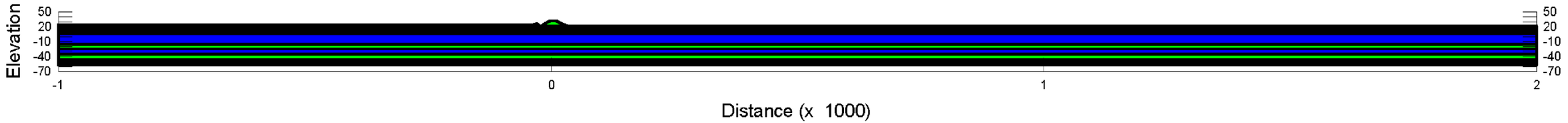
REACH B
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000		FIGURE NO. B-2
DATE: MARCH 2009		
DRAWN BY: MES	CHECKED BY: JJT	

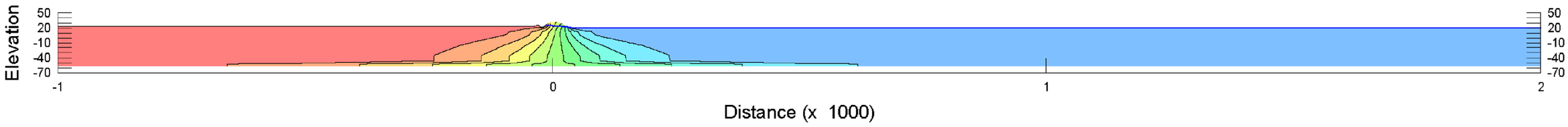
ORIGINAL FIGURE PRINTED IN COLOR

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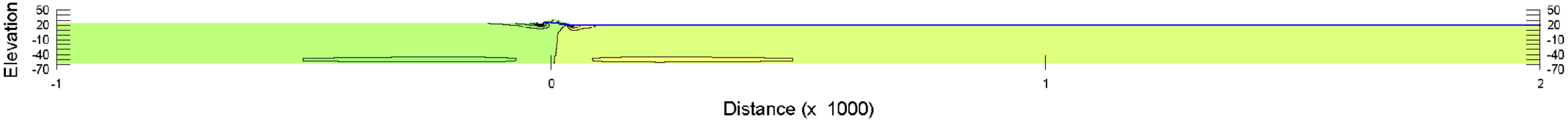
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	31.93 TO 21	SM	1.3	0.25
	21 TO 19	ML	0.57	1
	19 TO 12	SM	3.0	0.25
	12 TO 6	SP	10	0.25
	6 TO -16	ML	0.57	1
	-16 TO -25	SM	2.8	0.25
	-25 TO -35	ML	0.57	1
	--35 TO -46.5	SM	14	0.25
	-46.5 TO -53	CL	0.028	0.1
	-53 TO -57.5	SP	10	0.25



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

REACH C
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

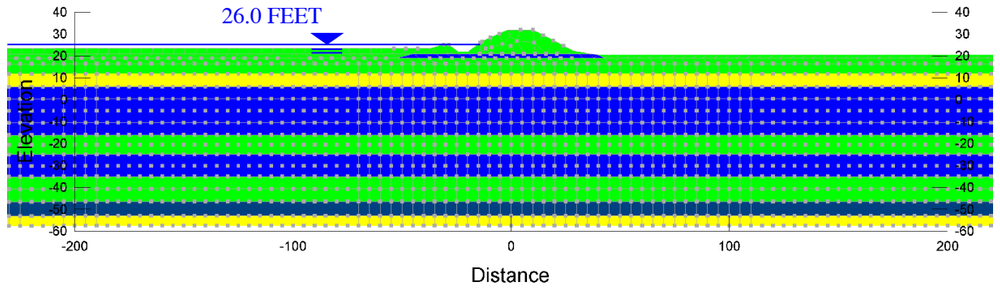
PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

FIGURE NO.
C-1

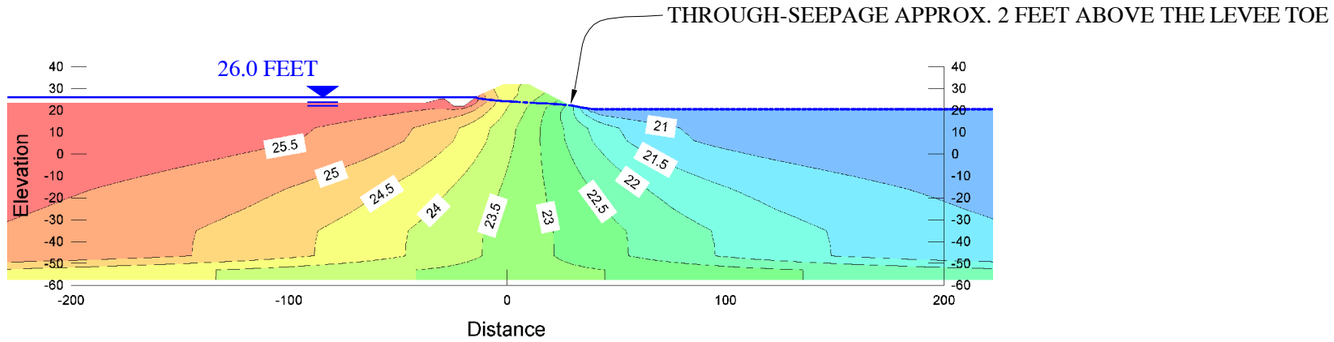
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ORIGINAL FIGURE PRINTED IN COLOR

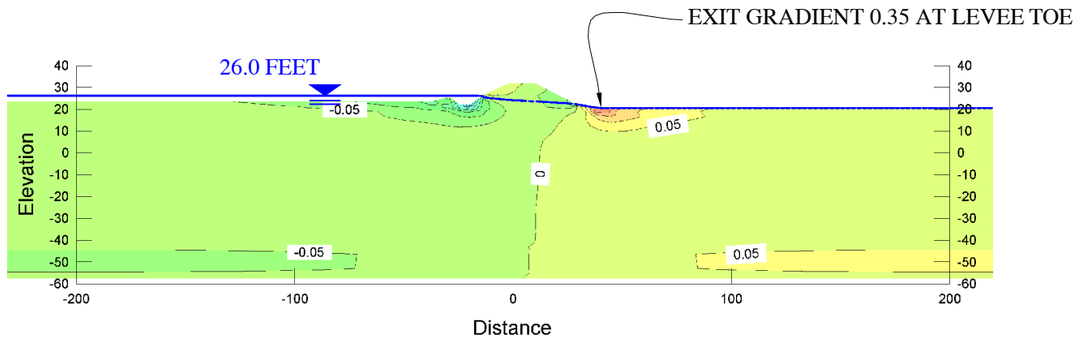
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

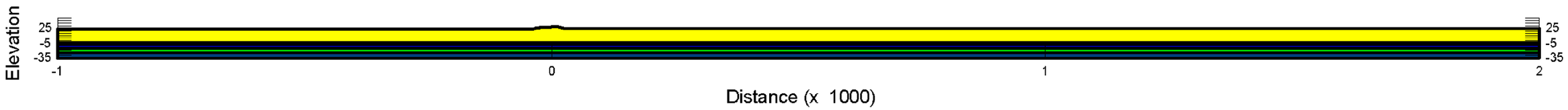
REACH C
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000			FIGURE NO. C-2
DATE: MARCH 2009			
DRAWN BY: MES	CHECKED BY: JJT		

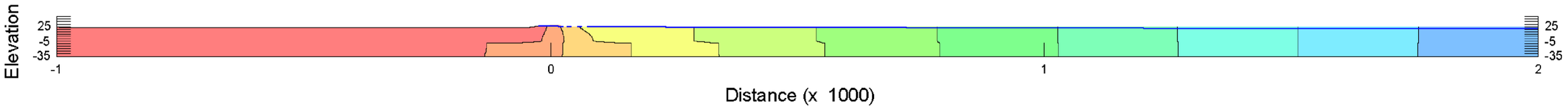
ORIGINAL FIGURE PRINTED IN COLOR

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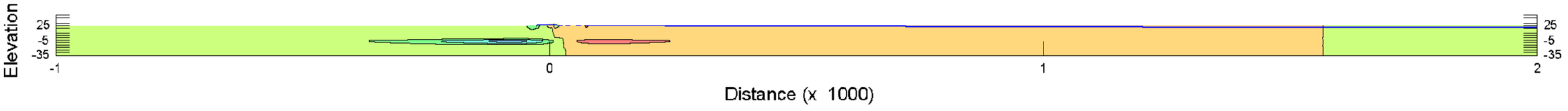
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	27.19 TO -5	SP & SM	10	0.25
	-5 TO -9	CL	0.028	0.1
	-9 TO -16	ML	0.57	1
	-16 TO -25	SM	2.8	0.25
	-25 TO -35	CL	0.028	0.1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

REACH D
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

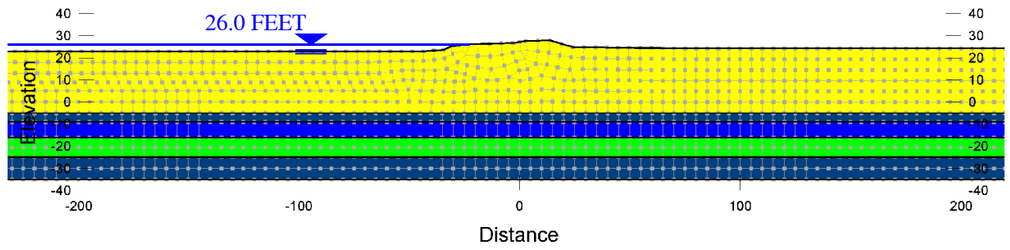
PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

FIGURE NO.
D-1

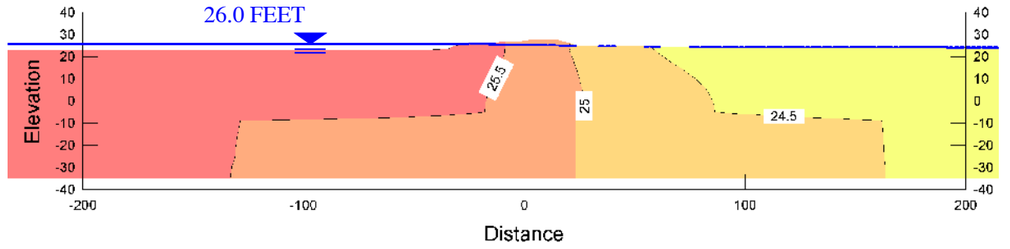
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ORIGINAL FIGURE PRINTED IN COLOR

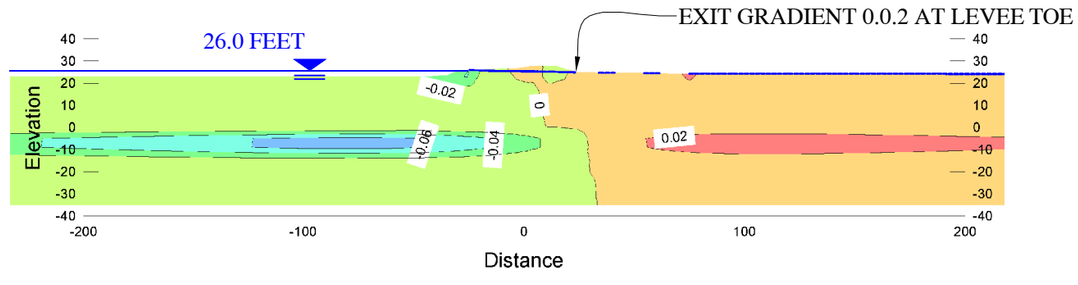
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

REACH D
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

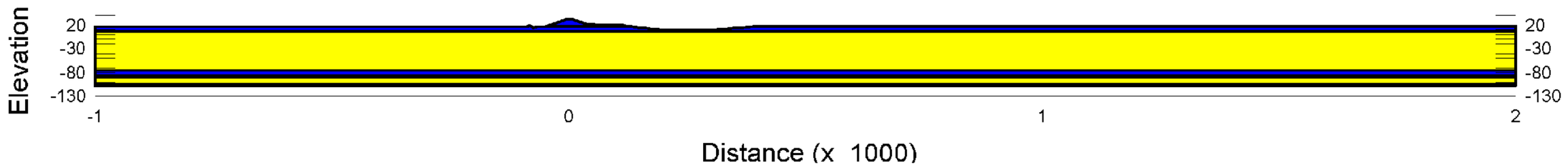
PROJECT NO.: 8188.001.000			FIGURE NO. D-2
DATE: MARCH 2009			
DRAWN BY: MES	CHECKED BY: JJT		

ORIGINAL FIGURE PRINTED IN COLOR

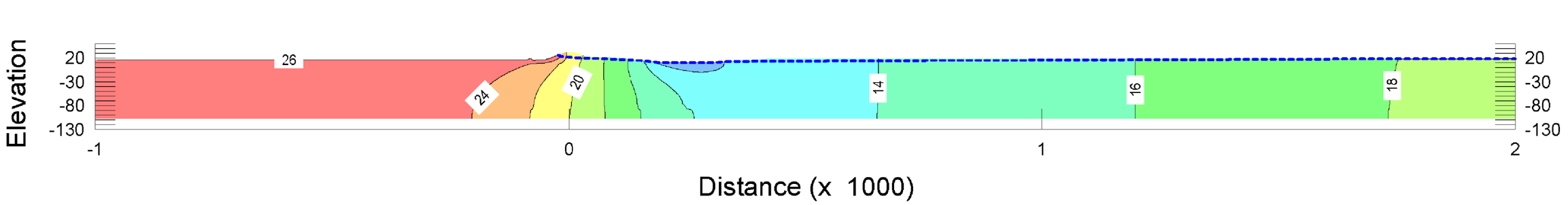
Seepage Analysis: Post-Construction

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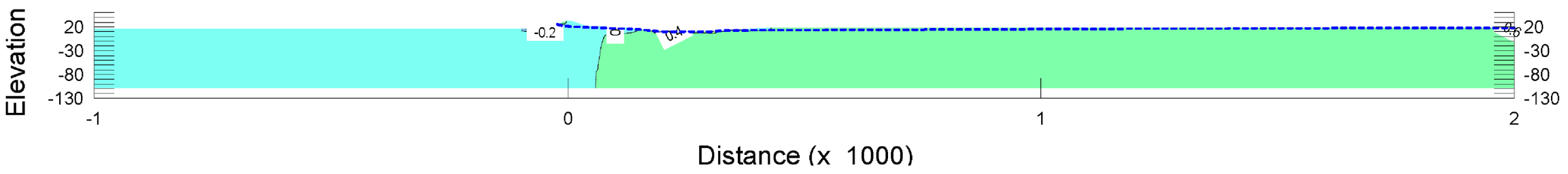
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

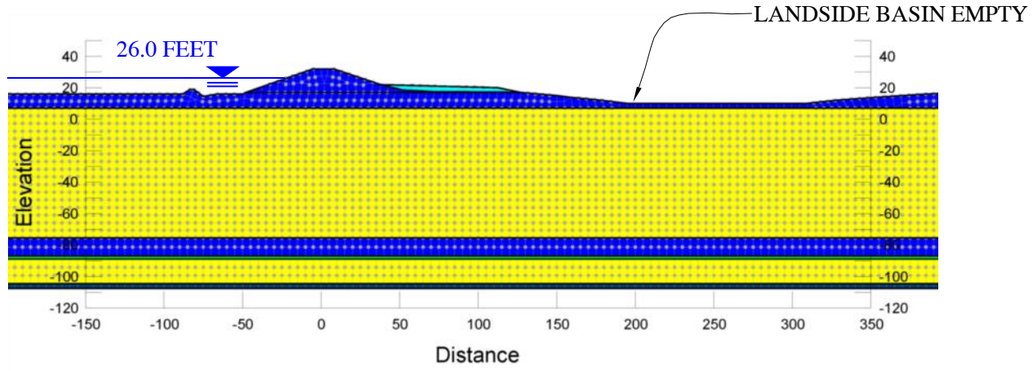
ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 856+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

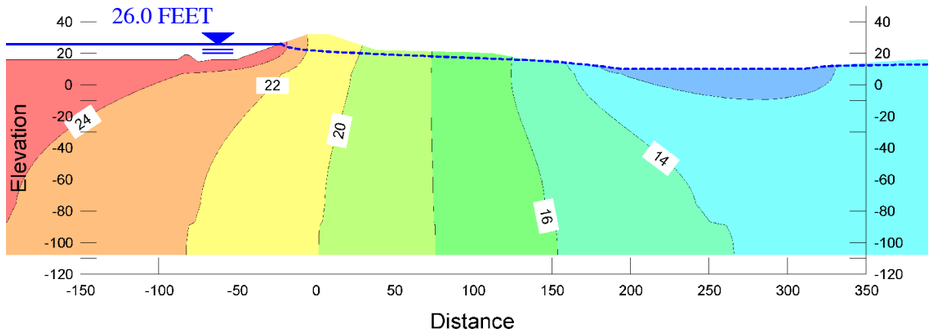
PROJECT NO.: 8188.001.000			FIGURE NO. A-3
DATE: MARCH 2009			
DRAWN BY: MES	CHECKED BY: JJT		

ORIGINAL FIGURE PRINTED IN COLOR

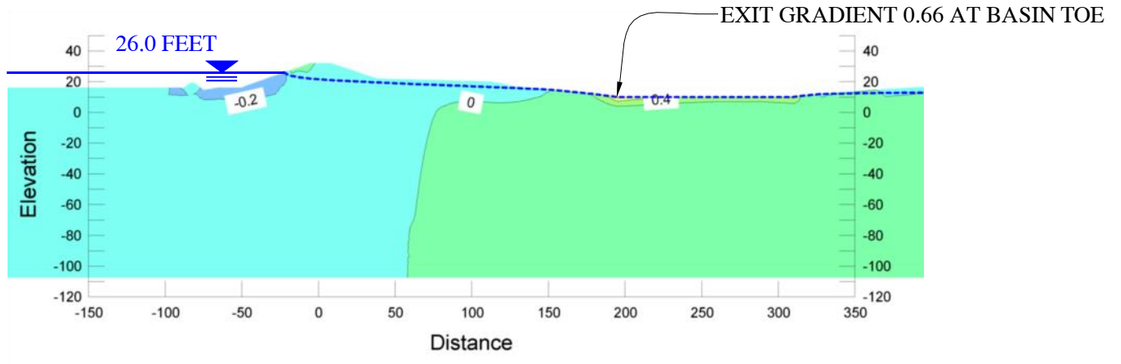
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

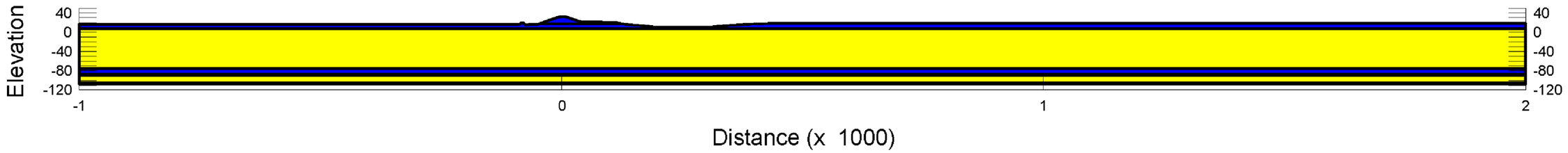
STA 856+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000		FIGURE NO. A-4
DATE: MARCH 2009		
DRAWN BY: MES	CHECKED BY: JJT	

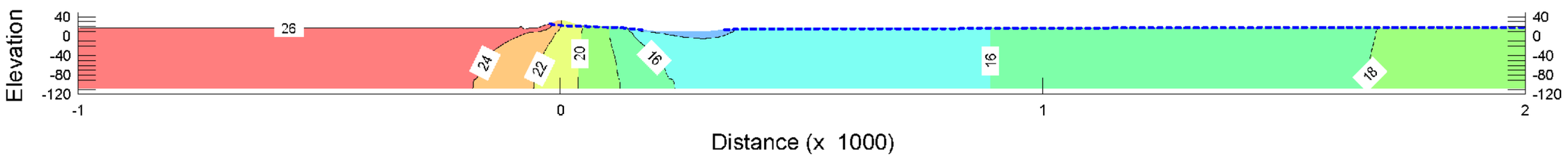
ORIGINAL FIGURE PRINTED IN COLOR

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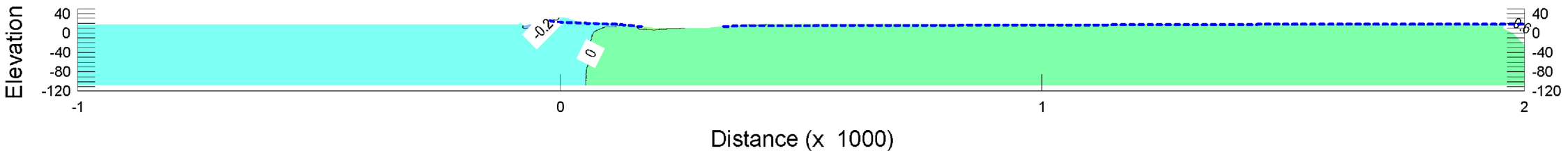
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

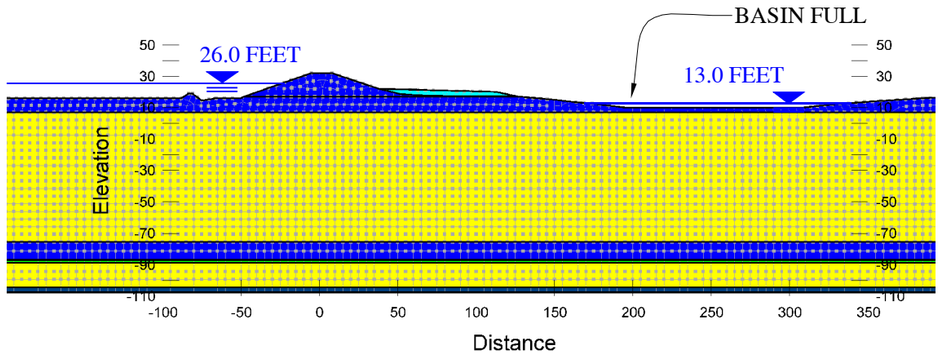
STA 856+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

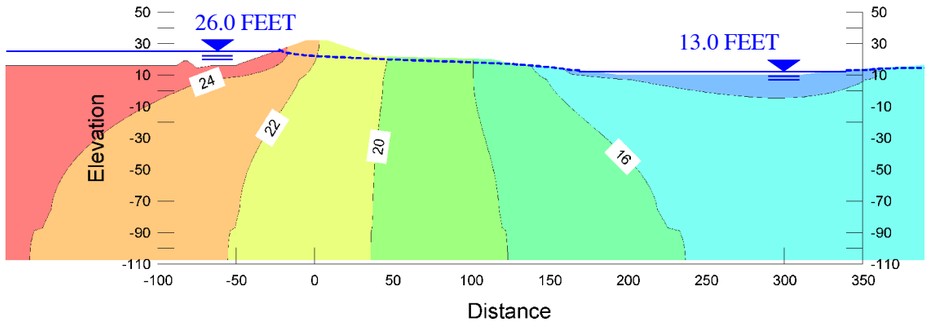
FIGURE NO. A-5

ORIGINAL FIGURE PRINTED IN COLOR

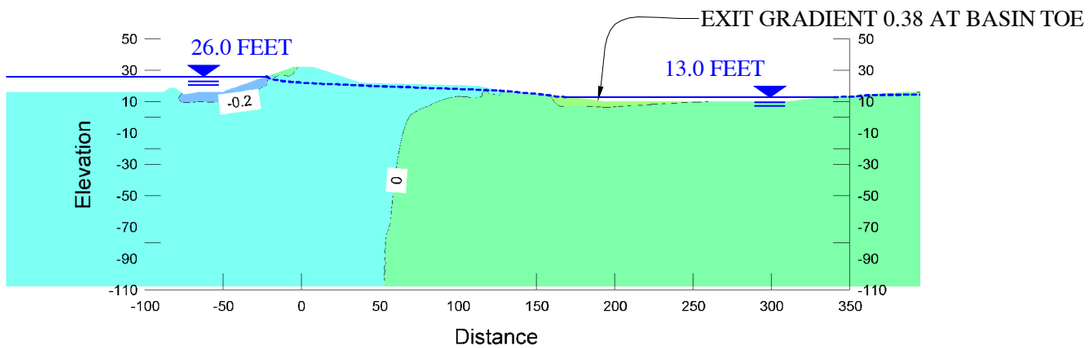
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

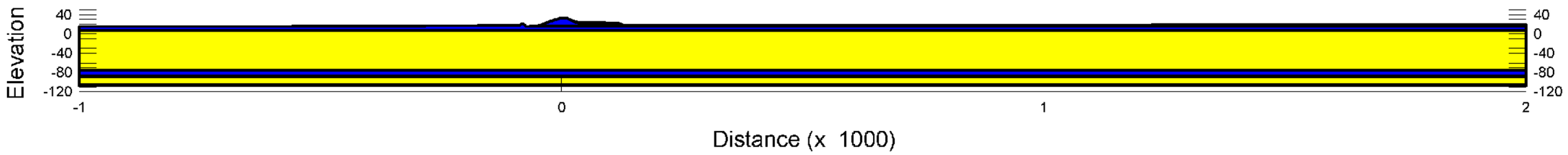
STA 856+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000		FIGURE NO. A-6
DATE: MARCH 2009		
DRAWN BY: MES	CHECKED BY: JJT	

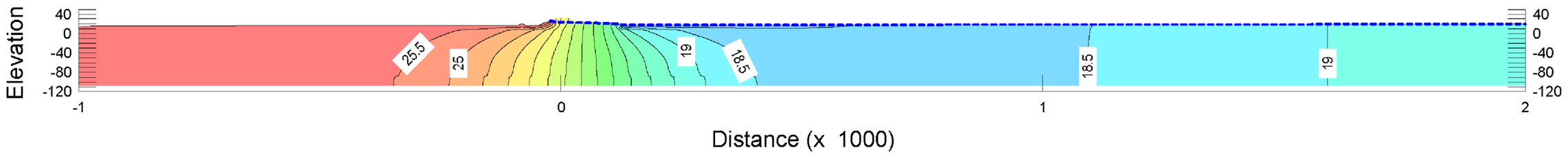
ORIGINAL FIGURE PRINTED IN COLOR

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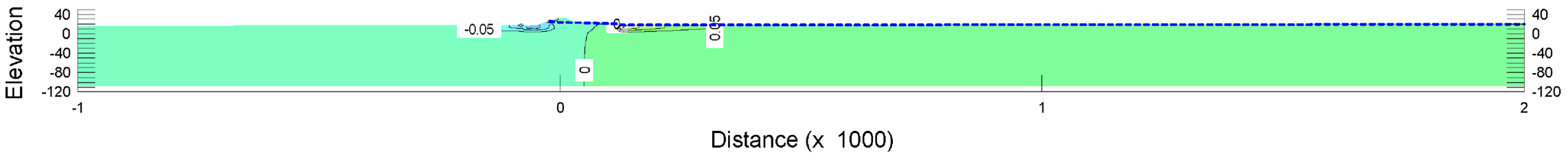
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 868+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

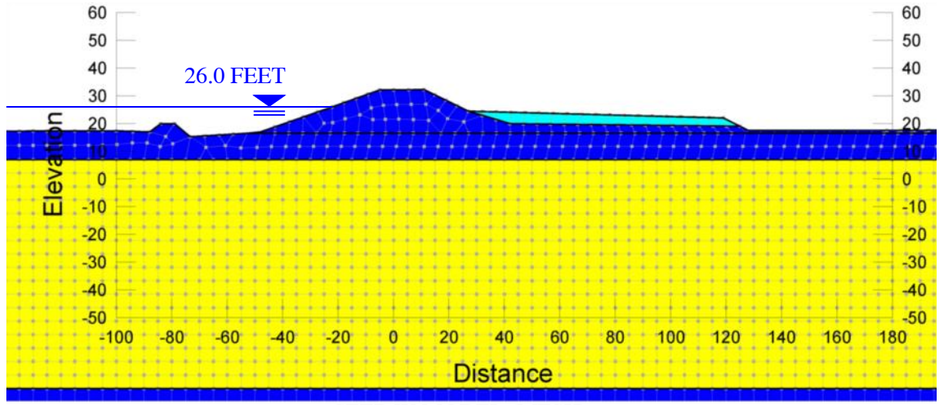
PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

FIGURE NO. A-7

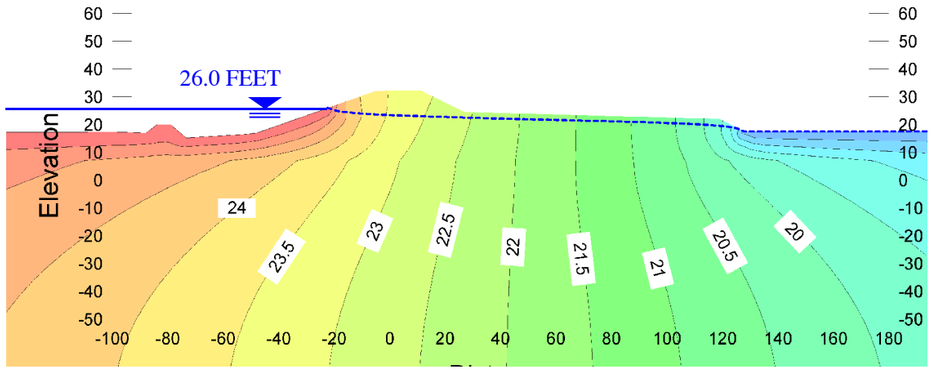
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ORIGINAL FIGURE PRINTED IN COLOR

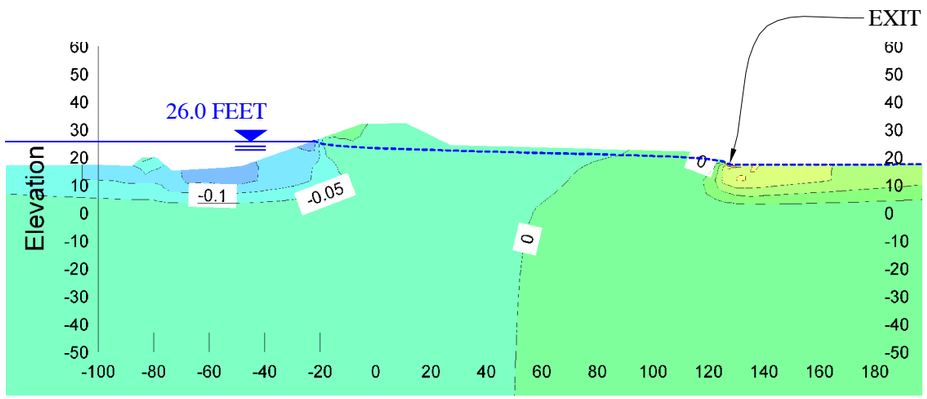
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

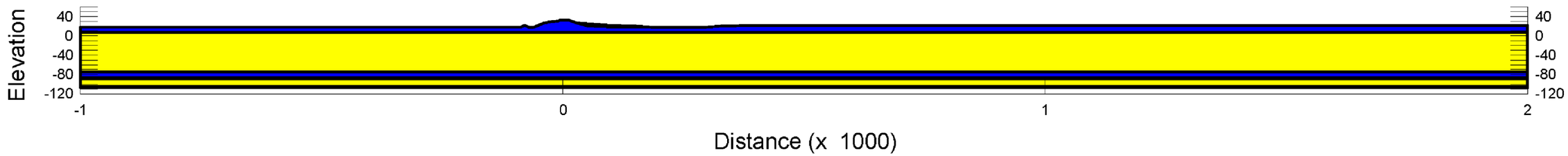
ENGEO INCORPORATED EXCELLENT SERVICE SINCE 1971	STA 868+00 - POST-CONSTRUCTION THE TRAILS OF MANTECA SAN JOAQUIN COUNTY, CALIFORNIA	PROJECT NO.: 8188.001.000 DATE: MARCH 2009 DRAWN BY: MES CHECKED BY: JJT

FIGURE NO. A-8

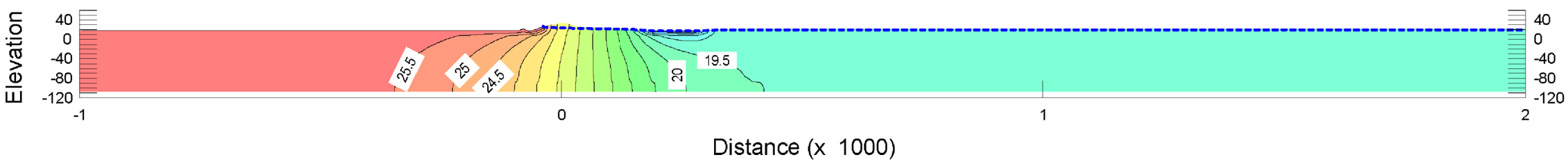
ORIGINAL FIGURE PRINTED IN COLOR

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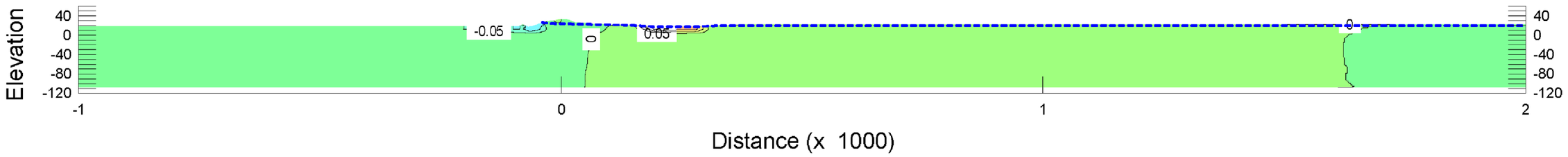
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

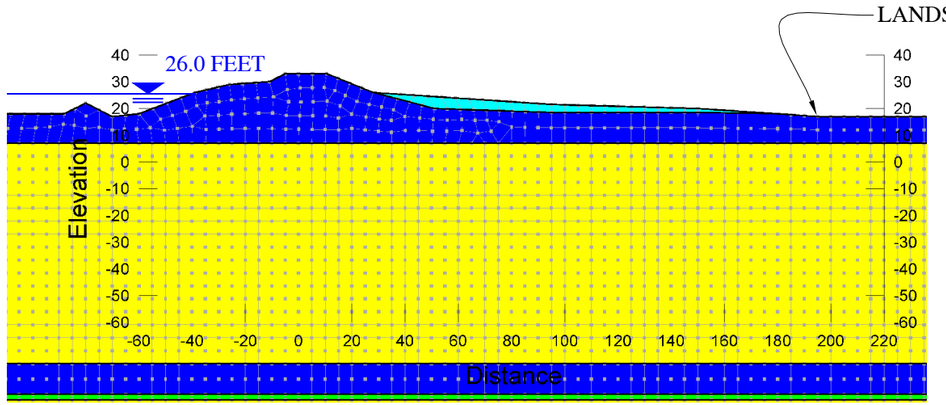
STA 881+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000	FIGURE NO. A-9
DATE: MARCH 2009	
DRAWN BY: MES	CHECKED BY: JJT

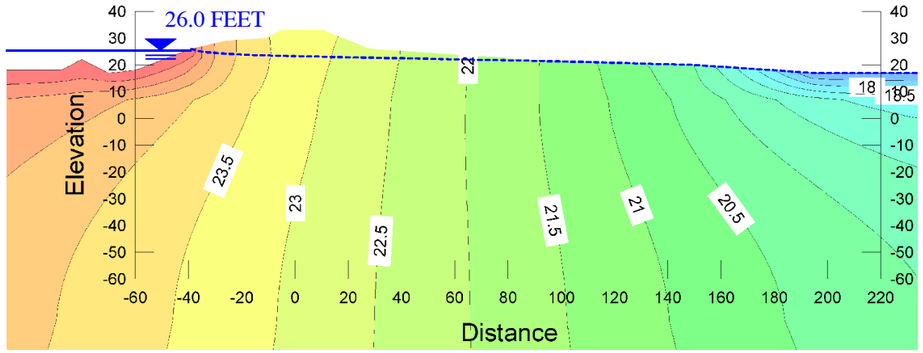
ORIGINAL FIGURE PRINTED IN COLOR

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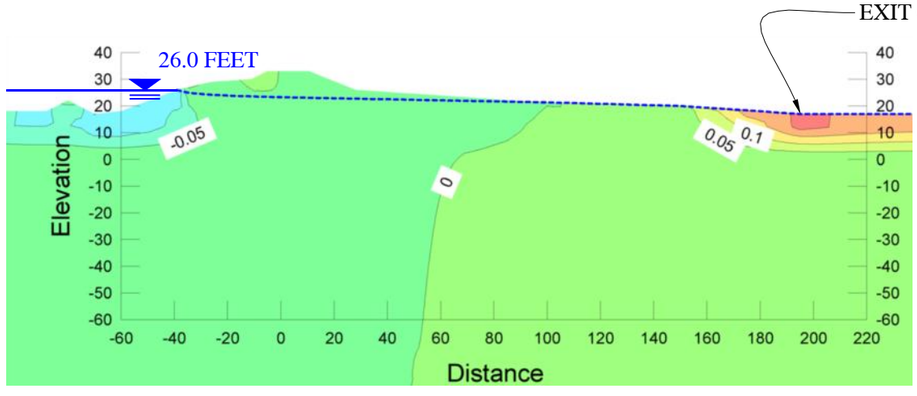
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

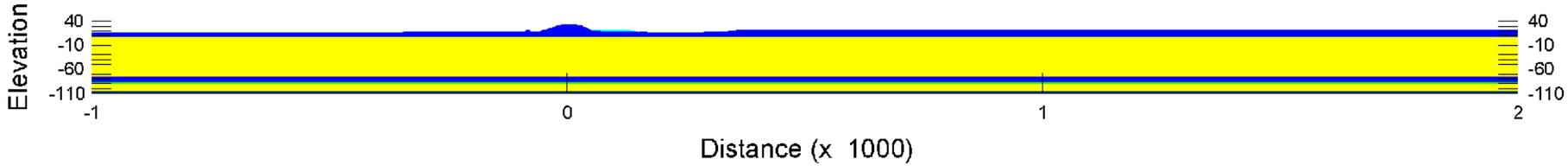
ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 881+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

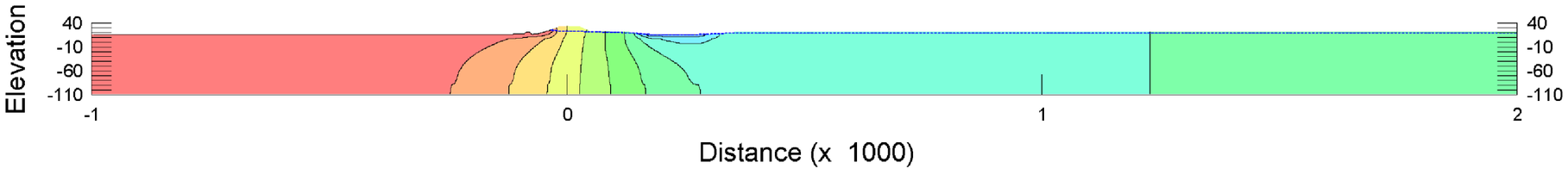
PROJECT NO.: 8188.001.000		FIGURE NO. A-10
DATE: MARCH 2009		
DRAWN BY: MES	CHECKED BY: JJT	

ORIGINAL FIGURE PRINTED IN COLOR

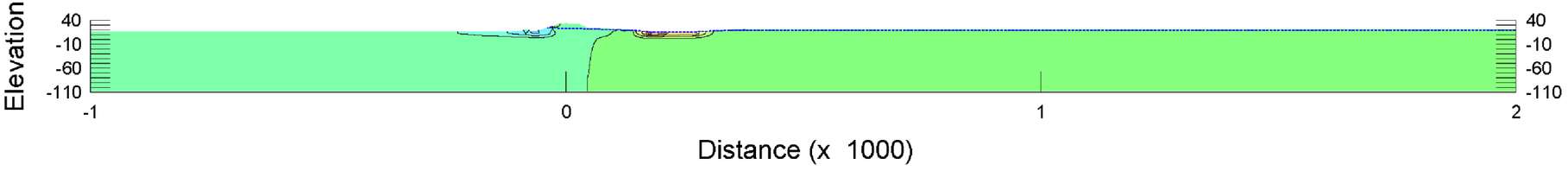
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

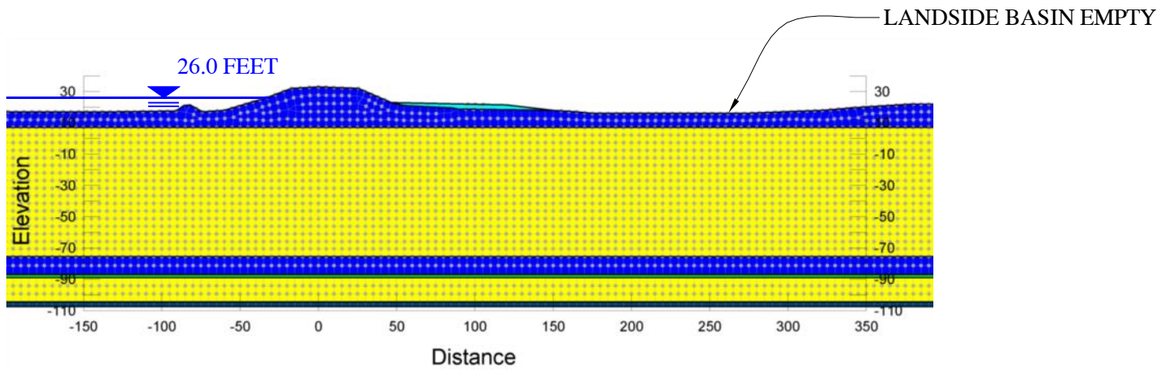
STA 887+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000	FIGURE NO. A-11
DATE: MARCH 2009	
DRAWN BY: MES	CHECKED BY: JJT

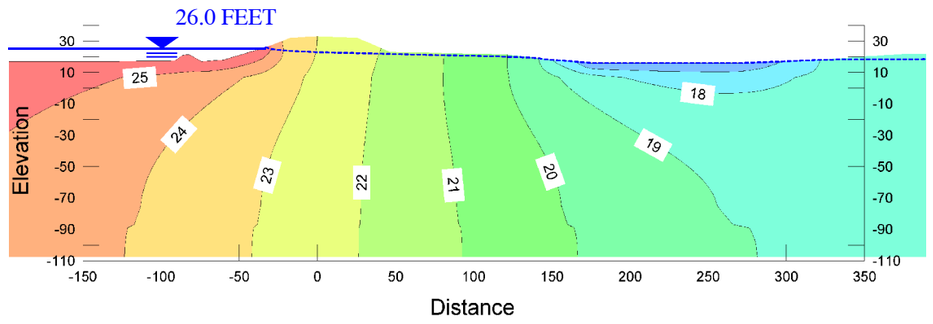
ORIGINAL FIGURE PRINTED IN COLOR

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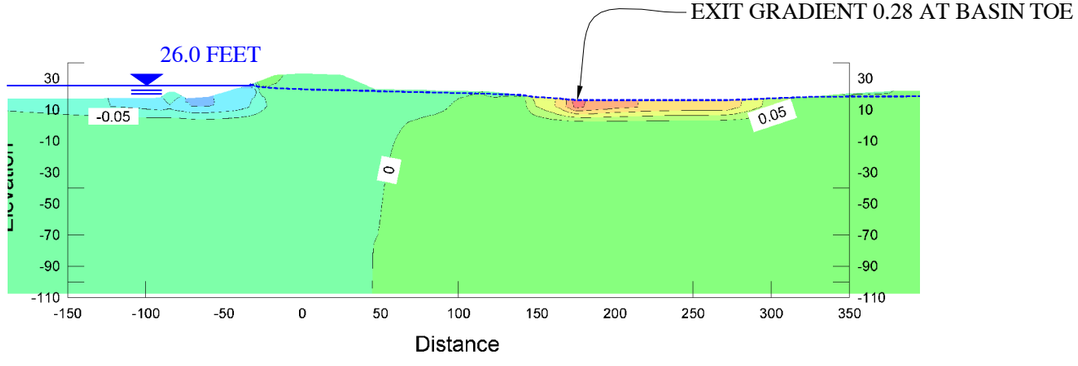
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

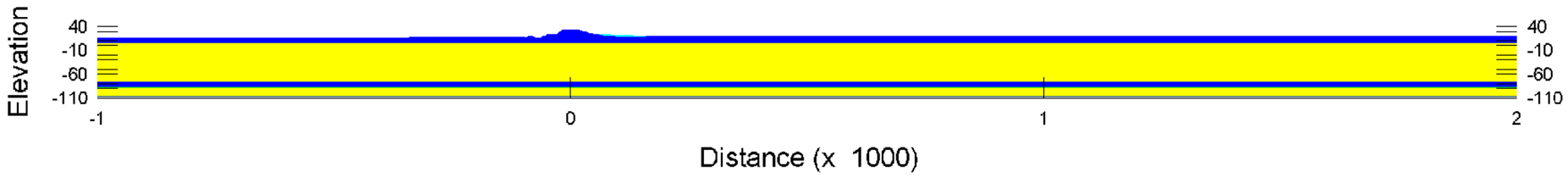
STA 887+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000		FIGURE NO. A-12
DATE: MARCH 2009		
DRAWN BY: MES	CHECKED BY: JJT	

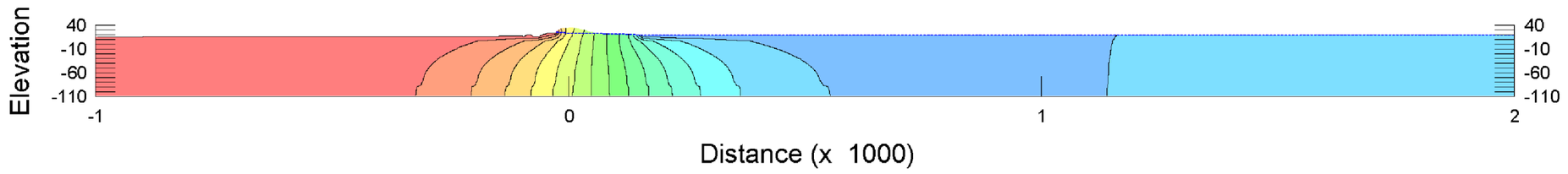
ORIGINAL FIGURE PRINTED IN COLOR

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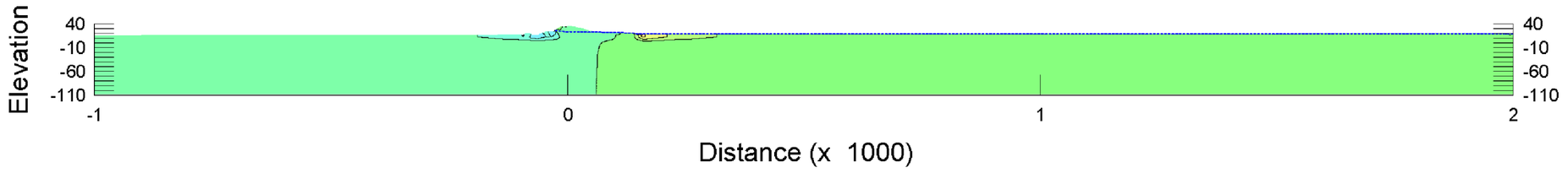
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	312 TO 16.5	ML	0.57	1
	16.5 TO 7	ML	0.57	1
	7 TO -75.5	SP	10	0.25
	-75.5 TO -87	ML	0.57	1
	-87 TO -89	SC	0.35	0.25
	-89 TO -104.5	SP	3.0	0.25
	-104.5 TO 107.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

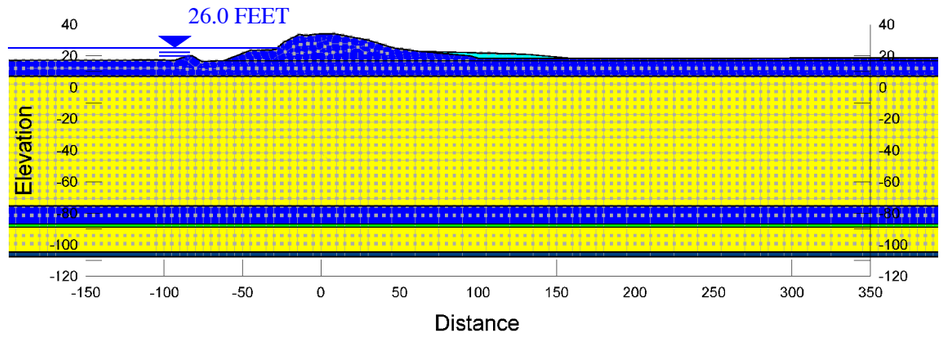
STA 900+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

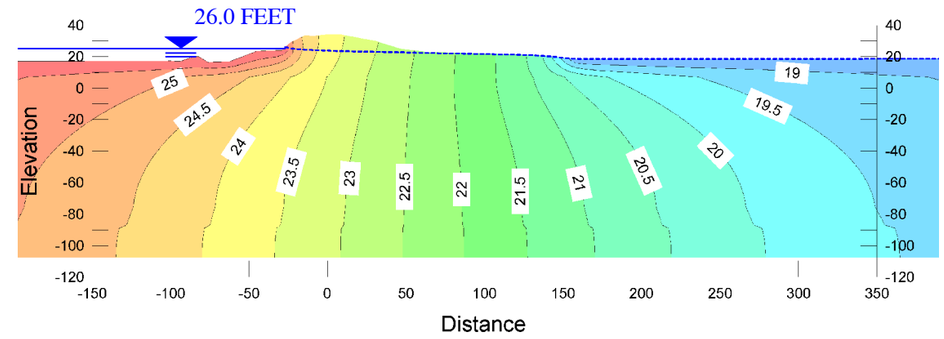
FIGURE NO.
A-13

ORIGINAL FIGURE PRINTED IN COLOR

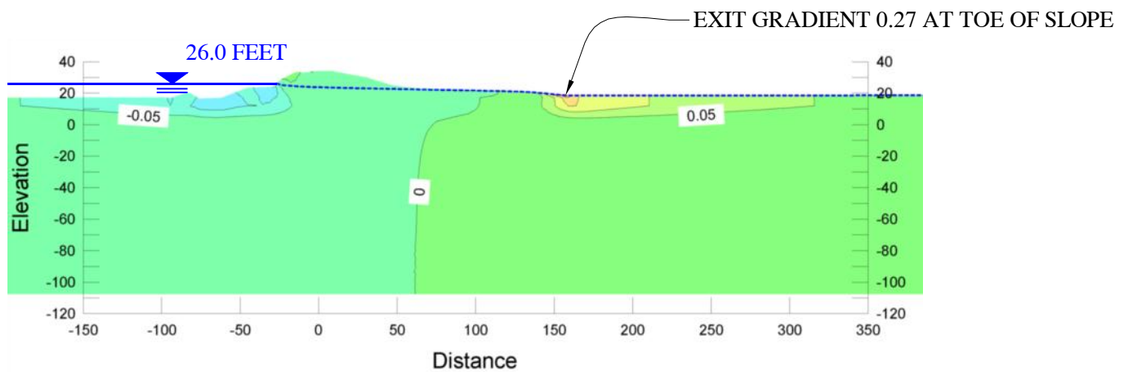
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

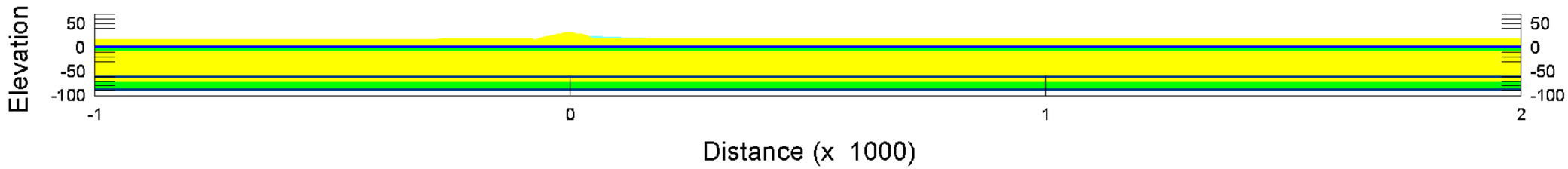
STA 900+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000			FIGURE NO. A-14
DATE: MARCH 2009			
DRAWN BY: MES	CHECKED BY: JJT		

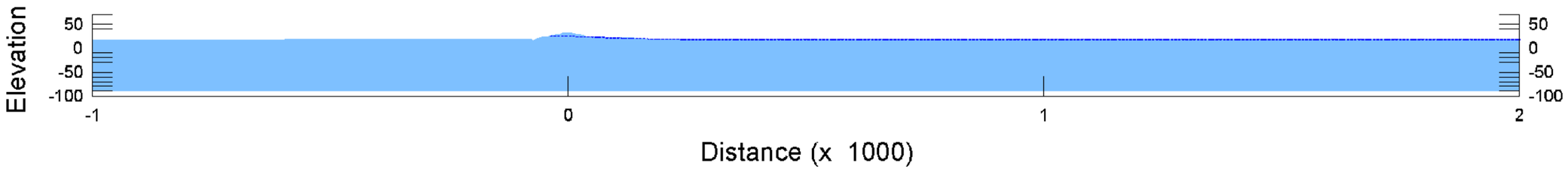
ORIGINAL FIGURE PRINTED IN COLOR

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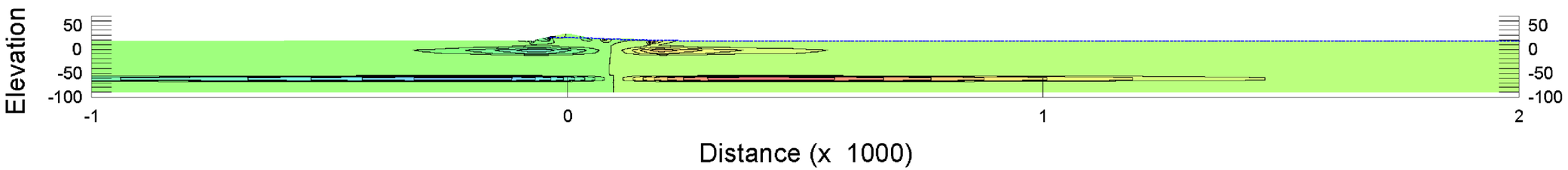
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	32.02 TO 14.5	SP	10	0.25
	14.5 TO 4	SP	17.8	0.25
	4 TO -2	ML	0.57	1
	-2 TO -8	SM	1.2	0.25
	-8 TO -59	SP	10	0.25
	-59 TO -64	CL	0.028	0.1
	-64 TO -73	SP	10	0.25
	-73 TO -86	SM	1.2	0.25
	-86 TO -89.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

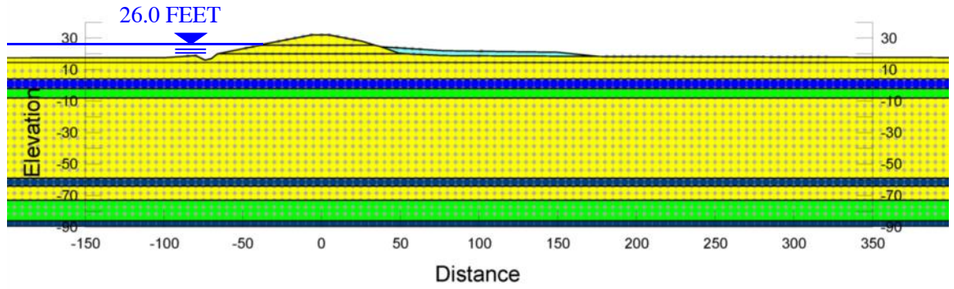
ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 912+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

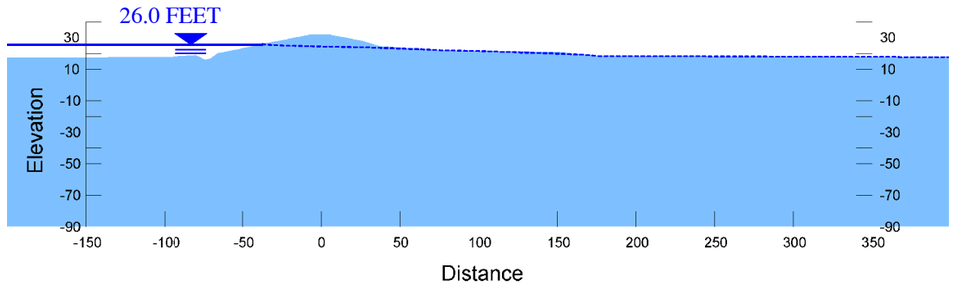
PROJECT NO.: 8188.001.000			FIGURE NO. B-3
DATE: MARCH 2009			
DRAWN BY: MES	CHECKED BY: JJT		

ORIGINAL FIGURE PRINTED IN COLOR

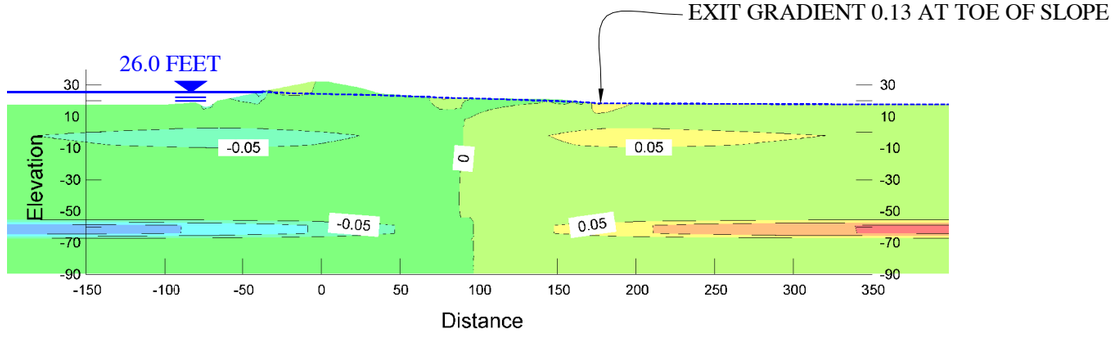
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 912+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

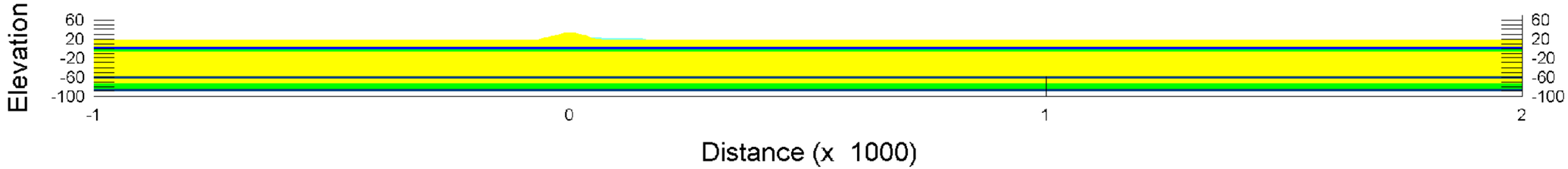
PROJECT NO.: 8188.001.000
DATE: MARCH 2009
DRAWN BY: MES
CHECKED BY: JJT

FIGURE NO.
B-4

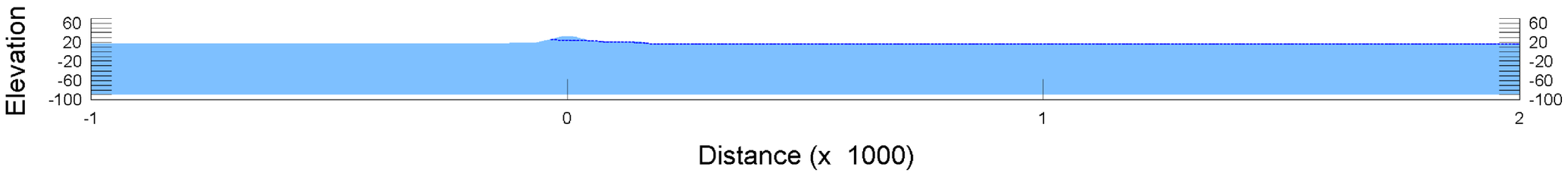
ORIGINAL FIGURE PRINTED IN COLOR

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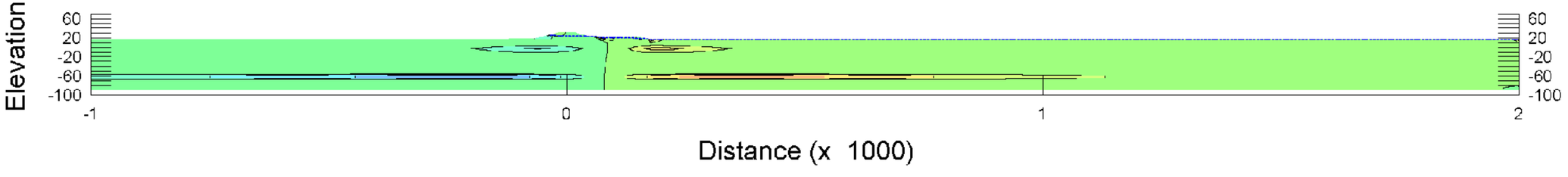
SEEPAGE MODEL MATERIAL PROPERTIES				
LAYER COLOR	ELEVATION RANGE, NGVD29 (FEET)	MATERIAL TYPE	HORIZONTAL CONDUCTIVITY, kh (FEET/DAY)	VERT./HORZ. CONDUCTIVITY RATIO, kv/kh
	32.02 TO 14.5	SP	10	0.25
	14.5 TO 4	SP	17.8	0.25
	4 TO -2	ML	0.57	1
	-2 TO -8	SM	1.2	0.25
	-8 TO -59	SP	10	0.25
	-59 TO -64	CL	0.028	0.1
	-64 TO -73	SP	10	0.25
	-73 TO -86	SM	1.2	0.25
	-86 TO -89.5	CL	0.028	0.1
	ENG. FILL	ML	0.28	1



SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

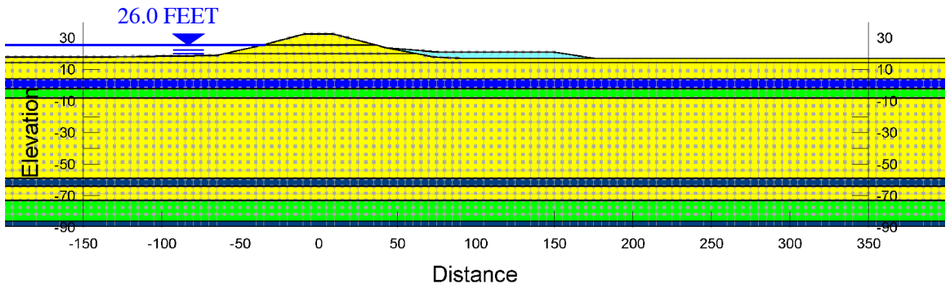
ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 925+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

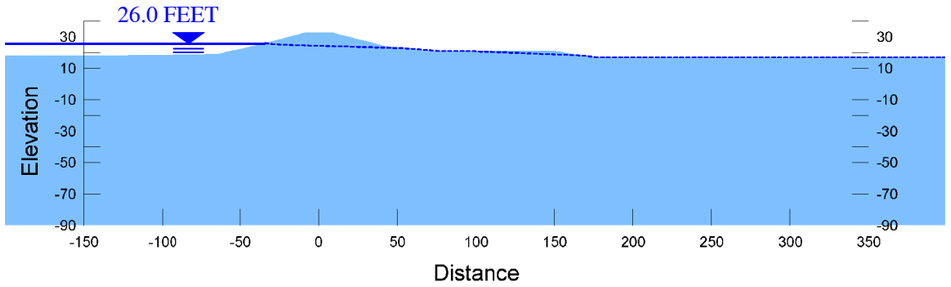
PROJECT NO.: 8188.001.000	FIGURE NO. B-5
DATE: MARCH 2009	
DRAWN BY: MES	CHECKED BY: JJT

ORIGINAL FIGURE PRINTED IN COLOR

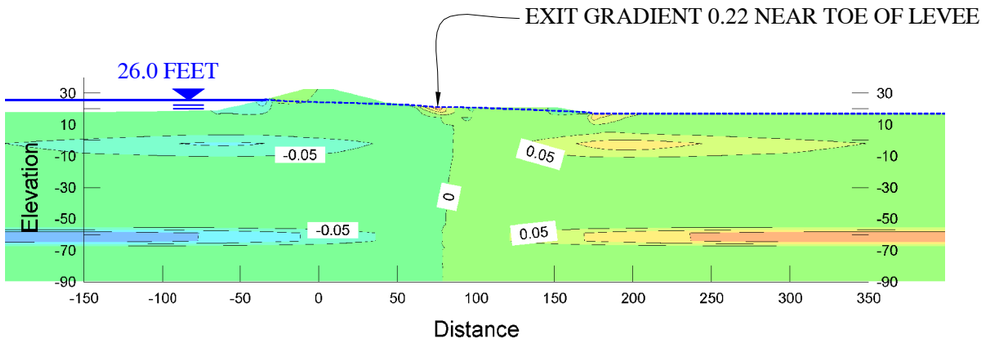
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SEEP/W MODEL (MESH)



TOTAL HEAD



Y-GRADIENT

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

STA 925+00 - POST-CONSTRUCTION
THE TRAILS OF MANTECA
SAN JOAQUIN COUNTY, CALIFORNIA

PROJECT NO.: 8188.001.000	FIGURE NO. B-6
DATE: MARCH 2009	
DRAWN BY: MES	CHECKED BY: JJT

ORIGINAL FIGURE PRINTED IN COLOR

Appendix I:
Noise Supporting Data

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\1am.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: The Islander Mobile Home Park
Note1: 80' W of Woodward Ave CL
Note2: 54 F, 76% Humid, 29.73 in Hg, no wind, clear sky

Overall Any Data
Start Time: 21-Sep-2010 07:22:36
Elapsed Time: 00:15:00.8

	A Weight		C Weight		Flat	
Leq:	49.6 dBA		61.8 dBC		64.1 dBF	
SEL:	79.2 dBA		91.4 dBC		93.6 dBF	
Peak:	87.2 dBA		94.5 dBC		95.9 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmax (slow):	69.3 dBA		72.0 dBC		74.5 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmin (slow):	44.2 dBA		58.1 dBC		60.5 dBF	
	21-Sep-2010	07:28:24	21-Sep-2010	07:35:08	21-Sep-2010	07:35:33
Lmax (fast):	76.6 dBA		80.0 dBC		82.5 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmin (fast):	43.7 dBA		56.3 dBC		58.5 dBF	
	21-Sep-2010	07:28:20	21-Sep-2010	07:35:17	21-Sep-2010	07:31:55
Lmax (impulse):	80.2 dBA		84.2 dBC		86.8 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmin (impulse):	44.2 dBA		59.0 dBC		61.2 dBF	
	21-Sep-2010	07:28:40	21-Sep-2010	07:26:22	21-Sep-2010	07:26:22

Spectra

Date	Time	Run Time
21-Sep-2010	07:22:36	00:15:00.8

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	56.5		61.5		37.1		630	41.9		51.9		36.0	
16.0	59.3	62.4	62.7	67.0	43.4	45.9	800	41.3		50.0		35.1	
20.0	56.5		62.3		40.7		1000	39.7	44.5	47.1	52.6	32.7	37.8
25.0	54.4		57.6		40.6		1250	37.3		44.7		29.6	
31.5	52.1	59.3	58.2	63.5	40.2	44.9	1600	36.0		46.0		26.7	
40.0	56.2		59.9		39.4		2000	34.0	39.3	44.7	50.1	23.6	29.8
50.0	52.0		64.4		36.9		2500	33.2		45.2		24.1	
63.0	54.9	57.9	62.3	66.8	42.4	45.7	3150	33.2		46.3		22.9	
80.0	51.6		55.7		41.7		4000	33.3	37.4	47.0	50.6	21.5	26.2
100	50.0		54.7		38.3		5000	31.0		43.3		18.9	
125	47.2	52.7	58.3	63.8	37.6	42.2	6300	39.7		74.4		17.4	
160	45.2		61.6		36.1		8000	37.0	41.6	72.2	76.5	16.6	21.6
200	44.3		49.6		35.6		10000	23.7		49.3		16.5	
250	42.0	47.6	53.9	56.5	34.1	39.2	12500	27.5		60.2		16.9	
315	41.7		50.6		33.2		16000	22.7	29.6	46.9	60.4	18.0	23.2
400	40.8		47.8		33.4		20000	21.9		40.1		19.9	
500	42.4	46.5	49.0	54.7	35.6	39.9							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\1am.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 21-Sep-2010 07:22:36
Elapsed Time: 00:15:00.8

	A Weight		C Weight		Flat	
Leq:	49.6 dBA		61.8 dBC		64.1 dBF	
SEL:	79.2 dBA		91.4 dBC		93.6 dBF	
Peak:	87.2 dBA		94.5 dBC		95.9 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmax (slow):	69.3 dBA		72.0 dBC		74.5 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmin (slow):	44.2 dBA		58.1 dBC		60.5 dBF	
	21-Sep-2010	07:28:24	21-Sep-2010	07:35:08	21-Sep-2010	07:35:33
Lmax (fast):	76.6 dBA		80.0 dBC		82.5 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmin (fast):	43.7 dBA		56.3 dBC		58.5 dBF	
	21-Sep-2010	07:28:20	21-Sep-2010	07:35:17	21-Sep-2010	07:31:55
Lmax (impulse):	80.2 dBA		84.2 dBC		86.8 dBF	
	21-Sep-2010	07:36:28	21-Sep-2010	07:23:16	21-Sep-2010	07:23:16
Lmin (impulse):	44.2 dBA		59.0 dBC		61.2 dBF	
	21-Sep-2010	07:28:40	21-Sep-2010	07:26:22	21-Sep-2010	07:26:22

Calibrated: 21-Sep-2010 07:20:57 Offset: -48.3 dB
Checked: 21-Sep-2010 07:20:57 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 1

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\1pm.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: The Islander Mobile Home Park
Note1: 80' W of Woodward Ave CL
Note2: 85 F, 37% Humid, 29.74 in Hg, 4 mph wind, clear sky

Overall Any Data
Start Time: 20-Sep-2010 16:21:56
Elapsed Time: 00:15:00.7

	A Weight		C Weight		Flat	
Leq:	50.6 dBA		66.1 dBC		70.0 dBF	
SEL:	80.2 dBA		95.6 dBC		99.5 dBF	
Peak:	88.1 dBA		96.0 dBC		97.5 dBF	
	20-Sep-2010	16:28:21	20-Sep-2010	16:28:21	20-Sep-2010	16:28:21
Lmax (slow):	68.3 dBA		83.0 dBC		83.6 dBF	
	20-Sep-2010	16:32:20	20-Sep-2010	16:32:20	20-Sep-2010	16:32:20
Lmin (slow):	42.0 dBA		57.1 dBC		59.5 dBF	
	20-Sep-2010	16:36:23	20-Sep-2010	16:24:00	20-Sep-2010	16:23:48
Lmax (fast):	69.3 dBA		84.7 dBC		86.6 dBF	
	20-Sep-2010	16:32:20	20-Sep-2010	16:32:20	20-Sep-2010	16:25:11
Lmin (fast):	41.5 dBA		54.9 dBC		57.4 dBF	
	20-Sep-2010	16:27:11	20-Sep-2010	16:23:47	20-Sep-2010	16:23:18
Lmax (impulse):	72.8 dBA		86.0 dBC		88.6 dBF	
	20-Sep-2010	16:28:21	20-Sep-2010	16:28:21	20-Sep-2010	16:28:21
Lmin (impulse):	41.5 dBA		57.5 dBC		60.8 dBF	
	20-Sep-2010	16:27:11	20-Sep-2010	16:24:00	20-Sep-2010	16:23:24

Spectra

Date	Time	Run Time
20-Sep-2010	16:21:56	00:15:00.7

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	64.3		64.0		37.7		630	42.1		58.6		31.5	
16.0	63.0	67.7	68.0	71.8	42.6	46.3	800	41.7		55.8		31.9	
20.0	61.0		68.1		42.6		1000	40.3	45.2	50.1	57.5	30.7	35.2
25.0	58.7		67.9		39.7		1250	38.6		49.3		27.7	
31.5	55.6	62.0	67.8	76.6	39.9	43.5	1600	37.2		53.2		25.8	
40.0	56.9		75.2		35.2		2000	36.1	41.0	55.3	60.5	23.4	29.1
50.0	57.7		80.7		37.4		2500	35.3		57.5		23.2	
63.0	56.2	61.2	73.5	82.4	37.4	41.8	3150	34.3		54.9		22.9	
80.0	55.1		75.4		36.2		4000	32.3	37.5	52.1	58.0	21.0	26.1
100	56.1		75.6		34.6		5000	31.1		51.9		19.3	
125	55.3	59.5	81.3	82.8	36.1	39.7	6300	28.7		49.7		17.7	
160	51.8		73.3		33.6		8000	26.2	31.4	45.3	51.5	17.2	22.1
200	49.5		69.8		33.8		10000	23.4		41.3		16.9	
250	44.7	51.3	61.9	71.0	32.4	37.4	12500	21.5		36.3		17.0	
315	42.2		62.0		31.5		16000	20.6	25.9	28.3	37.1	18.4	23.5
400	41.2		58.5		31.0		20000	21.1		22.7		20.1	
500	41.2	46.3	55.2	62.5	31.9	36.3							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\1pm.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 20-Sep-2010 16:21:56
Elapsed Time: 00:15:00.7

	A Weight	C Weight	Flat
Leq:	50.6 dBA	66.1 dBC	70.0 dBF
SEL:	80.2 dBA	95.6 dBC	99.5 dBF
Peak:	88.1 dBA	96.0 dBC	97.5 dBF
	20-Sep-2010 16:28:21	20-Sep-2010 16:28:21	20-Sep-2010 16:28:21
Lmax (slow):	68.3 dBA	83.0 dBC	83.6 dBF
	20-Sep-2010 16:32:20	20-Sep-2010 16:32:20	20-Sep-2010 16:32:20
Lmin (slow):	42.0 dBA	57.1 dBC	59.5 dBF
	20-Sep-2010 16:36:23	20-Sep-2010 16:24:00	20-Sep-2010 16:23:48
Lmax (fast):	69.3 dBA	84.7 dBC	86.6 dBF
	20-Sep-2010 16:32:20	20-Sep-2010 16:32:20	20-Sep-2010 16:25:11
Lmin (fast):	41.5 dBA	54.9 dBC	57.4 dBF
	20-Sep-2010 16:27:11	20-Sep-2010 16:23:47	20-Sep-2010 16:23:18
Lmax (impulse):	72.8 dBA	86.0 dBC	88.6 dBF
	20-Sep-2010 16:28:21	20-Sep-2010 16:28:21	20-Sep-2010 16:28:21
Lmin (impulse):	41.5 dBA	57.5 dBC	60.8 dBF
	20-Sep-2010 16:27:11	20-Sep-2010 16:24:00	20-Sep-2010 16:23:24

Calibrated: 20-Sep-2010 08:49:38 Offset: -47.8 dB
Checked: 20-Sep-2010 08:49:38 Level: 92.8 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\2am.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: North of project site
Note1: 110' W of McKinley Ave CL
Note2: 54 F, 76% Humid, 29.73 in Hg, no wind, clear sky

Overall Any Data
Start Time: 21-Sep-2010 07:43:43
Elapsed Time: 00:15:00.7

	A Weight		C Weight		Flat	
Leq:	54.9 dBA		66.0 dBC		67.6 dBF	
SEL:	84.5 dBA		95.5 dBC		97.1 dBF	
Peak:	78.1 dBA		82.1 dBC		83.9 dBF	
	21-Sep-2010	07:44:36	21-Sep-2010	07:49:22	21-Sep-2010	07:46:59
Lmax (slow):	62.9 dBA		72.3 dBC		73.1 dBF	
	21-Sep-2010	07:43:43	21-Sep-2010	07:49:22	21-Sep-2010	07:47:39
Lmin (slow):	50.8 dBA		62.5 dBC		64.1 dBF	
	21-Sep-2010	07:55:30	21-Sep-2010	07:45:01	21-Sep-2010	07:45:01
Lmax (fast):	67.5 dBA		74.1 dBC		75.0 dBF	
	21-Sep-2010	07:44:33	21-Sep-2010	07:49:22	21-Sep-2010	07:49:22
Lmin (fast):	50.2 dBA		61.1 dBC		62.7 dBF	
	21-Sep-2010	07:57:55	21-Sep-2010	07:45:11	21-Sep-2010	07:45:01
Lmax (impulse):	70.4 dBA		74.8 dBC		76.1 dBF	
	21-Sep-2010	07:44:33	21-Sep-2010	07:49:21	21-Sep-2010	07:49:27
Lmin (impulse):	50.5 dBA		63.3 dBC		64.9 dBF	
	21-Sep-2010	07:55:30	21-Sep-2010	07:44:11	21-Sep-2010	07:45:01

Spectra

Date	Time	Run Time
21-Sep-2010	07:43:43	00:15:00.7

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	57.1		54.3		36.3		630	46.0		47.9		39.3	
16.0	59.9	63.6	54.7	63.1	42.8	47.5	800	47.1		49.1		41.8	
20.0	58.9		61.7		45.1		1000	46.8	51.1	48.3	53.1	42.1	46.1
25.0	57.8		60.7		44.5		1250	44.9		47.4		39.7	
31.5	57.3	62.2	57.4	64.6	43.5	49.4	1600	43.3		48.5		37.6	
40.0	57.1		60.7		45.7		2000	41.4	46.9	55.3	57.8	32.9	39.3
50.0	56.6		58.6		46.1		2500	41.3		52.9		29.3	
63.0	60.3	63.5	59.7	63.9	49.1	52.6	3150	43.2		60.2		24.4	
80.0	58.5		59.0		47.9		4000	40.7	45.4	56.9	62.3	20.0	26.2
100	54.5		54.1		46.6		5000	33.2		52.1		16.6	
125	53.2	57.6	56.9	59.2	44.3	49.3	6300	26.4		38.2		15.6	
160	49.1		49.7		40.9		8000	25.5	29.7	40.7	43.7	16.0	20.8
200	46.5		47.9		39.7		10000	21.8		36.9		16.5	
250	44.8	50.1	45.8	51.1	37.9	42.9	12500	19.8		28.1		17.0	
315	44.3		44.5		36.0		16000	19.8	25.0	24.1	30.2	18.4	23.4
400	43.0		43.2		36.4		20000	20.9		21.7		20.0	
500	45.0	49.6	47.4	51.4	37.8	42.8							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\2am.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 21-Sep-2010 07:43:43
Elapsed Time: 00:15:00.7

	A Weight		C Weight		Flat	
Leq:	54.9 dBA		66.0 dBC		67.6 dBF	
SEL:	84.5 dBA		95.5 dBC		97.1 dBF	
Peak:	78.1 dBA		82.1 dBC		83.9 dBF	
	21-Sep-2010	07:44:36	21-Sep-2010	07:49:22	21-Sep-2010	07:46:59
Lmax (slow):	62.9 dBA		72.3 dBC		73.1 dBF	
	21-Sep-2010	07:43:43	21-Sep-2010	07:49:22	21-Sep-2010	07:47:39
Lmin (slow):	50.8 dBA		62.5 dBC		64.1 dBF	
	21-Sep-2010	07:55:30	21-Sep-2010	07:45:01	21-Sep-2010	07:45:01
Lmax (fast):	67.5 dBA		74.1 dBC		75.0 dBF	
	21-Sep-2010	07:44:33	21-Sep-2010	07:49:22	21-Sep-2010	07:49:22
Lmin (fast):	50.2 dBA		61.1 dBC		62.7 dBF	
	21-Sep-2010	07:57:55	21-Sep-2010	07:45:11	21-Sep-2010	07:45:01
Lmax (impulse):	70.4 dBA		74.8 dBC		76.1 dBF	
	21-Sep-2010	07:44:33	21-Sep-2010	07:49:21	21-Sep-2010	07:49:27
Lmin (impulse):	50.5 dBA		63.3 dBC		64.9 dBF	
	21-Sep-2010	07:55:30	21-Sep-2010	07:44:11	21-Sep-2010	07:45:01

Calibrated: 21-Sep-2010 07:20:57 Offset: -48.3 dB
Checked: 21-Sep-2010 07:20:57 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\2pm.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: North of project site
Note1: 110' W of McKinley Ave CL
Note2: 85 F, 37% Humid, 29.74 in Hg, 4 mph wind, clear sky

Overall Any Data
Start Time: 20-Sep-2010 16:43:19
Elapsed Time: 00:18:00.2

	A Weight		C Weight		Flat	
Leq:	58.2 dBA		67.6 dBC		70.4 dBF	
SEL:	88.5 dBA		97.9 dBC		100.7 dBF	
Peak:	88.7 dBA		95.7 dBC		96.3 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24
Lmax (slow):	75.8 dBA		84.3 dBC		84.6 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24
Lmin (slow):	51.4 dBA		60.9 dBC		62.8 dBF	
	20-Sep-2010	16:53:56	20-Sep-2010	16:57:46	20-Sep-2010	16:57:46
Lmax (fast):	78.3 dBA		86.0 dBC		86.2 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:48:52
Lmin (fast):	50.3 dBA		59.7 dBC		61.3 dBF	
	20-Sep-2010	16:53:55	20-Sep-2010	16:57:42	20-Sep-2010	16:56:03
Lmax (impulse):	79.0 dBA		86.8 dBC		89.1 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:48:52
Lmin (impulse):	50.7 dBA		61.7 dBC		63.7 dBF	
	20-Sep-2010	16:53:55	20-Sep-2010	16:54:34	20-Sep-2010	16:55:54

Spectra

Date	Time	Run Time
20-Sep-2010	16:43:19	00:18:00.2

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	63.2		68.4		35.1		630	50.1		66.9		40.0	
16.0	63.5	67.6	75.6	77.1	43.0	47.2	800	51.5		68.1		42.3	
20.0	61.7		69.3		44.7		1000	50.9	55.2	63.3	69.9	43.1	47.0
25.0	60.3		66.5		44.6		1250	48.3		60.5		40.9	
31.5	58.2	63.4	68.2	72.9	42.2	48.2	1600	46.7		58.1		38.3	
40.0	56.8		69.3		43.1		2000	43.1	48.8	55.9	61.0	33.5	40.0
50.0	57.7		71.8		46.1		2500	39.7		53.3		29.5	
63.0	57.6	62.5	65.0	77.4	42.7	49.5	3150	36.5		51.5		25.5	
80.0	57.9		75.6		44.6		4000	33.8	39.1	49.6	54.4	21.1	27.3
100	58.1		79.3		42.0		5000	31.3		46.2		17.6	
125	55.3	60.6	70.7	80.1	40.4	45.3	6300	29.4		45.1		16.5	
160	52.4		67.7		38.4		8000	27.1	32.0	40.2	46.9	16.7	21.5
200	51.0		70.6		38.1		10000	23.3		37.8		16.9	
250	52.2	56.4	80.8	82.9	37.3	42.4	12500	21.1		31.0		17.1	
315	51.7		77.9		37.3		16000	20.1	25.5	24.7	32.3	18.4	23.4
400	48.8		72.6		37.6		20000	20.9		22.0		20.0	
500	50.3	54.6	74.0	76.8	39.0	43.7							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\2pm.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 20-Sep-2010 16:43:19
Elapsed Time: 00:18:00.2

	A Weight		C Weight		Flat	
Leq:	58.2 dBA		67.6 dBC		70.4 dBF	
SEL:	88.5 dBA		97.9 dBC		100.7 dBF	
Peak:	88.7 dBA		95.7 dBC		96.3 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24
Lmax (slow):	75.8 dBA		84.3 dBC		84.6 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24
Lmin (slow):	51.4 dBA		60.9 dBC		62.8 dBF	
	20-Sep-2010	16:53:56	20-Sep-2010	16:57:46	20-Sep-2010	16:57:46
Lmax (fast):	78.3 dBA		86.0 dBC		86.2 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:48:52
Lmin (fast):	50.3 dBA		59.7 dBC		61.3 dBF	
	20-Sep-2010	16:53:55	20-Sep-2010	16:57:42	20-Sep-2010	16:56:03
Lmax (impulse):	79.0 dBA		86.8 dBC		89.1 dBF	
	20-Sep-2010	16:53:24	20-Sep-2010	16:53:24	20-Sep-2010	16:48:52
Lmin (impulse):	50.7 dBA		61.7 dBC		63.7 dBF	
	20-Sep-2010	16:53:55	20-Sep-2010	16:54:34	20-Sep-2010	16:55:54

Calibrated: 20-Sep-2010 08:49:38 Offset: -47.8 dB
Checked: 20-Sep-2010 08:49:38 Level: 92.8 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\3am.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: NE of project site - 110' S of Ancestry St CL
Note1: 20' N of 8' block wall X feet N of Woodward Ave
Note2: 54 F, 76% Humid, 29.73 in Hg, no wind, clear sky

Overall Any Data
Start Time: 21-Sep-2010 08:03:33
Elapsed Time: 00:16:00.7

	A Weight		C Weight		Flat	
Leq:	49.7 dBA		62.5 dBC		63.9 dBF	
SEL:	79.5 dBA		92.4 dBC		93.7 dBF	
Peak:	77.8 dBA		93.8 dBC		95.2 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:04:52	21-Sep-2010	08:04:52
Lmax (slow):	64.6 dBA		78.6 dBC		78.9 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:14:56	21-Sep-2010	08:14:56
Lmin (slow):	43.0 dBA		56.6 dBC		58.7 dBF	
	21-Sep-2010	08:16:37	21-Sep-2010	08:16:52	21-Sep-2010	08:16:52
Lmax (fast):	67.7 dBA		82.2 dBC		84.3 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:04:52	21-Sep-2010	08:04:52
Lmin (fast):	42.3 dBA		54.9 dBC		56.9 dBF	
	21-Sep-2010	08:17:00	21-Sep-2010	08:16:56	21-Sep-2010	08:17:01
Lmax (impulse):	69.1 dBA		86.0 dBC		88.2 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:04:52	21-Sep-2010	08:04:52
Lmin (impulse):	43.1 dBA		57.1 dBC		60.0 dBF	
	21-Sep-2010	08:16:42	21-Sep-2010	08:16:51	21-Sep-2010	08:16:44

Spectra

Date	Time	Run Time
21-Sep-2010	08:03:33	00:16:00.7

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	53.7		62.2		37.9		630	40.5		56.5		32.1	
16.0	56.2	59.3	61.3	68.6	39.0	42.7	800	41.8		54.1		33.6	
20.0	53.2		66.3		36.4		1000	41.4	45.7	52.3	57.2	33.9	37.9
25.0	52.1		70.6		35.1		1250	39.3		49.8		31.6	
31.5	52.7	57.1	61.9	71.5	38.1	42.7	1600	37.8		47.8		29.2	
40.0	52.1		60.3		39.5		2000	34.0	39.8	41.9	49.4	26.0	31.4
50.0	50.9		58.9		39.7		2500	30.2		40.3		22.2	
63.0	55.3	59.5	78.6	80.1	43.0	46.7	3150	27.6		37.7		18.6	
80.0	56.3		74.8		42.5		4000	33.7	35.9	35.0	40.0	16.3	21.8
100	56.2		57.0		40.2		5000	30.0		30.1		15.4	
125	47.6	57.1	57.1	61.1	37.6	42.8	6300	21.6		31.3		15.3	
160	45.2		54.3		34.2		8000	19.2	24.7	27.8	33.5	15.8	20.6
200	44.5		62.2		33.5		10000	18.3		24.2		16.3	
250	46.0	49.2	74.6	75.2	31.7	36.7	12500	18.3		24.0		16.7	
315	42.0		64.4		29.6		16000	19.2	24.2	21.5	27.1	18.1	23.1
400	40.1		51.7		29.8		20000	20.6		20.9		19.7	
500	42.3	45.8	56.6	60.2	30.2	35.6							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\3am.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 21-Sep-2010 08:03:33
Elapsed Time: 00:16:00.7

	A Weight		C Weight		Flat	
Leq:	49.7 dBA		62.5 dBC		63.9 dBF	
SEL:	79.5 dBA		92.4 dBC		93.7 dBF	
Peak:	77.8 dBA		93.8 dBC		95.2 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:04:52	21-Sep-2010	08:04:52
Lmax (slow):	64.6 dBA		78.6 dBC		78.9 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:14:56	21-Sep-2010	08:14:56
Lmin (slow):	43.0 dBA		56.6 dBC		58.7 dBF	
	21-Sep-2010	08:16:37	21-Sep-2010	08:16:52	21-Sep-2010	08:16:52
Lmax (fast):	67.7 dBA		82.2 dBC		84.3 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:04:52	21-Sep-2010	08:04:52
Lmin (fast):	42.3 dBA		54.9 dBC		56.9 dBF	
	21-Sep-2010	08:17:00	21-Sep-2010	08:16:56	21-Sep-2010	08:17:01
Lmax (impulse):	69.1 dBA		86.0 dBC		88.2 dBF	
	21-Sep-2010	08:12:44	21-Sep-2010	08:04:52	21-Sep-2010	08:04:52
Lmin (impulse):	43.1 dBA		57.1 dBC		60.0 dBF	
	21-Sep-2010	08:16:42	21-Sep-2010	08:16:51	21-Sep-2010	08:16:44

Calibrated: 21-Sep-2010 07:20:57 Offset: -48.3 dB
Checked: 21-Sep-2010 07:20:57 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\3pm.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: NE of project site - 110' S of Ancestry St CL
Note1: 20' N of 8' Block wall X feet N of Woodward Ave
Note2: 85 F, 37% Humid, 29.74 in Hg, 4 mph wind, clear sky

Overall Any Data
Start Time: 20-Sep-2010 17:06:03
Elapsed Time: 00:16:00.7

	A Weight		C Weight		Flat	
Leq:	51.5 dBA		62.5 dBC		66.0 dBF	
SEL:	81.3 dBA		92.3 dBC		95.8 dBF	
Peak:	87.0 dBA		87.0 dBC		93.2 dBF	
	20-Sep-2010	17:06:06	20-Sep-2010	17:20:01	20-Sep-2010	17:20:11
Lmax (slow):	61.1 dBA		72.7 dBC		80.1 dBF	
	20-Sep-2010	17:09:46	20-Sep-2010	17:09:48	20-Sep-2010	17:20:11
Lmin (slow):	45.6 dBA		55.9 dBC		57.7 dBF	
	20-Sep-2010	17:21:49	20-Sep-2010	17:22:01	20-Sep-2010	17:22:01
Lmax (fast):	65.8 dBA		78.3 dBC		87.1 dBF	
	20-Sep-2010	17:06:06	20-Sep-2010	17:20:11	20-Sep-2010	17:20:11
Lmin (fast):	45.0 dBA		54.6 dBC		56.5 dBF	
	20-Sep-2010	17:21:48	20-Sep-2010	17:20:57	20-Sep-2010	17:20:57
Lmax (impulse):	69.4 dBA		81.4 dBC		89.9 dBF	
	20-Sep-2010	17:06:06	20-Sep-2010	17:20:11	20-Sep-2010	17:20:11
Lmin (impulse):	45.8 dBA		56.5 dBC		58.7 dBF	
	20-Sep-2010	17:21:47	20-Sep-2010	17:22:01	20-Sep-2010	17:21:47

Spectra

Date	Time	Run Time
20-Sep-2010	17:06:03	00:16:00.7

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	59.6		63.1		34.8		630	44.1		55.1		35.9	
16.0	58.3	62.9	61.1	67.5	38.6	42.4	800	44.7		53.2		37.7	
20.0	55.8		63.5		38.4		1000	43.8	48.4	52.8	57.0	37.0	41.4
25.0	53.0		65.1		35.5		1250	41.8		50.1		34.5	
31.5	51.7	57.3	59.1	67.8	34.0	40.2	1600	40.0		48.8		31.7	
40.0	52.8		63.1		36.5		2000	36.4	42.1	44.0	50.5	26.7	33.3
50.0	52.6		63.8		37.0		2500	32.8		40.7		22.3	
63.0	53.4	58.4	58.2	65.9	39.2	44.3	3150	29.9		35.6		17.4	
80.0	54.7		59.4		41.4		4000	28.0	33.0	32.8	38.5	16.6	21.5
100	52.8		74.5		37.8		5000	26.1		31.8		16.1	
125	50.3	55.5	59.1	74.8	39.7	43.4	6300	23.8		28.4		15.8	
160	47.3		61.6		38.1		8000	21.7	27.0	26.1	31.0	16.3	21.1
200	45.0		59.9		36.0		10000	20.6		22.4		16.8	
250	44.5	48.9	57.0	63.8	34.1	39.5	12500	20.6		20.9		17.0	
315	42.6		59.6		33.6		16000	21.0	25.9	20.9	25.8	18.3	23.4
400	42.5		53.3		33.6		20000	21.7		21.3		20.0	
500	42.9	48.0	51.2	58.3	34.9	39.7							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10031-Trails of Manteca\Noise Measurements\3pm.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 20-Sep-2010 17:06:03
Elapsed Time: 00:16:00.7

	A Weight		C Weight		Flat	
Leq:	51.5 dBA		62.5 dBC		66.0 dBF	
SEL:	81.3 dBA		92.3 dBC		95.8 dBF	
Peak:	87.0 dBA		87.0 dBC		93.2 dBF	
	20-Sep-2010	17:06:06	20-Sep-2010	17:20:01	20-Sep-2010	17:20:11
Lmax (slow):	61.1 dBA		72.7 dBC		80.1 dBF	
	20-Sep-2010	17:09:46	20-Sep-2010	17:09:48	20-Sep-2010	17:20:11
Lmin (slow):	45.6 dBA		55.9 dBC		57.7 dBF	
	20-Sep-2010	17:21:49	20-Sep-2010	17:22:01	20-Sep-2010	17:22:01
Lmax (fast):	65.8 dBA		78.3 dBC		87.1 dBF	
	20-Sep-2010	17:06:06	20-Sep-2010	17:20:11	20-Sep-2010	17:20:11
Lmin (fast):	45.0 dBA		54.6 dBC		56.5 dBF	
	20-Sep-2010	17:21:48	20-Sep-2010	17:20:57	20-Sep-2010	17:20:57
Lmax (impulse):	69.4 dBA		81.4 dBC		89.9 dBF	
	20-Sep-2010	17:06:06	20-Sep-2010	17:20:11	20-Sep-2010	17:20:11
Lmin (impulse):	45.8 dBA		56.5 dBC		58.7 dBF	
	20-Sep-2010	17:21:47	20-Sep-2010	17:22:01	20-Sep-2010	17:21:47

Calibrated: 20-Sep-2010 08:49:38 Offset: -47.8 dB
Checked: 20-Sep-2010 08:49:38 Level: 92.8 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

Site A - West Side of Project Site

Date	Time=09/20/10	4:07:00 PM			
Sampling	Time=3	Weighting=A			
Record	Num=	28200	Weighting=Slow	CNEL(24hr)=	60.1
Leq	55.4	SEL	Value=109.3	Ldn(24hr)=	59.9
MAX	76.2		Min Leq1 hr =	45.5	1:47:21
MIN	38.1		Max Leq 1 hr =	62.5	18:43:57

Site A - West Side of Project Site

SPL	Time	Leq (1 hr. Avg.)	Ldn	CNEL
52.1	16:07:00		52.1	52.1
57.5	16:07:03		57.5	57.5
59.2	16:07:06		59.2	59.2
60.3	16:07:09		60.3	60.3
58.5	16:07:12		58.5	58.5
59.7	16:07:15		59.7	59.7
57.6	16:07:18		57.6	57.6
60.1	16:07:21		60.1	60.1
53.6	16:07:24		53.6	53.6
53.9	16:07:27		53.9	53.9
55.8	16:07:30		55.8	55.8
61.2	16:07:33		61.2	61.2
58.9	16:07:36		58.9	58.9
52.4	16:07:39		52.4	52.4
49.4	16:07:42		49.4	49.4
51.6	16:07:45		51.6	51.6
52.6	16:07:48		52.6	52.6
61.4	16:07:51		61.4	61.4
55.4	16:07:54		55.4	55.4
51.2	16:07:57		51.2	51.2
51.9	16:08:00		51.9	51.9
49.4	16:08:03		49.4	49.4
50.3	16:08:06		50.3	50.3
48.4	16:08:09		48.4	48.4
56.2	16:08:12		56.2	56.2
50.2	16:08:15		50.2	50.2
53.6	16:08:18		53.6	53.6
51.1	16:08:21		51.1	51.1
54.8	16:08:24		54.8	54.8
51.9	16:08:27		51.9	51.9
54.7	16:08:30		54.7	54.7
50.2	16:08:33		50.2	50.2
49.5	16:08:36		49.5	49.5
46	16:08:39		46	46
47.1	16:08:42		47.1	47.1
45.2	16:08:45		45.2	45.2
45.9	16:08:48		45.9	45.9
48.3	16:08:51		48.3	48.3
49.8	16:08:54		49.8	49.8
45.9	16:08:57		45.9	45.9
47	16:09:00		47	47
48.8	16:09:03		48.8	48.8
51.2	16:09:06		51.2	51.2
49.6	16:09:09		49.6	49.6
49.9	16:09:12		49.9	49.9
48.3	16:09:15		48.3	48.3
49.4	16:09:18		49.4	49.4
53.9	16:09:21		53.9	53.9
56.4	16:09:24		56.4	56.4
59.1	16:09:27		59.1	59.1
55	16:09:30		55	55
50.8	16:09:33		50.8	50.8
48	16:09:36		48	48
46.5	16:09:39		46.5	46.5
47.9	16:09:42		47.9	47.9
48.8	16:09:45		48.8	48.8
48.7	16:09:48		48.7	48.7
56.8	16:09:51		56.8	56.8
54.2	16:09:54		54.2	54.2
53.9	16:09:57		53.9	53.9
51.4	16:10:00		51.4	51.4
51.4	16:10:03		51.4	51.4
49.9	16:10:06		49.9	49.9
46.3	16:10:09		46.3	46.3
46.2	16:10:12		46.2	46.2
46.1	16:10:15		46.1	46.1
49.2	16:10:18		49.2	49.2
47	16:10:21		47	47
46.2	16:10:24		46.2	46.2
44.8	16:10:27		44.8	44.8
45.9	16:10:30		45.9	45.9
45.3	16:10:33		45.3	45.3
45.1	16:10:36		45.1	45.1
49.5	16:10:39		49.5	49.5
50	16:10:42		50	50
48.4	16:10:45		48.4	48.4
46.5	16:10:48		46.5	46.5
45.4	16:10:51		45.4	45.4
46.6	16:10:54		46.6	46.6
48.8	16:10:57		48.8	48.8
47.1	16:11:00		47.1	47.1
45.9	16:11:03		45.9	45.9
47.1	16:11:06		47.1	47.1

Site B - NE Corner of Project Site

Date	Time=09/20/10	4:14:00 PM			
Sampling	Time=3	Freq Weighting=A			
Record	Num=	28400	Weighting=Slow	CNEL(24hr)=	65.7
Leq	62.2	SEL	Value=111.6	Ldn(24hr)=	65.6
MAX	87.4		Min Leq1 hr =	45.7	1:34:51
MIN	43.1		Max Leq 1 hr =	67.0	13:42:39

Site B - NE Corner of Project Site

SPL	Time	Leq (1 hr. Avg.)	Ldn	CNEL
57.2	16:14:00		57.2	57.2
56.6	16:14:03		56.6	56.6
54.1	16:14:06		54.1	54.1
51.9	16:14:09		51.9	51.9
57.2	16:14:12		57.2	57.2
58.3	16:14:15		58.3	58.3
51	16:14:18		51	51
50.3	16:14:21		50.3	50.3
50.5	16:14:24		50.5	50.5
50.4	16:14:27		50.4	50.4
49.4	16:14:30		49.4	49.4
49.1	16:14:33		49.1	49.1
50.4	16:14:36		50.4	50.4
49.3	16:14:39		49.3	49.3
50	16:14:42		50	50
49.9	16:14:45		49.9	49.9
49.5	16:14:48		49.5	49.5
48.4	16:14:51		48.4	48.4
49.1	16:14:54		49.1	49.1
56.6	16:14:57		56.6	56.6
55.6	16:15:00		55.6	55.6
55.8	16:15:03		55.8	55.8
64.8	16:15:06		64.8	64.8
54.4	16:15:09		54.4	54.4
58.3	16:15:12		58.3	58.3
60.9	16:15:15		60.9	60.9
53.1	16:15:18		53.1	53.1
49.9	16:15:21		49.9	49.9
49.5	16:15:24		49.5	49.5
50.5	16:15:27		50.5	50.5
51	16:15:30		51	51
49.9	16:15:33		49.9	49.9
47.4	16:15:36		47.4	47.4
47.5	16:15:39		47.5	47.5
53.7	16:15:42		53.7	53.7
60.9	16:15:45		60.9	60.9
58.8	16:15:48		58.8	58.8
64.6	16:15:51		64.6	64.6
61	16:15:54		61	61
51.1	16:15:57		51.1	51.1
51.8	16:16:00		51.8	51.8
50.8	16:16:03		50.8	50.8
50	16:16:06		50	50
49.2	16:16:09		49.2	49.2
48.2	16:16:12		48.2	48.2
48.7	16:16:15		48.7	48.7
57.3	16:16:18		57.3	57.3
54.9	16:16:21		54.9	54.9
54.4	16:16:24		54.4	54.4
54.4	16:16:27		54.4	54.4
54.1	16:16:30		54.1	54.1
54.1	16:16:33		54.1	54.1
54.6	16:16:36		54.6	54.6
52.7	16:16:39		52.7	52.7
53.7	16:16:42		53.7	53.7
54.6	16:16:45		54.6	54.6
51.4	16:16:48		51.4	51.4
51.7	16:16:51		51.7	51.7
50	16:16:54		50	50
51.5	16:16:57		51.5	51.5
49	16:17:00		49	49
49	16:17:03		49	49
49	16:17:06		49	49
47.8	16:17:09		47.8	47.8
48.7	16:17:12		48.7	48.7
61.1	16:17:15		61.1	61.1
66.5	16:17:18		66.5	66.5
55.2	16:17:21		55.2	55.2
52.7	16:17:24		52.7	52.7
51.8	16:17:27		51.8	51.8
50.8	16:17:30		50.8	50.8
49.5	16:17:33		49.5	49.5
49.3	16:17:36		49.3	49.3
49.3	16:17:39		49.3	49.3
49.2	16:17:42		49.2	49.2
48.3	16:17:45		48.3	48.3
49.6	16:17:48		49.6	49.6
48.5	16:17:51		48.5	48.5
50	16:17:54		50	50
49.6	16:17:57		49.6	49.6
50.2	16:18:00		50.2	50.2
49.3	16:18:03		49.3	49.3
49.2	16:18:06		49.2	49.2

Site A - West Side of Project Site

SPL	Time	Leq (1 hr. Avg.)	Ldn	CNEL
47.5	16:11:09		47.5	47.5
46	16:11:12		46	46
49.7	16:11:15		49.7	49.7
47.8	16:11:18		47.8	47.8
44.9	16:11:21		44.9	44.9
44.1	16:11:24		44.1	44.1
45.3	16:11:27		45.3	45.3
44.1	16:11:30		44.1	44.1
48	16:11:33		48	48
45.3	16:11:36		45.3	45.3
45.5	16:11:39		45.5	45.5
45.9	16:11:42		45.9	45.9
46	16:11:45		46	46
45.8	16:11:48		45.8	45.8
46.4	16:11:51		46.4	46.4
48.1	16:11:54		48.1	48.1
50.5	16:11:57		50.5	50.5
47	16:12:00		47	47
47.1	16:12:03		47.1	47.1
47	16:12:06		47	47
48.8	16:12:09		48.8	48.8
48.2	16:12:12		48.2	48.2
46.6	16:12:15		46.6	46.6
45.8	16:12:18		45.8	45.8
45.2	16:12:21		45.2	45.2
45.6	16:12:24		45.6	45.6
47	16:12:27		47	47
47.6	16:12:30		47.6	47.6
45.8	16:12:33		45.8	45.8
46.4	16:12:36		46.4	46.4
45.7	16:12:39		45.7	45.7
45.5	16:12:42		45.5	45.5
48.2	16:12:45		48.2	48.2
45.8	16:12:48		45.8	45.8
47.2	16:12:51		47.2	47.2
46.1	16:12:54		46.1	46.1
45.4	16:12:57		45.4	45.4
45.4	16:13:00		45.4	45.4
49.1	16:13:03		49.1	49.1
49.1	16:13:06		49.1	49.1
46.2	16:13:09		46.2	46.2
45.6	16:13:12		45.6	45.6
46.9	16:13:15		46.9	46.9
46.8	16:13:18		46.8	46.8
48.2	16:13:21		48.2	48.2
45.3	16:13:24		45.3	45.3
47.1	16:13:27		47.1	47.1
49	16:13:30		49	49
51	16:13:33		51	51
61.6	16:13:36		61.6	61.6
66.8	16:13:39		66.8	66.8
53.2	16:13:42		53.2	53.2
46	16:13:45		46	46
45.8	16:13:48		45.8	45.8
45.8	16:13:51		45.8	45.8
45.5	16:13:54		45.5	45.5
44	16:13:57		44	44
44.1	16:14:00		44.1	44.1
45.1	16:14:03		45.1	45.1
45.6	16:14:06		45.6	45.6
49.8	16:14:09		49.8	49.8
45.5	16:14:12		45.5	45.5
45.5	16:14:15		45.5	45.5
45	16:14:18		45	45
48.2	16:14:21		48.2	48.2
51.8	16:14:24		51.8	51.8
46.3	16:14:27		46.3	46.3
47.4	16:14:30		47.4	47.4
45.4	16:14:33		45.4	45.4
46.5	16:14:36		46.5	46.5
46.9	16:14:39		46.9	46.9
52	16:14:42		52	52
47.5	16:14:45		47.5	47.5
45.8	16:14:48		45.8	45.8
46.3	16:14:51		46.3	46.3
45.9	16:14:54		45.9	45.9
50.3	16:14:57		50.3	50.3
48.7	16:15:00		48.7	48.7
45.1	16:15:03		45.1	45.1
46.6	16:15:06		46.6	46.6
46.2	16:15:09		46.2	46.2
46.7	16:15:12		46.7	46.7
47.9	16:15:15		47.9	47.9
50.6	16:15:18		50.6	50.6
50.1	16:15:21		50.1	50.1
52.4	16:15:24		52.4	52.4
49.1	16:15:27		49.1	49.1
50.4	16:15:30		50.4	50.4
51	16:15:33		51	51
48.7	16:15:36		48.7	48.7
48.8	16:15:39		48.8	48.8
48	16:15:42		48	48
47.2	16:15:45		47.2	47.2
49.4	16:15:48		49.4	49.4
47.6	16:15:51		47.6	47.6

Site B - NE Corner of Project Site

SPL	Time	Leq (1 hr. Avg.)	Ldn	CNEL
48.5	16:18:09		48.5	48.5
48.7	16:18:12		48.7	48.7
48.8	16:18:15		48.8	48.8
48.6	16:18:18		48.6	48.6
48.3	16:18:21		48.3	48.3
48.6	16:18:24		48.6	48.6
48.3	16:18:27		48.3	48.3
48.6	16:18:30		48.6	48.6
49.6	16:18:33		49.6	49.6
49.4	16:18:36		49.4	49.4
49.9	16:18:39		49.9	49.9
49.5	16:18:42		49.5	49.5
49.2	16:18:45		49.2	49.2
49.3	16:18:48		49.3	49.3
48.6	16:18:51		48.6	48.6
48.3	16:18:54		48.3	48.3
48.3	16:18:57		48.3	48.3
49	16:19:00		49	49
48.3	16:19:03		48.3	48.3
47.4	16:19:06		47.4	47.4
48.4	16:19:09		48.4	48.4
48.3	16:19:12		48.3	48.3
49.2	16:19:15		49.2	49.2
48.3	16:19:18		48.3	48.3
49	16:19:21		49	49
49.6	16:19:24		49.6	49.6
48.1	16:19:27		48.1	48.1
48.3	16:19:30		48.3	48.3
48.6	16:19:33		48.6	48.6
48.1	16:19:36		48.1	48.1
48.4	16:19:39		48.4	48.4
48.8	16:19:42		48.8	48.8
55.5	16:19:45		55.5	55.5
59.3	16:19:48		59.3	59.3
54.7	16:19:51		54.7	54.7
60.2	16:19:54		60.2	60.2
57.1	16:19:57		57.1	57.1
51.3	16:20:00		51.3	51.3
48	16:20:03		48	48
47.9	16:20:06		47.9	47.9
49.3	16:20:09		49.3	49.3
48.7	16:20:12		48.7	48.7
48.6	16:20:15		48.6	48.6
64.7	16:20:18		64.7	64.7
64.8	16:20:21		64.8	64.8
57.8	16:20:24		57.8	57.8
57.5	16:20:27		57.5	57.5
54.8	16:20:30		54.8	54.8
55.4	16:20:33		55.4	55.4
50.4	16:20:36		50.4	50.4
52	16:20:39		52	52
57.4	16:20:42		57.4	57.4
60.7	16:20:45		60.7	60.7
59.1	16:20:48		59.1	59.1
55.5	16:20:51		55.5	55.5
51.8	16:20:54		51.8	51.8
50.4	16:20:57		50.4	50.4
60	16:21:00		60	60
51.5	16:21:03		51.5	51.5
51.4	16:21:06		51.4	51.4
49	16:21:09		49	49
49.1	16:21:12		49.1	49.1
48.3	16:21:15		48.3	48.3
48.9	16:21:18		48.9	48.9
50	16:21:21		50	50
50.1	16:21:24		50.1	50.1
51.9	16:21:27		51.9	51.9
66.9	16:21:30		66.9	66.9
72.8	16:21:33		72.8	72.8
68.8	16:21:36		68.8	68.8
74.9	16:21:39		74.9	74.9
72.2	16:21:42		72.2	72.2
68.5	16:21:45		68.5	68.5
61	16:21:48		61	61
55.2	16:21:51		55.2	55.2
50.2	16:21:54		50.2	50.2
51	16:21:57		51	51
50.3	16:22:00		50.3	50.3
48.4	16:22:03		48.4	48.4
60.3	16:22:06		60.3	60.3
48.5	16:22:09		48.5	48.5
50.1	16:22:12		50.1	50.1
48.2	16:22:15		48.2	48.2
47.4	16:22:18		47.4	47.4
49.6	16:22:21		49.6	49.6
49.4	16:22:24		49.4	49.4
48.1	16:22:27		48.1	48.1
48.9	16:22:30		48.9	48.9
49.5	16:22:33		49.5	49.5
50	16:22:36		50	50
52.3	16:22:39		52.3	52.3
54.9	16:22:42		54.9	54.9
50.9	16:22:45		50.9	50.9
49.7	16:22:48		49.7	49.7
50.6	16:22:51		50.6	50.6



Noise measurement site M1 - looking north



Noise measurement site M1 - looking northeast



Noise measurement site M1 - looking southeast



Noise measurement site M1 - looking south



Noise measurement site M1 - looking northwest



Noise measurement site M2 - looking north



Noise measurement site M2 - looking northeast



Noise measurement site M2 - looking southeast



Noise measurement site M2 - looking northwest



Noise measurement site M3 - looking north



Noise measurement site M3 - looking east



Noise measurement site M3 - looking southeast



Noise measurement site M3 - looking southwest



Noise measurement site M3 - looking west



Noise measurement site A - looking north



Noise measurement site A - looking south



Noise measurement site A - looking southwest



Noise measurement site A - looking west



Noise measurement site A - looking northwest



Noise measurement site B - looking northeast



Noise measurement site B - looking east



Noise measurement site B - looking south



Noise measurement site B - looking west



Noise measurement site B - looking northwest

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/22/2010
Case Description: Trails of Manteca

		Baselines (dBA)			---- Receptor #1 ----			
Description	Land Use	Daytime	Evening	Night				
Single-family to west	Residential	60	55	50				

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		90	0
Dozer	No	40		81.7	240	0
Excavator	No	40		80.7	390	0
Scraper	No	40		83.6	540	0
Scraper	No	40		83.6	690	0
Scraper	No	40		83.6	840	0
Flat Bed Truck	No	40		74.3	990	0
Tractor	No	40	84		1140	0
Front End Loader	No	40		79.1	1290	0
Backhoe	No	40		77.6	1440	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		79.9	75.9	N/A	N/A	N/A	N/A
Dozer		68	64.1	N/A	N/A	N/A	N/A
Excavator		62.9	58.9	N/A	N/A	N/A	N/A
Scraper		62.9	58.9	N/A	N/A	N/A	N/A
Scraper		60.8	56.8	N/A	N/A	N/A	N/A
Scraper		59.1	55.1	N/A	N/A	N/A	N/A
Flat Bed Truck		48.3	44.3	N/A	N/A	N/A	N/A
Tractor		56.8	52.9	N/A	N/A	N/A	N/A
Front End Loader		50.9	46.9	N/A	N/A	N/A	N/A
Backhoe		48.4	44.4	N/A	N/A	N/A	N/A
	Total	**79.9**	**76.5**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Mobile Home to the west	Residential	60	55	50

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		300	0
Dozer	No	40		81.7	450	0
Excavator	No	40		80.7	600	0
Scraper	No	40		83.6	750	0
Scraper	No	40		83.6	900	0
Scraper	No	**40**		83.6	1050	0
Flat Bed Truck	No	40		74.3	1200	0
Tractor	No	40	84		1350	0
Front End Loader	No	40		79.1	1500	0
Backhoe	No	40		77.6	1650	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Grader	69.4	65.5	N/A	N/A	N/A	N/A
Dozer	62.6	58.6	N/A	N/A	N/A	N/A
Excavator	59.1	55.1	N/A	N/A	N/A	N/A
Scraper	60.1	56.1	N/A	N/A	N/A	N/A
Scraper	58.5	54.5	N/A	N/A	N/A	N/A
Scraper	57.1	53.2	N/A	N/A	N/A	N/A
Flat Bed Truck	46.6	42.7	N/A	N/A	N/A	N/A
Tractor	55.4	51.4	N/A	N/A	N/A	N/A
Front End Loader	49.6	45.6	N/A	N/A	N/A	N/A
Backhoe	47.2	43.2	N/A	N/A	N/A	N/A
Total	**69.4**	**67.5**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Single-family lots to north	Residential	60	55	50

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		320	0
Dozer	No	40		81.7	470	0
Excavator	No	40		80.7	620	0
Scraper	No	40		83.6	770	0
Scraper	No	40		83.6	920	0
Scraper	No	40		83.6	1070	0
Flat Bed Truck	No	40		74.3	1220	0
Tractor	No	40	84		1370	0
Front End Loader	No	40		79.1	1520	0
Backhoe	No	40		77.6	1670	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Grader	68.9	64.9	N/A	N/A	N/A	N/A
Dozer	62.2	58.2	N/A	N/A	N/A	N/A
Excavator	58.8	54.9	N/A	N/A	N/A	N/A
Scraper	59.8	55.9	N/A	N/A	N/A	N/A
Scraper	58.3	54.3	N/A	N/A	N/A	N/A
Scraper	57	53	N/A	N/A	N/A	N/A
Flat Bed Truck	46.5	42.5	N/A	N/A	N/A	N/A
Tractor	55.2	51.3	N/A	N/A	N/A	N/A
Front End Loader	49.5	45.5	N/A	N/A	N/A	N/A
Backhoe	47.1	43.1	N/A	N/A	N/A	N/A
Total	**68.9**	**67.1**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

	Vehicle Mix 1 (Arterials)				Vehicle Mix 2 (Collectors)				Vehicle Mix 3 (SR-120)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%	56.48%	10.53%	7.83%	81.60%
Medium Trucks	1.60%	0.80%	0.60%	3.00%	0.90%	0.90%	0.04%	1.84%	1.51%	1.28%	0.06%	2.85%
Heavy Trucks	3.50%	1.00%	0.50%	5.00%	0.35%	0.04%	0.35%	0.74%	9.33%	2.33%	3.89%	15.55%

Road Name: Yosemite Avenue **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 5700 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.64	0.06	-1.20	63.57	61.20	59.90	53.85	62.28	62.91	70 dBA:	**19**	**21**
Medium Trucks	77.62	-19.51	0.06	-1.20	56.98	38.23	41.24	35.22	42.42	43.23	65 dBA:	**41**	**46**
Heavy Trucks	82.14	-17.29	0.06	-1.20	63.72	48.37	48.95	41.16	49.69	50.58	60 dBA:	**89**	**98**
				Total:	**67.10**	**61.44**	**60.29**	**54.13**	**62.55**	**63.20**	55 dBA:	**191**	**211**

Road Name: McKinley Avenue **Segment: North of Yosemite Avenue**

Average Daily Traffic: 4900 Vehicles Vehicle Speed: 50 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	71.12	-5.51	-1.22	-1.20	63.20	61.07	59.76	53.75	62.17	62.79	70 dBA:	**18**	**20**
Medium Trucks	78.79	-22.74	-1.22	-1.20	53.63	32.38	38.40	20.11	33.25	36.01	65 dBA:	**39**	**43**
Heavy Trucks	83.02	-26.70	-1.22	-1.20	53.90	28.55	25.15	29.80	36.00	36.10	60 dBA:	**84**	**92**
				Total:	**64.09**	**61.08**	**59.79**	**53.77**	**62.18**	**62.81**	55 dBA:	**181**	**199**

Road Name: McKinley Avenue **Segment: North of Atherton Drive**

Average Daily Traffic: 1200 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-11.41	0.06	-1.20	56.80	54.43	53.14	47.08	55.51	56.14	70 dBA:	**7**	**7**
Medium Trucks	77.62	-26.27	0.06	-1.20	50.21	31.46	34.47	28.45	35.65	36.47	65 dBA:	**15**	**16**
Heavy Trucks	82.14	-24.06	0.06	-1.20	56.95	41.60	42.18	34.40	42.92	43.82	60 dBA:	**31**	**35**
				Total:	**60.33**	**54.67**	**53.52**	**47.36**	**55.79**	**56.43**	55 dBA:	**68**	**75**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

Road Name: McKinley Avenue **Segment: North of Woodward Avenue**

Average Daily Traffic: 1200 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-11.16	-1.22	-1.20	55.77	53.64	52.33	46.32	54.74	55.37	70 dBA:	**6**	**6**
Medium Trucks	77.62	-28.40	-1.22	-1.20	46.81	25.56	31.58	13.29	26.43	29.18	65 dBA:	**12**	**14**
Heavy Trucks	82.14	-32.35	-1.22	-1.20	47.37	22.02	18.62	23.27	29.47	29.56	60 dBA:	**27**	**30**
				Total:	**56.81**	**53.65**	**52.37**	**46.34**	**54.76**	**55.39**	55 dBA:	**58**	**64**

Road Name: McKinley Avenue **Segment: South of Woodward Avenue**

Average Daily Traffic: 1 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-42.20	-0.77	-1.20	25.17	22.80	21.51	15.45	23.88	24.51	70 dBA:	**0**	**0**
Medium Trucks	77.62	-57.07	-0.77	-1.20	18.58	-0.17	2.84	-3.18	4.02	4.84	65 dBA:	**0**	**0**
Heavy Trucks	82.14	-54.85	-0.77	-1.20	25.32	9.97	10.55	2.77	11.30	12.19	60 dBA:	**0**	**0**
				Total:	**28.70**	**23.04**	**21.90**	**15.74**	**24.16**	**24.81**	55 dBA:	**1**	**1**

Road Name: Airport Way **Segment: North of Yosemite Avenue**

Average Daily Traffic: 12500 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.72	-0.77	-1.20	64.67	62.30	61.00	54.95	63.38	64.01	70 dBA:	**23**	**25**
Medium Trucks	76.31	-15.59	-0.77	-1.20	58.75	40.00	43.01	36.99	44.19	45.01	65 dBA:	**49**	**54**
Heavy Trucks	81.16	-13.37	-0.77	-1.20	65.82	50.47	51.05	43.27	51.79	52.68	60 dBA:	**106**	**117**
				Total:	**68.75**	**62.60**	**61.48**	**55.30**	**63.72**	**64.37**	55 dBA:	**229**	**253**

Road Name: Airport Way **Segment: North of Daniels Street**

Average Daily Traffic: 13800 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.29	-0.77	-1.20	65.10	62.73	61.43	55.38	63.81	64.44	70 dBA:	**24**	**27**
Medium Trucks	76.31	-15.16	-0.77	-1.20	59.18	40.43	43.44	37.42	44.62	45.44	65 dBA:	**53**	**58**
Heavy Trucks	81.16	-12.94	-0.77	-1.20	66.25	50.90	51.48	43.70	52.22	53.11	60 dBA:	**113**	**125**
				Total:	**69.18**	**63.03**	**61.91**	**55.73**	**64.15**	**64.80**	55 dBA:	**244**	**270**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

Road Name: Airport Way **Segment: North of Woodward Avenue**

Average Daily Traffic: 5800 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-4.05	-0.77	-1.20	61.33	58.96	57.67	51.61	60.04	60.68	70 dBA:	**14**	**15**
Medium Trucks	76.31	-18.92	-0.77	-1.20	55.42	36.67	39.68	33.66	40.86	41.67	65 dBA:	**30**	**33**
Heavy Trucks	81.16	-16.70	-0.77	-1.20	62.48	47.13	47.71	39.93	48.46	49.35	60 dBA:	**64**	**70**
				Total:	**65.41**	**59.26**	**58.15**	**51.96**	**60.38**	**61.03**	55 dBA:	**137**	**152**

Road Name: Airport Way **Segment: South of Woodward Avenue**

Average Daily Traffic: 2800 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	72.73	-8.35	-1.22	-1.20	61.96	59.83	58.52	52.51	60.93	61.56	70 dBA:	**15**	**16**
Medium Trucks	79.85	-25.59	-1.22	-1.20	51.85	30.60	36.62	18.33	31.47	34.22	65 dBA:	**32**	**35**
Heavy Trucks	83.81	-29.55	-1.22	-1.20	51.85	26.50	23.10	27.75	33.95	34.05	60 dBA:	**69**	**76**
				Total:	**62.73**	**59.84**	**58.55**	**52.53**	**60.94**	**61.57**	55 dBA:	**149**	**165**

Road Name: Union Road **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 16900 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.17	-0.77	-1.20	64.31	61.94	60.64	54.59	63.02	63.65	70 dBA:	**22**	**24**
Medium Trucks	74.83	-13.70	-0.77	-1.20	59.16	40.41	43.42	37.40	44.60	45.41	65 dBA:	**47**	**52**
Heavy Trucks	80.05	-11.48	-0.77	-1.20	66.60	51.24	51.82	44.04	52.57	53.46	60 dBA:	**102**	**113**
				Total:	**69.08**	**62.32**	**61.25**	**55.03**	**63.45**	**64.11**	55 dBA:	**220**	**243**

Road Name: Union Road **Segment: North of Woodward Avenue**

Average Daily Traffic: 5100 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-5.12	0.06	-1.20	63.08	60.71	59.42	53.36	61.80	62.43	70 dBA:	**18**	**20**
Medium Trucks	77.62	-19.99	0.06	-1.20	56.50	37.74	40.76	34.73	41.94	42.75	65 dBA:	**38**	**42**
Heavy Trucks	82.14	-17.77	0.06	-1.20	63.23	47.88	48.46	40.68	49.21	50.10	60 dBA:	**82**	**91**
				Total:	**66.61**	**60.95**	**59.81**	**53.65**	**62.07**	**62.72**	55 dBA:	**178**	**196**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

Road Name: Union Road **Segment: South of Woodward Avenue**

Average Daily Traffic: 3400 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-6.88	-0.77	-1.20	60.49	58.11	56.82	50.77	59.20	59.83	70 dBA:	**12**	**13**
Medium Trucks	77.62	-21.75	-0.77	-1.20	53.90	35.15	38.16	32.14	39.34	40.15	65 dBA:	**26**	**28**
Heavy Trucks	82.14	-19.53	-0.77	-1.20	60.64	45.28	45.86	38.08	46.61	47.50	60 dBA:	**55**	**61**
				Total:	**64.02**	**58.36**	**57.21**	**51.05**	**59.47**	**60.12**	55 dBA:	**119**	**132**

Road Name: Main Street **Segment: North of Woodward Avenue**

Average Daily Traffic: 8700 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.71	-0.77	-1.20	61.42	59.05	57.76	51.70	60.14	60.77	70 dBA:	**14**	**16**
Medium Trucks	74.83	-16.58	-0.77	-1.20	56.28	37.52	40.53	34.51	41.72	42.53	65 dBA:	**30**	**34**
Heavy Trucks	80.05	-14.36	-0.77	-1.20	63.71	48.36	48.94	41.16	49.69	50.58	60 dBA:	**65**	**72**
				Total:	**66.19**	**59.43**	**58.37**	**52.15**	**60.57**	**61.22**	55 dBA:	**141**	**156**

Road Name: Manteca Road **Segment: South of Woodward Avenue**

Average Daily Traffic: 5600 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.72	-0.77	-1.20	62.65	60.28	58.99	52.93	61.37	62.00	70 dBA:	**17**	**18**
Medium Trucks	77.62	-19.58	-0.77	-1.20	56.06	37.31	40.32	34.30	41.51	42.32	65 dBA:	**36**	**40**
Heavy Trucks	82.14	-17.37	-0.77	-1.20	62.80	47.45	48.03	40.25	48.78	49.67	60 dBA:	**77**	**85**
				Total:	**66.18**	**60.52**	**59.38**	**53.22**	**61.64**	**62.29**	55 dBA:	**166**	**184**

Road Name: Yosemite Avenue **Segment: West of McKinley Avenue**

Average Daily Traffic: 5400 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 1 | Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.88	0.06	-1.20	63.33	60.96	59.67	53.61	62.04	62.68	70 dBA:	**18**	**20**
Medium Trucks	77.62	-19.74	0.06	-1.20	56.74	37.99	41.00	34.98	42.18	43.00	65 dBA:	**40**	**44**
Heavy Trucks	82.14	-17.52	0.06	-1.20	63.48	48.13	48.71	40.93	49.46	50.35	60 dBA:	**86**	**95**
				Total:	**66.86**	**61.20**	**60.06**	**53.90**	**62.32**	**62.97**	55 dBA:	**185**	**204**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

Road Name: Yosemite Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 8800 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-2.51	-1.22	-1.20	64.42	62.30	60.98	54.97	63.39	64.02	70 dBA:	**22**	**24**
Medium Trucks	77.62	-19.74	-1.22	-1.20	55.46	34.21	40.23	21.94	35.08	37.83	65 dBA:	**47**	**52**
Heavy Trucks	82.14	-23.70	-1.22	-1.20	56.02	30.67	27.27	31.92	38.12	38.22	60 dBA:	**101**	**112**
				Total:	**65.46**	**62.31**	**61.02**	**55.00**	**63.41**	**64.04**	55 dBA:	**218**	**240**

Road Name: Yosemite Avenue **Segment: East of Airport Way**

Average Daily Traffic: 14500 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.51	-0.77	-1.20	63.64	61.27	59.98	53.92	62.35	62.98	70 dBA:	**20**	**22**
Medium Trucks	74.83	-14.36	-0.77	-1.20	58.49	39.74	42.75	36.73	43.93	44.75	65 dBA:	**43**	**47**
Heavy Trucks	80.05	-12.14	-0.77	-1.20	65.93	50.58	51.16	43.38	51.91	52.80	60 dBA:	**92**	**102**
				Total:	**68.41**	**61.65**	**60.58**	**54.36**	**62.79**	**63.44**	55 dBA:	**198**	**219**

Road Name: Daniels Street **Segment: West of Airport Way**

Average Daily Traffic: 11600 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	0.21	-0.77	-1.20	60.74	58.37	57.08	51.03	59.46	60.09	70 dBA:	**13**	**15**
Medium Trucks	73.11	-14.66	-0.77	-1.20	56.48	37.73	40.74	34.72	41.92	42.73	65 dBA:	**29**	**32**
Heavy Trucks	80.26	-12.44	-0.77	-1.20	65.84	50.49	51.07	43.29	51.82	52.71	60 dBA:	**62**	**69**
				Total:	**67.38**	**59.06**	**58.13**	**51.79**	**60.21**	**60.88**	55 dBA:	**134**	**148**

Road Name: Daniels Street **Segment: East of Airport Way**

Average Daily Traffic: 3000 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-5.67	-0.77	-1.20	54.87	52.50	51.21	45.15	53.58	54.21	70 dBA:	**5**	**6**
Medium Trucks	73.11	-20.53	-0.77	-1.20	50.61	31.86	34.87	28.85	36.05	36.86	65 dBA:	**12**	**13**
Heavy Trucks	80.26	-18.32	-0.77	-1.20	59.97	44.62	45.20	37.42	45.95	46.84	60 dBA:	**25**	**28**
				Total:	**61.51**	**53.19**	**52.26**	**45.91**	**54.34**	**55.01**	55 dBA:	**54**	**60**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: West of McKinley Avenue**

Average Daily Traffic: 1300 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-10.81	-1.22	-1.20	56.12	53.99	52.68	46.67	55.09	55.71	70 dBA:	**6**	**7**
Medium Trucks	77.62	-28.05	-1.22	-1.20	47.16	25.91	31.93	13.63	26.78	29.53	65 dBA:	**13**	**14**
Heavy Trucks	82.14	-32.01	-1.22	-1.20	47.72	22.37	18.97	23.62	29.82	29.91	60 dBA:	**28**	**31**
				Total:	**57.16**	**54.00**	**52.72**	**46.69**	**55.11**	**55.74**	55 dBA:	**61**	**67**

Road Name: Woodward Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 1400 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-9.40	-1.22	-1.20	53.29	51.17	49.86	43.85	52.27	52.89	70 dBA:	**4**	**4**
Medium Trucks	74.83	-26.64	-1.22	-1.20	45.77	24.53	30.55	12.25	25.40	28.15	65 dBA:	**9**	**9**
Heavy Trucks	80.05	-30.59	-1.22	-1.20	47.04	21.69	18.29	22.93	29.13	29.23	60 dBA:	**18**	**20**
				Total:	**54.80**	**51.18**	**49.91**	**43.88**	**52.30**	**52.93**	55 dBA:	**40**	**44**

Road Name: Woodward Avenue **Segment: East of Airport Way**

Average Daily Traffic: 2800 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-7.48	-1.22	-1.20	59.45	57.32	56.01	50.00	58.42	59.05	70 dBA:	**10**	**11**
Medium Trucks	77.62	-24.72	-1.22	-1.20	50.49	29.24	35.26	16.97	30.11	32.86	65 dBA:	**22**	**24**
Heavy Trucks	82.14	-28.67	-1.22	-1.20	51.05	25.70	22.30	26.95	33.15	33.24	60 dBA:	**47**	**52**
				Total:	**60.49**	**57.33**	**56.05**	**50.02**	**58.44**	**59.07**	55 dBA:	**102**	**112**

Road Name: Woodward Avenue **Segment: East of Union Road**

Average Daily Traffic: 3400 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-6.64	-1.22	-1.20	60.29	58.17	56.85	50.84	59.26	59.89	70 dBA:	**12**	**13**
Medium Trucks	77.62	-23.87	-1.22	-1.20	51.33	30.08	36.10	17.81	30.95	33.70	65 dBA:	**25**	**27**
Heavy Trucks	82.14	-27.83	-1.22	-1.20	51.89	26.54	23.14	27.79	33.99	34.09	60 dBA:	**54**	**59**
				Total:	**61.33**	**58.18**	**56.89**	**50.87**	**59.28**	**59.91**	55 dBA:	**116**	**128**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITHOUT PROJECT **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: East of Main Street**

Average Daily Traffic: 6400 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.14	-0.77	-1.20	63.23	60.86	59.57	53.51	61.95	62.58	70 dBA:	**18**	**20**
Medium Trucks	77.62	-19.00	-0.77	-1.20	56.64	37.89	40.90	34.88	42.08	42.90	65 dBA:	**39**	**43**
Heavy Trucks	82.14	-16.79	-0.77	-1.20	63.38	48.03	48.61	40.83	49.36	50.25	60 dBA:	**84**	**93**
				Total:	**66.76**	**61.10**	**59.96**	**53.80**	**62.22**	**62.87**	55 dBA:	**182**	**201**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

	Vehicle Mix 1 (Arterials)				Vehicle Mix 2 (Collectors)				Vehicle Mix 3 (SR-120)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%	56.48%	10.53%	7.83%	81.60%
Medium Trucks	1.60%	0.80%	0.60%	3.00%	0.90%	0.90%	0.04%	1.84%	1.51%	1.28%	0.06%	2.85%
Heavy Trucks	3.50%	1.00%	0.50%	5.00%	0.35%	0.04%	0.35%	0.74%	9.33%	2.33%	3.89%	15.55%

Road Name: Yosemite Avenue **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 8800 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-2.75	0.06	-1.20	65.45	63.08	61.79	55.73	64.17	64.80	70 dBA:	**26**	**28**
Medium Trucks	77.62	-17.62	0.06	-1.20	58.86	40.11	43.12	37.10	44.31	45.12	65 dBA:	**55**	**61**
Heavy Trucks	82.14	-15.40	0.06	-1.20	65.60	50.25	50.83	43.05	51.58	52.47	60 dBA:	**119**	**131**
				Total:	**68.98**	**63.32**	**62.18**	**56.02**	**64.44**	**65.09**	55 dBA:	**256**	**282**

Road Name: McKinley Avenue **Segment: North of Yosemite Avenue**

Average Daily Traffic: 5500 Vehicles Vehicle Speed: 50 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	71.12	-5.01	-1.22	-1.20	63.70	61.57	60.26	54.25	62.67	63.30	70 dBA:	**20**	**21**
Medium Trucks	78.79	-22.24	-1.22	-1.20	54.13	32.88	38.90	20.61	33.76	36.51	65 dBA:	**42**	**46**
Heavy Trucks	83.02	-26.20	-1.22	-1.20	54.40	29.05	25.65	30.30	36.50	36.60	60 dBA:	**91**	**100**
				Total:	**64.59**	**61.58**	**60.29**	**54.27**	**62.68**	**63.31**	55 dBA:	**195**	**215**

Road Name: McKinley Avenue **Segment: North of Atherton Drive**

Average Daily Traffic: 6100 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.35	0.06	-1.20	63.86	61.49	60.20	54.14	62.57	63.20	70 dBA:	**20**	**22**
Medium Trucks	77.62	-19.21	0.06	-1.20	57.27	38.52	41.53	35.51	42.71	43.53	65 dBA:	**43**	**48**
Heavy Trucks	82.14	-16.99	0.06	-1.20	64.01	48.66	49.24	41.46	49.99	50.88	60 dBA:	**93**	**103**
				Total:	**67.39**	**61.73**	**60.59**	**54.43**	**62.85**	**63.50**	55 dBA:	**200**	**221**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: McKinley Avenue **Segment: North of Woodward Avenue**

Average Daily Traffic: 6100 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.10	-1.22	-1.20	62.83	60.71	59.39	53.38	61.80	62.43	70 dBA:	**17**	**19**
Medium Trucks	77.62	-21.34	-1.22	-1.20	53.87	32.62	38.64	20.35	33.49	36.24	65 dBA:	**37**	**41**
Heavy Trucks	82.14	-25.29	-1.22	-1.20	54.43	29.08	25.68	30.33	36.53	36.63	60 dBA:	**79**	**87**
				Total:	**63.87**	**60.72**	**59.43**	**53.40**	**61.82**	**62.45**	55 dBA:	**171**	**188**

Road Name: McKinley Avenue **Segment: South of Woodward Avenue**

Average Daily Traffic: 1 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-42.20	-0.77	-1.20	25.17	22.80	21.51	15.45	23.88	24.51	70 dBA:	**0**	**0**
Medium Trucks	77.62	-57.07	-0.77	-1.20	18.58	-0.17	2.84	-3.18	4.02	4.84	65 dBA:	**0**	**0**
Heavy Trucks	82.14	-54.85	-0.77	-1.20	25.32	9.97	10.55	2.77	11.30	12.19	60 dBA:	**0**	**0**
				Total:	**28.70**	**23.04**	**21.90**	**15.74**	**24.16**	**24.81**	55 dBA:	**1**	**1**

Road Name: Airport Way **Segment: North of Yosemite Avenue**

Average Daily Traffic: 13400 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.42	-0.77	-1.20	64.97	62.60	61.30	55.25	63.68	64.31	70 dBA:	**24**	**26**
Medium Trucks	76.31	-15.28	-0.77	-1.20	59.06	40.30	43.32	37.29	44.50	45.31	65 dBA:	**52**	**57**
Heavy Trucks	81.16	-13.07	-0.77	-1.20	66.12	50.77	51.35	43.57	52.10	52.99	60 dBA:	**111**	**123**
				Total:	**69.05**	**62.90**	**61.78**	**55.60**	**64.02**	**64.67**	55 dBA:	**240**	**265**

Road Name: Airport Way **Segment: North of Daniels Street**

Average Daily Traffic: 14700 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.01	-0.77	-1.20	65.37	63.00	61.71	55.65	64.08	64.71	70 dBA:	**25**	**28**
Medium Trucks	76.31	-14.88	-0.77	-1.20	59.46	40.71	43.72	37.70	44.90	45.71	65 dBA:	**55**	**61**
Heavy Trucks	81.16	-12.66	-0.77	-1.20	66.52	51.17	51.75	43.97	52.50	53.39	60 dBA:	**118**	**131**
				Total:	**69.45**	**63.30**	**62.19**	**56.00**	**64.42**	**65.07**	55 dBA:	**255**	**282**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Airport Way **Segment: North of Woodward Avenue**

Average Daily Traffic: 13900 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	-0.26	-0.77	-1.20	65.13	62.76	61.46	55.41	63.84	64.47	70 dBA:	**25**	**27**
Medium Trucks	76.31	-15.12	-0.77	-1.20	59.21	40.46	43.47	37.45	44.66	45.47	65 dBA:	**53**	**58**
Heavy Trucks	81.16	-12.91	-0.77	-1.20	66.28	50.93	51.51	43.73	52.26	53.15	60 dBA:	**114**	**126**
				Total:	**69.21**	**63.06**	**61.94**	**55.76**	**64.18**	**64.83**	55 dBA:	**246**	**271**

Road Name: Airport Way **Segment: South of Woodward Avenue**

Average Daily Traffic: 3300 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	72.73	-7.64	-1.22	-1.20	62.67	60.55	59.23	53.22	61.64	62.27	70 dBA:	**17**	**18**
Medium Trucks	79.85	-24.88	-1.22	-1.20	52.56	31.31	37.33	19.04	32.18	34.93	65 dBA:	**36**	**40**
Heavy Trucks	83.81	-28.83	-1.22	-1.20	52.57	27.22	23.82	28.46	34.66	34.76	60 dBA:	**77**	**85**
				Total:	**63.44**	**60.55**	**59.26**	**53.24**	**61.66**	**62.28**	55 dBA:	**167**	**184**

Road Name: Union Road **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 17400 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.30	-0.77	-1.20	64.43	62.06	60.77	54.71	63.15	63.78	70 dBA:	**22**	**25**
Medium Trucks	74.83	-13.57	-0.77	-1.20	59.29	40.53	43.55	37.52	44.73	45.54	65 dBA:	**48**	**53**
Heavy Trucks	80.05	-11.35	-0.77	-1.20	66.72	51.37	51.95	44.17	52.70	53.59	60 dBA:	**104**	**115**
				Total:	**69.20**	**62.45**	**61.38**	**55.16**	**63.58**	**64.23**	55 dBA:	**224**	**248**

Road Name: Union Road **Segment: North of Woodward Avenue**

Average Daily Traffic: 7200 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.63	0.06	-1.20	64.58	62.21	60.92	54.86	63.29	63.92	70 dBA:	**22**	**25**
Medium Trucks	77.62	-18.49	0.06	-1.20	57.99	39.24	42.25	36.23	43.43	44.25	65 dBA:	**48**	**53**
Heavy Trucks	82.14	-16.27	0.06	-1.20	64.73	49.38	49.96	42.18	50.71	51.60	60 dBA:	**104**	**115**
				Total:	**68.11**	**62.45**	**61.31**	**55.15**	**63.57**	**64.22**	55 dBA:	**224**	**247**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS — **Trails of Manteca**

Site Conditions: Soft

Road Name: Union Road — **Segment: South of Woodward Avenue**

Average Daily Traffic: 3600 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 1 — Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-6.64	-0.77	-1.20	60.73	58.36	57.07	51.01	59.45	60.08	70 dBA:	**12**	**14**
Medium Trucks	77.62	-21.50	-0.77	-1.20	54.15	35.39	38.41	32.38	39.59	40.40	65 dBA:	**27**	**29**
Heavy Trucks	82.14	-19.28	-0.77	-1.20	60.88	45.53	46.11	38.33	46.86	47.75	60 dBA:	**57**	**63**
				Total:	**64.26**	**58.60**	**57.46**	**51.30**	**59.72**	**60.37**	55 dBA:	**124**	**137**

Road Name: Main Street — **Segment: North of Woodward Avenue**

Average Daily Traffic: 9100 Vehicles — Vehicle Speed: 35 MPH — Vehicle Mix: 1 — Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.52	-0.77	-1.20	61.62	59.25	57.95	51.90	60.33	60.96	70 dBA:	**15**	**16**
Medium Trucks	74.83	-16.38	-0.77	-1.20	56.47	37.72	40.73	34.71	41.91	42.72	65 dBA:	**31**	**35**
Heavy Trucks	80.05	-14.17	-0.77	-1.20	63.91	48.56	49.14	41.35	49.88	50.77	60 dBA:	**67**	**75**
				Total:	**66.39**	**59.63**	**58.56**	**52.34**	**60.76**	**61.42**	55 dBA:	**145**	**161**

Road Name: Manteca Road — **Segment: South of Woodward Avenue**

Average Daily Traffic: 5800 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 1 — Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.57	-0.77	-1.20	62.81	60.43	59.14	53.09	61.52	62.15	70 dBA:	**17**	**19**
Medium Trucks	77.62	-19.43	-0.77	-1.20	56.22	37.47	40.48	34.46	41.66	42.47	65 dBA:	**37**	**40**
Heavy Trucks	82.14	-17.21	-0.77	-1.20	62.95	47.60	48.18	40.40	48.93	49.82	60 dBA:	**79**	**87**
				Total:	**66.34**	**60.68**	**59.53**	**53.37**	**61.79**	**62.44**	55 dBA:	**170**	**188**

Road Name: Yosemite Avenue — **Segment: West of McKinley Avenue**

Average Daily Traffic: 8500 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 1 — Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-2.91	0.06	-1.20	65.30	62.93	61.64	55.58	64.01	64.65	70 dBA:	**25**	**28**
Medium Trucks	77.62	-17.77	0.06	-1.20	58.71	39.96	42.97	36.95	44.15	44.97	65 dBA:	**54**	**59**
Heavy Trucks	82.14	-15.55	0.06	-1.20	65.45	50.10	50.68	42.90	51.43	52.32	60 dBA:	**116**	**128**
				Total:	**68.83**	**63.17**	**62.03**	**55.87**	**64.29**	**64.94**	55 dBA:	**250**	**276**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS — **Trails of Manteca**

Site Conditions: Soft

Road Name: Yosemite Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 10000 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-1.95	-1.22	-1.20	64.98	62.85	61.54	55.53	63.95	64.57	70 dBA:	**24**	**26**
Medium Trucks	77.62	-19.19	-1.22	-1.20	56.02	34.77	40.79	22.49	35.64	38.39	65 dBA:	**51**	**56**
Heavy Trucks	82.14	-23.15	-1.22	-1.20	56.58	31.23	27.83	32.48	38.68	38.77	60 dBA:	**110**	**121**
				Total:	**66.02**	**62.86**	**61.58**	**55.55**	**63.97**	**64.60**	55 dBA:	**238**	**262**

Road Name: Yosemite Avenue **Segment: East of Airport Way**

Average Daily Traffic: 15400 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.77	-0.77	-1.20	63.90	61.53	60.24	54.18	62.62	63.25	70 dBA:	**21**	**23**
Medium Trucks	74.83	-14.10	-0.77	-1.20	58.76	40.00	43.01	36.99	44.20	45.01	65 dBA:	**44**	**49**
Heavy Trucks	80.05	-11.88	-0.77	-1.20	66.19	50.84	51.42	43.64	52.17	53.06	60 dBA:	**96**	**106**
				Total:	**68.67**	**61.91**	**60.85**	**54.63**	**63.05**	**63.70**	55 dBA:	**206**	**228**

Road Name: Daniels Street **Segment: West of Airport Way**

Average Daily Traffic: 12600 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	0.56	-0.77	-1.20	61.10	58.73	57.44	51.38	59.82	60.45	70 dBA:	**14**	**16**
Medium Trucks	73.11	-14.30	-0.77	-1.20	56.84	38.09	41.10	35.08	42.28	43.09	65 dBA:	**30**	**34**
Heavy Trucks	80.26	-12.08	-0.77	-1.20	66.20	50.85	51.43	43.65	52.18	53.07	60 dBA:	**65**	**73**
				Total:	**67.74**	**59.42**	**58.49**	**52.15**	**60.57**	**61.24**	55 dBA:	**141**	**156**

Road Name: Daniels Street **Segment: East of Airport Way**

Average Daily Traffic: 3400 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-5.12	-0.77	-1.20	55.41	53.04	51.75	45.70	54.13	54.76	70 dBA:	**6**	**7**
Medium Trucks	73.11	-19.99	-0.77	-1.20	51.15	32.40	35.41	29.39	36.59	37.40	65 dBA:	**13**	**14**
Heavy Trucks	80.26	-17.77	-0.77	-1.20	60.52	45.16	45.74	37.96	46.49	47.38	60 dBA:	**27**	**30**
				Total:	**62.05**	**53.73**	**52.80**	**46.46**	**54.88**	**55.55**	55 dBA:	**59**	**65**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS — **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue — **Segment: West of McKinley Avenue**

Average Daily Traffic: 19100 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.86	-1.22	-1.20	67.79	65.66	64.35	58.34	66.76	67.38	70 dBA:	**37**	**40**
Medium Trucks	77.62	-16.38	-1.22	-1.20	58.83	37.58	43.60	25.30	38.45	41.20	65 dBA:	**79**	**87**
Heavy Trucks	82.14	-20.33	-1.22	-1.20	59.39	34.04	30.64	35.29	41.49	41.58	60 dBA:	**170**	**187**
				Total:	**68.83**	**65.67**	**64.39**	**58.36**	**66.78**	**67.41**	55 dBA:	**366**	**403**

Road Name: Woodward Avenue — **Segment: East of McKinley Avenue**

Average Daily Traffic: 14300 Vehicles — Vehicle Speed: 35 MPH — Vehicle Mix: 2 — Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.69	-1.22	-1.20	63.39	61.26	59.95	53.94	62.36	62.98	70 dBA:	**19**	**21**
Medium Trucks	74.83	-16.54	-1.22	-1.20	55.87	34.62	40.64	22.34	35.49	38.24	65 dBA:	**40**	**44**
Heavy Trucks	80.05	-20.50	-1.22	-1.20	57.13	31.78	28.38	33.03	39.23	39.32	60 dBA:	**87**	**95**
				Total:	**64.89**	**61.28**	**60.00**	**53.98**	**62.39**	**63.02**	55 dBA:	**186**	**205**

Road Name: Woodward Avenue — **Segment: East of Airport Way**

Average Daily Traffic: 7100 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.44	-1.22	-1.20	63.49	61.37	60.05	54.04	62.46	63.09	70 dBA:	**19**	**21**
Medium Trucks	77.62	-20.68	-1.22	-1.20	54.53	33.28	39.30	21.01	34.15	36.90	65 dBA:	**41**	**45**
Heavy Trucks	82.14	-24.63	-1.22	-1.20	55.09	29.74	26.34	30.99	37.19	37.28	60 dBA:	**88**	**97**
				Total:	**64.53**	**61.38**	**60.09**	**54.06**	**62.48**	**63.11**	55 dBA:	**189**	**208**

Road Name: Woodward Avenue — **Segment: East of Union Road**

Average Daily Traffic: 5400 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-4.63	-1.22	-1.20	62.30	60.18	58.86	52.85	61.27	61.90	70 dBA:	**16**	**17**
Medium Trucks	77.62	-21.87	-1.22	-1.20	53.34	32.09	38.11	19.82	32.96	35.71	65 dBA:	**34**	**37**
Heavy Trucks	82.14	-25.82	-1.22	-1.20	53.90	28.55	25.15	29.80	36.00	36.10	60 dBA:	**73**	**81**
				Total:	**63.34**	**60.19**	**58.90**	**52.88**	**61.29**	**61.92**	55 dBA:	**158**	**174**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: East of Main Street**

Average Daily Traffic: 7300 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.57	-0.77	-1.20	63.80	61.43	60.14	54.09	62.52	63.15	70 dBA:	**20**	**22**
Medium Trucks	77.62	-18.43	-0.77	-1.20	57.22	38.47	41.48	35.45	42.66	43.47	65 dBA:	**43**	**47**
Heavy Trucks	82.14	-16.21	-0.77	-1.20	63.95	48.60	49.18	41.40	49.93	50.82	60 dBA:	**92**	**102**
				Total:	**67.33**	**61.67**	**60.53**	**54.37**	**62.79**	**63.44**	55 dBA:	**198**	**219**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

	Vehicle Mix 1 (Arterials)				Vehicle Mix 2 (Collectors)				Vehicle Mix 3 (SR-120)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%	56.48%	10.53%	7.83%	81.60%
Medium Trucks	1.60%	0.80%	0.60%	3.00%	0.90%	0.90%	0.04%	1.84%	1.51%	1.28%	0.06%	2.85%
Heavy Trucks	3.50%	1.00%	0.50%	5.00%	0.35%	0.04%	0.35%	0.74%	9.33%	2.33%	3.89%	15.55%

Road Name: Yosemite Avenue **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 16200 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-0.10	0.06	-1.20	68.10	65.73	64.44	58.38	66.82	67.45	70 dBA:	**38**	**42**
Medium Trucks	77.62	-14.97	0.06	-1.20	61.51	42.76	45.77	39.75	46.96	47.77	65 dBA:	**83**	**91**
Heavy Trucks	82.14	-12.75	0.06	-1.20	68.25	52.90	53.48	45.70	54.23	55.12	60 dBA:	**178**	**197**
				Total:	**71.63**	**65.97**	**64.83**	**58.67**	**67.09**	**67.74**	55 dBA:	**384**	**424**

Road Name: McKinley Avenue **Segment: North of Yosemite Avenue**

Average Daily Traffic: 18100 Vehicles Vehicle Speed: 50 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	71.12	0.17	-1.22	-1.20	68.87	66.75	65.43	59.42	67.84	68.47	70 dBA:	**43**	**48**
Medium Trucks	78.79	-17.07	-1.22	-1.20	59.31	38.06	44.08	25.78	38.93	41.68	65 dBA:	**93**	**102**
Heavy Trucks	83.02	-21.03	-1.22	-1.20	59.58	34.23	30.83	35.48	41.67	41.77	60 dBA:	**200**	**221**
				Total:	**69.76**	**66.76**	**65.47**	**59.44**	**67.86**	**68.49**	55 dBA:	**432**	**476**

Road Name: McKinley Avenue **Segment: North of Atherton Drive**

Average Daily Traffic: 28900 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.41	0.06	-1.20	70.62	68.25	66.95	60.90	69.33	69.96	70 dBA:	**56**	**62**
Medium Trucks	77.62	-12.46	0.06	-1.20	64.03	45.28	48.29	42.27	49.47	50.28	65 dBA:	**122**	**134**
Heavy Trucks	82.14	-10.24	0.06	-1.20	70.77	55.42	56.00	48.21	56.74	57.63	60 dBA:	**262**	**289**
				Total:	**74.15**	**68.49**	**67.34**	**61.18**	**69.60**	**70.25**	55 dBA:	**565**	**624**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: McKinley Avenue **Segment: North of Woodward Avenue**

Average Daily Traffic: 28900 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.66	-1.22	-1.20	69.58	67.46	66.15	60.14	68.56	69.18	70 dBA:	**48**	**53**
Medium Trucks	77.62	-14.58	-1.22	-1.20	60.62	39.38	45.40	27.10	40.25	43.00	65 dBA:	**104**	**114**
Heavy Trucks	82.14	-18.54	-1.22	-1.20	61.19	35.84	32.44	37.09	43.29	43.38	60 dBA:	**224**	**247**
				Total:	**70.63**	**67.47**	**66.19**	**60.16**	**68.58**	**69.21**	55 dBA:	**482**	**531**

Road Name: McKinley Avenue **Segment: South of Woodward Avenue**

Average Daily Traffic: 17500 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.23	-0.77	-1.20	67.60	65.23	63.94	57.88	66.31	66.94	70 dBA:	**36**	**39**
Medium Trucks	77.62	-14.64	-0.77	-1.20	61.01	42.26	45.27	39.25	46.45	47.27	65 dBA:	**77**	**85**
Heavy Trucks	82.14	-12.42	-0.77	-1.20	67.75	52.40	52.98	45.20	53.73	54.62	60 dBA:	**165**	**182**
				Total:	**71.13**	**65.47**	**64.33**	**58.17**	**66.59**	**67.24**	55 dBA:	**355**	**393**

Road Name: Airport Way **Segment: North of Yosemite Avenue**

Average Daily Traffic: 29600 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.02	-0.77	-1.20	68.41	66.04	64.75	58.69	67.12	67.75	70 dBA:	**41**	**45**
Medium Trucks	76.31	-11.84	-0.77	-1.20	62.50	43.75	46.76	40.74	47.94	48.75	65 dBA:	**88**	**97**
Heavy Trucks	81.16	-9.62	-0.77	-1.20	69.56	54.21	54.79	47.01	55.54	56.43	60 dBA:	**189**	**208**
				Total:	**72.49**	**66.34**	**65.23**	**59.04**	**67.46**	**68.11**	55 dBA:	**406**	**449**

Road Name: Airport Way **Segment: North of Daniels Street**

Average Daily Traffic: 24300 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.17	-0.77	-1.20	67.55	65.18	63.89	57.83	66.27	66.90	70 dBA:	**36**	**39**
Medium Trucks	76.31	-12.70	-0.77	-1.20	61.64	42.89	45.90	39.88	47.08	47.89	65 dBA:	**77**	**85**
Heavy Trucks	81.16	-10.48	-0.77	-1.20	68.71	53.35	53.93	46.15	54.68	55.57	60 dBA:	**165**	**183**
				Total:	**71.64**	**65.48**	**64.37**	**58.18**	**66.61**	**67.26**	55 dBA:	**356**	**394**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Airport Way **Segment: North of Woodward Avenue**

Average Daily Traffic: 19100 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.12	-0.77	-1.20	66.51	64.14	62.84	56.79	65.22	65.85	70 dBA:	**30**	**34**
Medium Trucks	76.31	-13.74	-0.77	-1.20	60.59	41.84	44.85	38.83	46.04	46.85	65 dBA:	**65**	**72**
Heavy Trucks	81.16	-11.53	-0.77	-1.20	67.66	52.31	52.89	45.11	53.64	54.53	60 dBA:	**141**	**156**
				Total:	**70.59**	**64.44**	**63.32**	**57.14**	**65.56**	**66.21**	55 dBA:	**304**	**335**

Road Name: Airport Way **Segment: South of Woodward Avenue**

Average Daily Traffic: 9500 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	72.73	-3.05	-1.22	-1.20	67.26	65.14	63.83	57.81	66.23	66.86	70 dBA:	**34**	**37**
Medium Trucks	79.85	-20.28	-1.22	-1.20	57.15	35.90	41.92	23.63	36.77	39.53	65 dBA:	**73**	**80**
Heavy Trucks	83.81	-24.24	-1.22	-1.20	57.16	31.81	28.41	33.06	39.26	39.35	60 dBA:	**157**	**172**
				Total:	**68.04**	**65.15**	**63.86**	**57.83**	**66.25**	**66.88**	55 dBA:	**337**	**371**

Road Name: Union Road **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 31900 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	3.93	-0.77	-1.20	67.07	64.69	63.40	57.35	65.78	66.41	70 dBA:	**34**	**37**
Medium Trucks	74.83	-10.94	-0.77	-1.20	61.92	43.17	46.18	40.16	47.36	48.17	65 dBA:	**72**	**80**
Heavy Trucks	80.05	-8.72	-0.77	-1.20	69.35	54.00	54.58	46.80	55.33	56.22	60 dBA:	**156**	**172**
				Total:	**71.84**	**65.08**	**64.01**	**57.79**	**66.21**	**66.87**	55 dBA:	**335**	**371**

Road Name: Union Road **Segment: North of Woodward Avenue**

Average Daily Traffic: 16400 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-0.05	0.06	-1.20	68.16	65.79	64.49	58.44	66.87	67.50	70 dBA:	**39**	**43**
Medium Trucks	77.62	-14.92	0.06	-1.20	61.57	42.82	45.83	39.81	47.01	47.82	65 dBA:	**83**	**92**
Heavy Trucks	82.14	-12.70	0.06	-1.20	68.31	52.95	53.53	45.75	54.28	55.17	60 dBA:	**180**	**198**
				Total:	**71.69**	**66.03**	**64.88**	**58.72**	**67.14**	**67.79**	55 dBA:	**387**	**427**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Union Road **Segment: South of Woodward Avenue**

Average Daily Traffic: 7800 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.28	-0.77	-1.20	64.09	61.72	60.43	54.37	62.80	63.44	70 dBA:	**21**	**23**
Medium Trucks	77.62	-18.15	-0.77	-1.20	57.50	38.75	41.76	35.74	42.94	43.76	65 dBA:	**45**	**49**
Heavy Trucks	82.14	-15.93	-0.77	-1.20	64.24	48.89	49.47	41.69	50.22	51.11	60 dBA:	**96**	**106**
				Total:	**67.62**	**61.96**	**60.82**	**54.66**	**63.08**	**63.73**	55 dBA:	**207**	**229**

Road Name: Main Street **Segment: North of Woodward Avenue**

Average Daily Traffic: 24600 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.80	-0.77	-1.20	65.94	63.57	62.27	56.22	64.65	65.28	70 dBA:	**28**	**31**
Medium Trucks	74.83	-12.07	-0.77	-1.20	60.79	42.04	45.05	39.03	46.23	47.04	65 dBA:	**61**	**67**
Heavy Trucks	80.05	-9.85	-0.77	-1.20	68.23	52.87	53.45	45.67	54.20	55.09	60 dBA:	**131**	**145**
				Total:	**70.71**	**63.95**	**62.88**	**56.66**	**65.08**	**65.74**	55 dBA:	**282**	**312**

Road Name: Manteca Road **Segment: South of Woodward Avenue**

Average Daily Traffic: 18200 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.40	-0.77	-1.20	67.77	65.40	64.11	58.05	66.48	67.12	70 dBA:	**36**	**40**
Medium Trucks	77.62	-14.47	-0.77	-1.20	61.18	42.43	45.44	39.42	46.62	47.44	65 dBA:	**79**	**87**
Heavy Trucks	82.14	-12.25	-0.77	-1.20	67.92	52.57	53.15	45.37	53.90	54.79	60 dBA:	**169**	**187**
				Total:	**71.30**	**65.64**	**64.50**	**58.34**	**66.76**	**67.41**	55 dBA:	**365**	**403**

Road Name: Yosemite Avenue **Segment: West of McKinley Avenue**

Average Daily Traffic: 7900 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.22	0.06	-1.20	64.98	62.61	61.32	55.27	63.70	64.33	70 dBA:	**24**	**26**
Medium Trucks	77.62	-18.09	0.06	-1.20	58.40	39.65	42.66	36.63	43.84	44.65	65 dBA:	**51**	**57**
Heavy Trucks	82.14	-15.87	0.06	-1.20	65.13	49.78	50.36	42.58	51.11	52.00	60 dBA:	**110**	**122**
				Total:	**68.51**	**62.85**	**61.71**	**55.55**	**63.97**	**64.62**	55 dBA:	**238**	**263**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Yosemite Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 16900 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.33	-1.22	-1.20	67.25	65.13	63.82	57.81	66.23	66.85	70 dBA:	**34**	**37**
Medium Trucks	77.62	-16.91	-1.22	-1.20	58.29	37.05	43.07	24.77	37.92	40.67	65 dBA:	**73**	**80**
Heavy Trucks	82.14	-20.87	-1.22	-1.20	58.86	33.51	30.11	34.76	40.96	41.05	60 dBA:	**157**	**172**
				Total:	**68.30**	**65.14**	**63.86**	**57.83**	**66.25**	**66.87**	55 dBA:	**337**	**371**

Road Name: Yosemite Avenue **Segment: East of Airport Way**

Average Daily Traffic: 19100 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.70	-0.77	-1.20	64.84	62.47	61.17	55.12	63.55	64.18	70 dBA:	**24**	**26**
Medium Trucks	74.83	-13.16	-0.77	-1.20	59.69	40.94	43.95	37.93	45.13	45.94	65 dBA:	**51**	**57**
Heavy Trucks	80.05	-10.95	-0.77	-1.20	67.13	51.78	52.36	44.57	53.10	53.99	60 dBA:	**111**	**122**
				Total:	**69.61**	**62.85**	**61.78**	**55.56**	**63.98**	**64.64**	55 dBA:	**238**	**263**

Road Name: Daniels Street **Segment: West of Airport Way**

Average Daily Traffic: 22800 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	3.14	-0.77	-1.20	63.68	61.31	60.01	53.96	62.39	63.02	70 dBA:	**21**	**23**
Medium Trucks	73.11	-11.73	-0.77	-1.20	59.41	40.66	43.67	37.65	44.86	45.67	65 dBA:	**45**	**50**
Heavy Trucks	80.26	-9.51	-0.77	-1.20	68.78	53.43	54.01	46.23	54.75	55.65	60 dBA:	**97**	**108**
				Total:	**70.32**	**62.00**	**61.07**	**54.72**	**63.15**	**63.82**	55 dBA:	**210**	**232**

Road Name: Daniels Street **Segment: East of Airport Way**

Average Daily Traffic: 15100 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	1.35	-0.77	-1.20	61.89	59.52	58.22	52.17	60.60	61.23	70 dBA:	**16**	**18**
Medium Trucks	73.11	-13.52	-0.77	-1.20	57.63	38.87	41.88	35.86	43.07	43.88	65 dBA:	**34**	**38**
Heavy Trucks	80.26	-11.30	-0.77	-1.20	66.99	51.64	52.22	44.44	52.97	53.86	60 dBA:	**74**	**82**
				Total:	**68.53**	**60.21**	**59.28**	**52.93**	**61.36**	**62.03**	55 dBA:	**159**	**177**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: West of McKinley Avenue**

Average Daily Traffic: 6900 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.56	-1.22	-1.20	63.36	61.24	59.93	53.92	62.34	62.96	70 dBA:	**19**	**20**
Medium Trucks	77.62	-20.80	-1.22	-1.20	54.40	33.16	39.18	20.88	34.03	36.78	65 dBA:	**40**	**44**
Heavy Trucks	82.14	-24.76	-1.22	-1.20	54.97	29.62	26.22	30.87	37.07	37.16	60 dBA:	**86**	**95**
				Total:	**64.41**	**61.25**	**59.97**	**53.94**	**62.36**	**62.98**	55 dBA:	**186**	**204**

Road Name: Woodward Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 7700 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-2.00	-1.22	-1.20	60.70	58.57	57.26	51.25	59.67	60.30	70 dBA:	**12**	**14**
Medium Trucks	74.83	-19.23	-1.22	-1.20	53.18	31.93	37.95	19.66	32.80	35.55	65 dBA:	**27**	**29**
Heavy Trucks	80.05	-23.19	-1.22	-1.20	54.44	29.09	25.69	30.34	36.54	36.63	60 dBA:	**57**	**63**
				Total:	**62.20**	**58.59**	**57.32**	**51.29**	**59.70**	**60.33**	55 dBA:	**123**	**136**

Road Name: Woodward Avenue **Segment: East of Airport Way**

Average Daily Traffic: 11000 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-1.54	-1.22	-1.20	65.39	63.27	61.95	55.94	64.36	64.99	70 dBA:	**25**	**28**
Medium Trucks	77.62	-18.78	-1.22	-1.20	56.43	35.18	41.20	22.91	36.05	38.80	65 dBA:	**55**	**60**
Heavy Trucks	82.14	-22.73	-1.22	-1.20	56.99	31.64	28.24	32.89	39.09	39.19	60 dBA:	**118**	**129**
				Total:	**66.43**	**63.28**	**61.99**	**55.97**	**64.38**	**65.01**	55 dBA:	**253**	**279**

Road Name: Woodward Avenue **Segment: East of Union Road**

Average Daily Traffic: 7000 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.50	-1.22	-1.20	63.43	61.30	59.99	53.98	62.40	63.03	70 dBA:	**19**	**21**
Medium Trucks	77.62	-20.74	-1.22	-1.20	54.47	33.22	39.24	20.95	34.09	36.84	65 dBA:	**40**	**44**
Heavy Trucks	82.14	-24.69	-1.22	-1.20	55.03	29.68	26.28	30.93	37.13	37.22	60 dBA:	**87**	**96**
				Total:	**64.47**	**61.31**	**60.03**	**54.00**	**62.42**	**63.05**	55 dBA:	**187**	**206**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITHOUT PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: East of Main Street**

Average Daily Traffic: 6800 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.87	-0.77	-1.20	63.50	61.12	59.83	53.78	62.21	62.84	70 dBA:	**19**	**21**
Medium Trucks	77.62	-18.74	-0.77	-1.20	56.91	38.16	41.17	35.15	42.35	43.16	65 dBA:	**41**	**45**
Heavy Trucks	82.14	-16.52	-0.77	-1.20	63.65	48.29	48.87	41.09	49.62	50.51	60 dBA:	**88**	**97**
				Total:	**67.03**	**61.37**	**60.22**	**54.06**	**62.48**	**63.13**	55 dBA:	**189**	**209**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

	Vehicle Mix 1 (Arterials)				Vehicle Mix 2 (Collectors)				Vehicle Mix 3 (SR-120)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	69.50%	12.90%	9.60%	92.00%	73.60%	13.60%	10.22%	97.40%	56.48%	10.53%	7.83%	81.60%
Medium Trucks	1.60%	0.80%	0.60%	3.00%	0.90%	0.90%	0.04%	1.84%	1.51%	1.28%	0.06%	2.85%
Heavy Trucks	3.50%	1.00%	0.50%	5.00%	0.35%	0.04%	0.35%	0.74%	9.33%	2.33%	3.89%	15.55%

Road Name: Yosemite Avenue **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 16600 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.00	0.06	-1.20	68.21	65.84	64.54	58.49	66.92	67.55	70 dBA:	**39**	**43**
Medium Trucks	77.62	-14.87	0.06	-1.20	61.62	42.87	45.88	39.86	47.06	47.87	65 dBA:	**84**	**93**
Heavy Trucks	82.14	-12.65	0.06	-1.20	68.36	53.01	53.59	45.81	54.33	55.22	60 dBA:	**181**	**200**
				Total:	**71.74**	**66.08**	**64.93**	**58.77**	**67.20**	**67.84**	55 dBA:	**390**	**431**

Road Name: McKinley Avenue **Segment: North of Yosemite Avenue**

Average Daily Traffic: 18600 Vehicles Vehicle Speed: 50 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	71.12	0.29	-1.22	-1.20	68.99	66.87	65.55	59.54	67.96	68.59	70 dBA:	**44**	**48**
Medium Trucks	78.79	-16.95	-1.22	-1.20	59.42	38.18	44.20	25.90	39.05	41.80	65 dBA:	**95**	**104**
Heavy Trucks	83.02	-20.91	-1.22	-1.20	59.70	34.34	30.94	35.59	41.79	41.89	60 dBA:	**204**	**225**
				Total:	**69.88**	**66.87**	**65.59**	**59.56**	**67.98**	**68.61**	55 dBA:	**440**	**484**

Road Name: McKinley Avenue **Segment: North of Atherton Drive**

Average Daily Traffic: 44000 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	4.23	0.06	-1.20	72.44	70.07	68.78	62.72	71.16	71.79	70 dBA:	**75**	**83**
Medium Trucks	77.62	-10.63	0.06	-1.20	65.85	47.10	50.11	44.09	51.29	52.11	65 dBA:	**161**	**178**
Heavy Trucks	82.14	-8.41	0.06	-1.20	72.59	57.24	57.82	50.04	58.57	59.46	60 dBA:	**347**	**383**
				Total:	**75.97**	**70.31**	**69.17**	**63.01**	**71.43**	**72.08**	55 dBA:	**747**	**825**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: McKinley Avenue **Segment: North of Woodward Avenue**

Average Daily Traffic: 25700 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.15	-1.22	-1.20	69.08	66.95	65.64	59.63	68.05	68.67	70 dBA:	**45**	**49**
Medium Trucks	77.62	-15.09	-1.22	-1.20	60.12	38.87	44.89	26.59	39.74	42.49	65 dBA:	**96**	**106**
Heavy Trucks	82.14	-19.05	-1.22	-1.20	60.68	35.33	31.93	36.58	42.78	42.87	60 dBA:	**207**	**228**
				Total:	**70.12**	**66.96**	**65.68**	**59.65**	**68.07**	**68.70**	55 dBA:	**446**	**491**

Road Name: McKinley Avenue **Segment: South of Woodward Avenue**

Average Daily Traffic: 30400 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.63	-0.77	-1.20	70.00	67.63	66.33	60.28	68.71	69.34	70 dBA:	**51**	**57**
Medium Trucks	77.62	-12.24	-0.77	-1.20	63.41	44.66	47.67	41.65	48.85	49.67	65 dBA:	**111**	**122**
Heavy Trucks	82.14	-10.02	-0.77	-1.20	70.15	54.80	55.38	47.60	56.12	57.01	60 dBA:	**238**	**263**
				Total:	**73.53**	**67.87**	**66.72**	**60.56**	**68.99**	**69.63**	55 dBA:	**514**	**567**

Road Name: Airport Way **Segment: North of Yosemite Avenue**

Average Daily Traffic: 30400 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.14	-0.77	-1.20	68.53	66.16	64.86	58.81	67.24	67.87	70 dBA:	**41**	**46**
Medium Trucks	76.31	-11.73	-0.77	-1.20	62.61	43.86	46.87	40.85	48.05	48.87	65 dBA:	**89**	**98**
Heavy Trucks	81.16	-9.51	-0.77	-1.20	69.68	54.33	54.91	47.13	55.65	56.54	60 dBA:	**192**	**212**
				Total:	**72.61**	**66.46**	**65.34**	**59.16**	**67.58**	**68.23**	55 dBA:	**414**	**457**

Road Name: Airport Way **Segment: North of Daniels Street**

Average Daily Traffic: 25200 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.33	-0.77	-1.20	67.71	65.34	64.05	57.99	66.42	67.06	70 dBA:	**37**	**40**
Medium Trucks	76.31	-12.54	-0.77	-1.20	61.80	43.05	46.06	40.04	47.24	48.05	65 dBA:	**79**	**87**
Heavy Trucks	81.16	-10.32	-0.77	-1.20	68.86	53.51	54.09	46.31	54.84	55.73	60 dBA:	**169**	**187**
				Total:	**71.79**	**65.64**	**64.53**	**58.34**	**66.76**	**67.41**	55 dBA:	**365**	**403**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Airport Way **Segment: North of Woodward Avenue**

Average Daily Traffic: 19100 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.12	-0.77	-1.20	66.51	64.14	62.84	56.79	65.22	65.85	70 dBA:	**30**	**34**
Medium Trucks	76.31	-13.74	-0.77	-1.20	60.59	41.84	44.85	38.83	46.04	46.85	65 dBA:	**65**	**72**
Heavy Trucks	81.16	-11.53	-0.77	-1.20	67.66	52.31	52.89	45.11	53.64	54.53	60 dBA:	**141**	**156**
				Total:	**70.59**	**64.44**	**63.32**	**57.14**	**65.56**	**66.21**	55 dBA:	**304**	**335**

Road Name: Airport Way **Segment: South of Woodward Avenue**

Average Daily Traffic: 9500 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	72.73	-3.05	-1.22	-1.20	67.26	65.14	63.83	57.81	66.23	66.86	70 dBA:	**34**	**37**
Medium Trucks	79.85	-20.28	-1.22	-1.20	57.15	35.90	41.92	23.63	36.77	39.53	65 dBA:	**73**	**80**
Heavy Trucks	83.81	-24.24	-1.22	-1.20	57.16	31.81	28.41	33.06	39.26	39.35	60 dBA:	**157**	**172**
				Total:	**68.04**	**65.15**	**63.86**	**57.83**	**66.25**	**66.88**	55 dBA:	**337**	**371**

Road Name: Union Road **Segment: North of SR-120 Westbound Ramps**

Average Daily Traffic: 32200 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	3.97	-0.77	-1.20	67.11	64.73	63.44	57.39	65.82	66.45	70 dBA:	**34**	**37**
Medium Trucks	74.83	-10.90	-0.77	-1.20	61.96	43.21	46.22	40.20	47.40	48.21	65 dBA:	**73**	**80**
Heavy Trucks	80.05	-8.68	-0.77	-1.20	69.39	54.04	54.62	46.84	55.37	56.26	60 dBA:	**157**	**173**
				Total:	**71.88**	**65.12**	**64.05**	**57.83**	**66.25**	**66.91**	55 dBA:	**337**	**373**

Road Name: Union Road **Segment: North of Woodward Avenue**

Average Daily Traffic: 16400 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-0.05	0.06	-1.20	68.16	65.79	64.49	58.44	66.87	67.50	70 dBA:	**39**	**43**
Medium Trucks	77.62	-14.92	0.06	-1.20	61.57	42.82	45.83	39.81	47.01	47.82	65 dBA:	**83**	**92**
Heavy Trucks	82.14	-12.70	0.06	-1.20	68.31	52.95	53.53	45.75	54.28	55.17	60 dBA:	**180**	**198**
				Total:	**71.69**	**66.03**	**64.88**	**58.72**	**67.14**	**67.79**	55 dBA:	**387**	**427**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Union Road **Segment: South of Woodward Avenue**

Average Daily Traffic: 7800 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.28	-0.77	-1.20	64.09	61.72	60.43	54.37	62.80	63.44	70 dBA:	**21**	**23**
Medium Trucks	77.62	-18.15	-0.77	-1.20	57.50	38.75	41.76	35.74	42.94	43.76	65 dBA:	**45**	**49**
Heavy Trucks	82.14	-15.93	-0.77	-1.20	64.24	48.89	49.47	41.69	50.22	51.11	60 dBA:	**96**	**106**
				Total:	**67.62**	**61.96**	**60.82**	**54.66**	**63.08**	**63.73**	55 dBA:	**207**	**229**

Road Name: Main Street **Segment: North of Woodward Avenue**

Average Daily Traffic: 24600 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.80	-0.77	-1.20	65.94	63.57	62.27	56.22	64.65	65.28	70 dBA:	**28**	**31**
Medium Trucks	74.83	-12.07	-0.77	-1.20	60.79	42.04	45.05	39.03	46.23	47.04	65 dBA:	**61**	**67**
Heavy Trucks	80.05	-9.85	-0.77	-1.20	68.23	52.87	53.45	45.67	54.20	55.09	60 dBA:	**131**	**145**
				Total:	**70.71**	**63.95**	**62.88**	**56.66**	**65.08**	**65.74**	55 dBA:	**282**	**312**

Road Name: Manteca Road **Segment: South of Woodward Avenue**

Average Daily Traffic: 18200 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.40	-0.77	-1.20	67.77	65.40	64.11	58.05	66.48	67.12	70 dBA:	**36**	**40**
Medium Trucks	77.62	-14.47	-0.77	-1.20	61.18	42.43	45.44	39.42	46.62	47.44	65 dBA:	**79**	**87**
Heavy Trucks	82.14	-12.25	-0.77	-1.20	67.92	52.57	53.15	45.37	53.90	54.79	60 dBA:	**169**	**187**
				Total:	**71.30**	**65.64**	**64.50**	**58.34**	**66.76**	**67.41**	55 dBA:	**365**	**403**

Road Name: Yosemite Avenue **Segment: West of McKinley Avenue**

Average Daily Traffic: 8000 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 6-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48.73 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.17	0.06	-1.20	65.04	62.67	61.37	55.32	63.75	64.38	70 dBA:	**24**	**26**
Medium Trucks	77.62	-18.04	0.06	-1.20	58.45	39.70	42.71	36.69	43.89	44.70	65 dBA:	**52**	**57**
Heavy Trucks	82.14	-15.82	0.06	-1.20	65.19	49.84	50.42	42.64	51.16	52.05	60 dBA:	**111**	**123**
				Total:	**68.57**	**62.91**	**61.76**	**55.60**	**64.03**	**64.67**	55 dBA:	**240**	**265**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Yosemite Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 17800 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	0.55	-1.22	-1.20	67.48	65.36	64.04	58.03	66.45	67.08	70 dBA:	**35**	**38**
Medium Trucks	77.62	-16.69	-1.22	-1.20	58.52	37.27	43.29	25.00	38.14	40.89	65 dBA:	**75**	**83**
Heavy Trucks	82.14	-20.64	-1.22	-1.20	59.08	33.73	30.33	34.98	41.18	41.28	60 dBA:	**162**	**178**
				Total:	**68.52**	**65.37**	**64.08**	**58.06**	**66.47**	**67.10**	55 dBA:	**349**	**384**

Road Name: Yosemite Avenue **Segment: East of Airport Way**

Average Daily Traffic: 19800 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.86	-0.77	-1.20	64.99	62.62	61.33	55.28	63.71	64.34	70 dBA:	**24**	**27**
Medium Trucks	74.83	-13.01	-0.77	-1.20	59.85	41.10	44.11	38.09	45.29	46.10	65 dBA:	**53**	**58**
Heavy Trucks	80.05	-10.79	-0.77	-1.20	67.28	51.93	52.51	44.73	53.26	54.15	60 dBA:	**113**	**125**
				Total:	**69.76**	**63.01**	**61.94**	**55.72**	**64.14**	**64.79**	55 dBA:	**244**	**270**

Road Name: Daniels Street **Segment: West of Airport Way**

Average Daily Traffic: 23200 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	3.22	-0.77	-1.20	63.76	61.38	60.09	54.04	62.47	63.10	70 dBA:	**21**	**24**
Medium Trucks	73.11	-11.65	-0.77	-1.20	59.49	40.74	43.75	37.73	44.93	45.74	65 dBA:	**46**	**51**
Heavy Trucks	80.26	-9.43	-0.77	-1.20	68.86	53.50	54.08	46.30	54.83	55.72	60 dBA:	**98**	**109**
				Total:	**70.39**	**62.07**	**61.14**	**54.80**	**63.22**	**63.89**	55 dBA:	**212**	**235**

Road Name: Daniels Street **Segment: East of Airport Way**

Average Daily Traffic: 15500 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	1.46	-0.77	-1.20	62.00	59.63	58.34	52.28	60.72	61.35	70 dBA:	**16**	**18**
Medium Trucks	73.11	-13.40	-0.77	-1.20	57.74	38.99	42.00	35.98	43.18	43.99	65 dBA:	**35**	**39**
Heavy Trucks	80.26	-11.18	-0.77	-1.20	67.10	51.75	52.33	44.55	53.08	53.97	60 dBA:	**75**	**83**
				Total:	**68.64**	**60.32**	**59.39**	**53.05**	**61.47**	**62.14**	55 dBA:	**162**	**180**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: West of McKinley Avenue**

Average Daily Traffic: 1 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-41.95	-1.22	-1.20	24.98	22.85	21.54	15.53	23.95	24.57	70 dBA:	**0**	**0**
Medium Trucks	77.62	-59.19	-1.22	-1.20	16.02	-5.23	0.79	-17.51	-4.36	-1.61	65 dBA:	**0**	**0**
Heavy Trucks	82.14	-63.15	-1.22	-1.20	16.58	-8.77	-12.17	-7.52	-1.32	-1.23	60 dBA:	**0**	**0**
				Total:	**26.02**	**22.86**	**21.58**	**15.55**	**23.97**	**24.60**	55 dBA:	**1**	**1**

Road Name: Woodward Avenue **Segment: East of McKinley Avenue**

Average Daily Traffic: 8600 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	-1.52	-1.22	-1.20	61.18	59.05	57.74	51.73	60.15	60.78	70 dBA:	**13**	**15**
Medium Trucks	74.83	-18.75	-1.22	-1.20	53.66	32.41	38.43	20.14	33.28	36.03	65 dBA:	**29**	**32**
Heavy Trucks	80.05	-22.71	-1.22	-1.20	54.92	29.57	26.17	30.82	37.02	37.11	60 dBA:	**62**	**68**
				Total:	**62.68**	**59.07**	**57.80**	**51.77**	**60.18**	**60.81**	55 dBA:	**133**	**146**

Road Name: Woodward Avenue **Segment: East of Airport Way**

Average Daily Traffic: 11500 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-1.34	-1.22	-1.20	65.58	63.46	62.15	56.13	64.55	65.18	70 dBA:	**26**	**29**
Medium Trucks	77.62	-18.58	-1.22	-1.20	56.62	35.37	41.39	23.10	36.25	39.00	65 dBA:	**56**	**62**
Heavy Trucks	82.14	-22.54	-1.22	-1.20	57.19	31.84	28.44	33.08	39.28	39.38	60 dBA:	**121**	**133**
				Total:	**66.63**	**63.47**	**62.19**	**56.16**	**64.57**	**65.20**	55 dBA:	**261**	**287**

Road Name: Woodward Avenue **Segment: East of Union Road**

Average Daily Traffic: 7600 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: 2-Lane Street

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.32 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.14	-1.22	-1.20	63.78	61.66	60.35	54.34	62.76	63.38	70 dBA:	**20**	**22**
Medium Trucks	77.62	-20.38	-1.22	-1.20	54.82	33.57	39.60	21.30	34.45	37.20	65 dBA:	**43**	**47**
Heavy Trucks	82.14	-24.34	-1.22	-1.20	55.39	30.04	26.64	31.29	37.49	37.58	60 dBA:	**92**	**101**
				Total:	**64.83**	**61.67**	**60.39**	**54.36**	**62.77**	**63.40**	55 dBA:	**198**	**218**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: CUMULATIVE WITH PROJECT CONDITIONS **Trails of Manteca**

Site Conditions: Soft

Road Name: Woodward Avenue **Segment: East of Main Street**

Average Daily Traffic: 7000 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 1 Roadway Classification: 4-Lane Arterial

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 55.42 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	-3.75	-0.77	-1.20	63.62	61.25	59.96	53.90	62.33	62.97	70 dBA:	**19**	**21**
Medium Trucks	77.62	-18.62	-0.77	-1.20	57.03	38.28	41.29	35.27	42.47	43.29	65 dBA:	**42**	**46**
Heavy Trucks	82.14	-16.40	-0.77	-1.20	63.77	48.42	49.00	41.22	49.75	50.64	60 dBA:	**90**	**99**
				Total:	**67.15**	**61.49**	**60.35**	**54.19**	**62.61**	**63.26**	55 dBA:	**193**	**213**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Woodward Avenue
Lot Number: 1

Project Name: Trails of Manteca
Job Number: 2482.0005.0

NOISE MODEL INPUTS

Highway Data

Average Daily Traffic:	24,700	vehicles
Peak Hour Volume:	2,470	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	46	feet

Vehicle Mix

	Day	Evening	Night	Daily
Autos:	73.6%	13.6%	10.2%	97.4%
Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Heavy Trucks:	0.4%	0.0%	0.4%	0.7%

Site Data

Barrier Height:	**7**	**feet**
Barrier Type(Wall/Berm):	Wall	
Site Conditions(Hard/Soft):	Soft	
Centerline (C.L.) Dist. to Barrier:	50	feet
C.L. Dist. To Observer (Backyard):	60	feet
Barrier Dist. To Observer (Backyard):	10	feet
C.L. Dist. To Observer (Structure):	60	feet
Barrier Dist. To Observer (Structure):	10	feet
Road Grade:	0.00	%
Left View:	-90	degrees
Right View:	90	degrees

Elevations

Barrier Base Elevation:	0.0	feet
Road Elevation:	0.0	feet
Noise Source Elevation above Road		
Autos:	0	feet
Med Trucks:	2.3	feet
Hvy Trucks:	8	feet
Pad Elevation:	0.0	feet
Observer Heights Above Pad Elevation		
Exterior:	5	feet
First Floor:	5.5	feet
Second Floor:	14	feet

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation Exterior	1st Flr	2nd Flr
Autos:	69.34	1.98	-0.80	-1.20	0.00	-10.09	-9.24	0
Med Trucks:	77.62	-15.26	-0.80	-1.20	0.00	-9.97	-9.03	0
Hvy Trucks:	82.14	-19.22	-0.80	-1.20	0.00	-7.65	-6.56	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	67.1	65.8	59.8	68.2	68.8
Med Trucks:	60.4	39.1	45.1	26.8	40.0	42.7
Hvy Trucks:	60.9	35.6	32.2	36.8	43.0	43.1
Traffic Noise:	**70.3**	**67.1**	**65.8**	**59.8**	**68.2**	**68.8**

MITIGATED NOISE LEVELS (Backyard)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	57.1	55.8	49.8	58.2	58.8
Med Trucks:	50.4	29.1	35.2	16.9	30.0	32.8
Hvy Trucks:	53.3	27.9	24.5	29.2	35.4	35.5
Traffic Noise:	**60.6**	**57.1**	**55.8**	**49.8**	**58.2**	**58.9**

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	58.0	56.6	50.6	59.0	59.7
Med Trucks:	51.3	30.1	36.1	17.8	30.9	33.7
Hvy Trucks:	54.4	29.0	25.6	30.3	36.5	36.6
Traffic Noise:	**61.5**	**58.0**	**56.7**	**50.7**	**59.1**	**59.7**

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	67.0	65.7	59.7	68.1	68.7
Med Trucks:	60.2	38.9	44.9	26.6	39.8	42.5
Hvy Trucks:	60.7	35.4	32.0	36.6	42.8	42.9
Traffic Noise:	**70.2**	**67.0**	**65.7**	**59.7**	**68.1**	**68.8**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Woodward Avenue
Lot Number: Berm

Project Name: Trails of Manteca
Job Number: 2482.0005.0

NOISE MODEL INPUTS

Highway Data

Average Daily Traffic:	24,700	vehicles
Peak Hour Volume:	2,470	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	46	feet

Vehicle Mix

	Day	Evening	Night	Daily
Autos:	73.6%	13.6%	10.2%	97.4%
Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Heavy Trucks:	0.4%	0.0%	0.4%	0.7%

Site Data

Barrier Height:	**4**	**feet**
Barrier Type(Wall/Berm):	Berm	
Site Conditions(Hard/Soft):	Soft	
Centerline (C.L.) Dist. to Barrier:	50	feet
C.L. Dist. To Observer (Backyard):	65	feet
Barrier Dist. To Observer (Backyard):	15	feet
C.L. Dist. To Observer (Structure):	65	feet
Barrier Dist. To Observer (Structure):	15	feet
Road Grade:	0.00	%
Left View:	-90	degrees
Right View:	90	degrees

Elevations

Barrier Base Elevation:	0.0	feet
Road Elevation:	0.0	feet
Noise Source Elevation above Road		
Autos:	0	feet
Med Trucks:	2.3	feet
Hvy Trucks:	8	feet
Pad Elevation:	0.0	feet
Observer Heights Above Pad Elevation		
Exterior:	5	feet
First Floor:	5.5	feet
Second Floor:	14	feet

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation Exterior	1st Flr	2nd Flr
Autos:	69.34	1.98	-1.40	-1.20	0.00	-7.9	-4.9	0
Med Trucks:	77.62	-15.26	-1.40	-1.20	0.00	-7.8	-4.1	0
Hvy Trucks:	82.14	-19.22	-1.40	-1.20	0.00	-3.905	-0.56	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	66.4	65.1	59.1	67.5	68.1
Med Trucks:	59.8	38.5	44.5	26.2	39.4	42.1
Hvy Trucks:	60.3	35.0	31.6	36.2	42.4	42.5
Traffic Noise:	**69.6**	**66.4**	**65.1**	**59.1**	**67.5**	**68.2**

MITIGATED NOISE LEVELS (Backyard)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	58.7	57.4	51.4	59.8	60.4
Med Trucks:	52.0	30.7	36.7	18.4	31.6	34.3
Hvy Trucks:	56.4	31.1	27.7	32.3	38.5	38.6
Traffic Noise:	**62.6**	**58.7**	**57.4**	**51.4**	**59.8**	**60.5**

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	61.7	60.4	54.4	62.8	63.4
Med Trucks:	55.7	34.4	40.4	22.1	35.3	38.0
Hvy Trucks:	59.8	34.4	31.0	35.7	41.9	42.0
Traffic Noise:	**65.7**	**61.7**	**60.4**	**54.4**	**62.8**	**63.5**

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.4	65.1	59.1	67.5	68.2
Med Trucks:	59.6	38.4	44.4	26.1	39.2	42.0
Hvy Trucks:	60.2	34.8	31.4	36.1	42.3	42.4
Traffic Noise:	**69.6**	**66.4**	**65.2**	**59.1**	**67.6**	**68.2**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Woodward Avenue
Lot Number: Setback

Project Name: Trails of Manteca
Job Number: 2482.0005.0

NOISE MODEL INPUTS

Highway Data

Average Daily Traffic:	24,700	vehicles
Peak Hour Volume:	2,470	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	46	feet

Vehicle Mix

	Day	Evening	Night	Daily
Autos:	73.6%	13.6%	10.2%	97.4%
Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Heavy Trucks:	0.4%	0.0%	0.4%	0.7%

Site Data

Barrier Height:	**0**	**feet**
Barrier Type(Wall/Berm):	Wall	
Site Conditions(Hard/Soft):	Soft	
Centerline (C.L.) Dist. to Barrier:	50	feet
C.L. Dist. To Observer (Backyard):	130	feet
Barrier Dist. To Observer (Backyard):	80	feet
C.L. Dist. To Observer (Structure):	130	feet
Barrier Dist. To Observer (Structure):	80	feet
Road Grade:	0.00	%
Left View:	-90	degrees
Right View:	90	degrees

Elevations

Barrier Base Elevation:	0.0	feet
Road Elevation:	0.0	feet
Noise Source Elevation above Road		
Autos:	0	feet
Med Trucks:	2.3	feet
Hvy Trucks:	8	feet
Pad Elevation:	0.0	feet
Observer Heights Above Pad Elevation		
Exterior:	5	feet
First Floor:	5.5	feet
Second Floor:	14	feet

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation Exterior	1st Flr	2nd Flr
Autos:	69.34	1.98	-6.23	-1.20	0.00	-3.3	-2.7	-0.22
Med Trucks:	77.62	-15.26	-6.23	-1.20	0.00	-0.58	-0.49	-0.104
Hvy Trucks:	82.14	-19.22	-6.23	-1.20	0.00	-0.111	-0.1	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	58.5	57.2	51.1	59.6	60.2
Med Trucks:	54.4	33.1	39.1	20.8	34.0	36.7
Hvy Trucks:	55.4	30.0	26.6	31.3	37.5	37.6
Traffic Noise:	**62.5**	**58.5**	**57.2**	**51.2**	**59.6**	**60.2**

MITIGATED NOISE LEVELS (Backyard)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	58.5	57.2	51.1	59.6	60.2
Med Trucks:	54.4	33.1	39.1	20.8	34.0	36.7
Hvy Trucks:	55.4	30.0	26.6	31.3	37.5	37.6
Traffic Noise:	**62.5**	**58.5**	**57.2**	**51.2**	**59.6**	**60.2**

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	59.1	57.8	51.7	60.2	60.8
Med Trucks:	54.4	33.2	39.2	20.9	34.1	36.8
Hvy Trucks:	55.4	30.0	26.6	31.3	37.5	37.6
Traffic Noise:	**62.9**	**59.1**	**57.8**	**51.8**	**60.2**	**60.8**

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	61.5	60.2	54.2	62.6	63.2
Med Trucks:	54.8	33.5	39.6	21.3	34.4	37.2
Hvy Trucks:	55.5	30.1	26.7	31.4	37.6	37.7
Traffic Noise:	**64.7**	**61.5**	**60.2**	**54.2**	**62.6**	**63.3**

Appendix J:
Water Supply Assessment/
Public Services and Utilities Letters

J.1 - Water Supply Assessment

RESOLUTION NO. R2010-190

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MANTECA APPROVING AN AMENDMENT TO THE TRAILS OF MANTECA WATER SUPPLY ASSESSMENT AND WATER SUPPLY VERIFICATION

WHEREAS, the California Water Code and the California Government Code and require water suppliers to complete water supply assessments and water supply verifications for developments that meet certain water demand criteria; and

WHEREAS, the Trails of Manteca project, as amended, is a proposed development of 1,178 single-family and 472 multi-family dwelling units and falls under the State requirements for a water supply assessment and a water supply verification; and

WHEREAS, the 2005 Urban Water Management Plan (on file with the Office of the City Clerk) contains much of the required water supply information and was used in the water supply assessment and in the water supply verification; and

WHEREAS, the city council did approve the original water supply assessment and water supply verification on November 17, 2009.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the City Council of the City of Manteca that it does hereby approve the amended water supply assessment and water supply verification for the Trails of Manteca Project.

DATED: September 7, 2010

ROLL CALL:

AYES: Councilmembers DeBrum, Harris, Hernandez, Moorhead and Weatherford

NOES: None

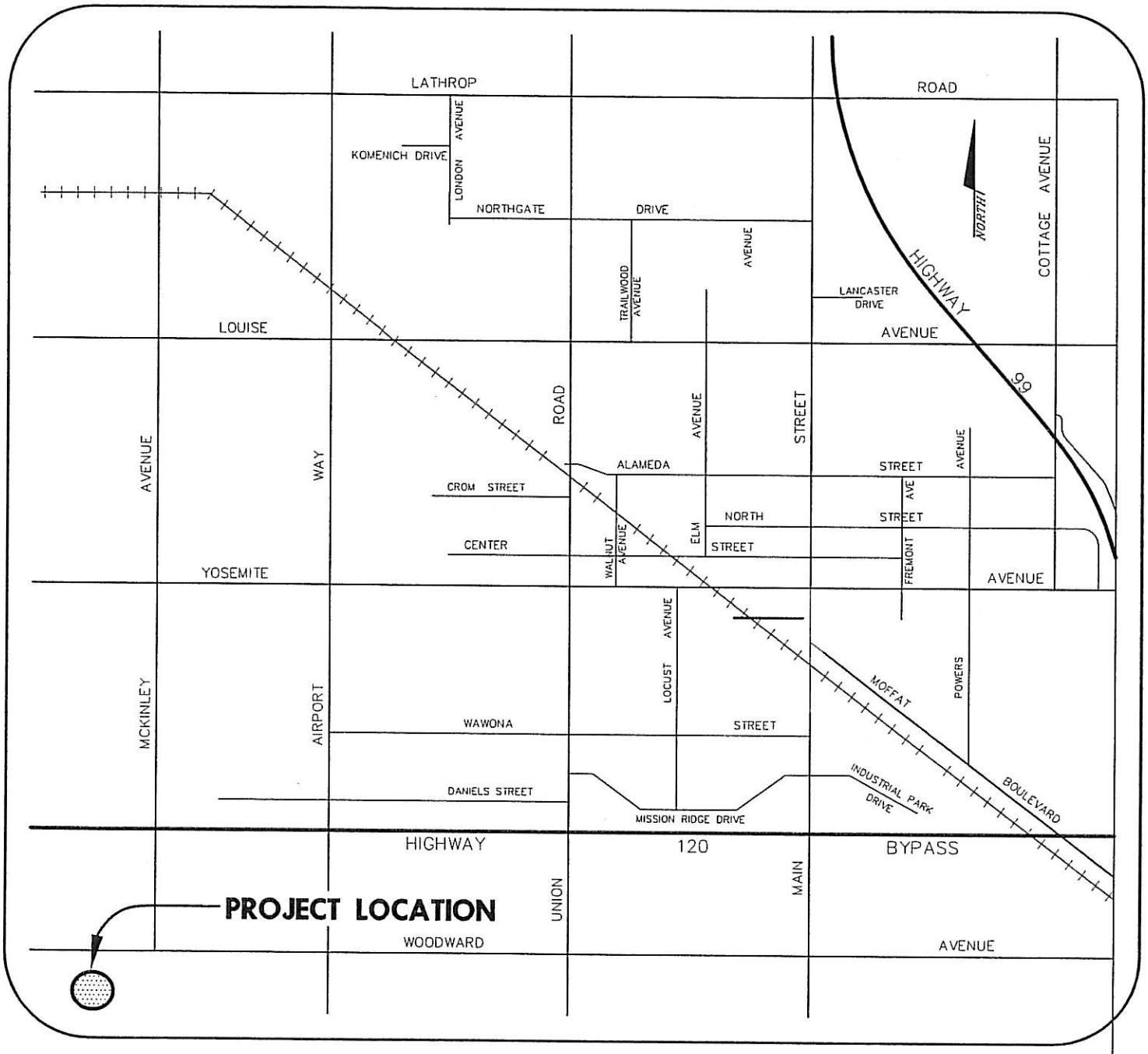
ABSENT: None

ABSTAIN: None

ATTEST:

JOANN TILTON, MMC
CITY CLERK

WILLIE W. WEATHERFORD
MAYOR



TRAILS OF MANTECA

PROJECT LOCATION MAP

NO SCALE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Memo

To: **Erica Durrer**

From: **Keith Conarroe** KHC

CC: **Mark Houghton, Frederic Clark, Phil Govea, Mark McAvoy**

Date: **August 17, 2010**

Re: **The Trails of Manteca Development Water Supply Assessment/Verification Amendment**

Introduction

On November 17, 2009 the City of Manteca completed and approved a water supply assessment and verification for the Trails of Manteca Development. In July of 2010, a Notice of Preparation for The Trails of Manteca draft environmental impact report was issued. The Notice of Preparation increased the number of single and multi-family residences planned for the development. An amended water supply assessment and verification is required to address the additional water demand presented by the increase in residential dwelling units. This Water Supply Amendment updates the November 17, 2009 Water Supply Assessment and Verification to account for the increase in residential units.

The revised Trails of Manteca Development includes 1,178 single-family residences and 472 multifamily residences consisting of 192 townhomes/garden apartments and 280 apartments. The revised plan increased the number of single-family residences by 8 and multifamily residences by 172.

A water supply assessment and water supply verification are required to comply with water supply planning requirements of the California Water Code and Government Code. Water supply assessments and verifications are similar but separate documents required for developments that exceed 500 dwelling units. As the conditions and requirements are similar this document will serve as both the Water Supply Assessment and Water Supply Verification for the development.

The water supply assessment evaluates the ability of the City of Manteca to meet the water supply demand associated with the proposed land uses of the Trails of Manteca Development. The water supply assessment was prepared in accordance with requirements of Section 10910, et seq, of the Water Code, which requires a water supply assessment as part of the environmental review process for new development projects.

The California Government Code Section 66473.7 requires a water supply verification for approval of a residential project Tentative Map. The water supply verification documents the availability of a sufficient supply of water to serve the project.

Much of the information required in the Water Supply Assessment and the Water Supply Verification is included in the City of Manteca 2005 Urban Water Management Plan. Additional information is contained in the 2005 City of Manteca Water Master Plan. Both documents have been used in the completion of this water supply assessment and verification.

Summary Findings

The findings of the water supply evaluation are that the peak hour water demand for the development will exceed the existing supply and that additional peak hour capacity will be required.

The projected water demands with the Trails of Manteca are summarized and compared to the available water supply in Table 1.

Table 1

Water Demand - Supply Comparison

	City Water Demand with the Trails of Manteca	Available Water Supply	Water Supply Balance	Required Supply for Trails of Manteca
Average Day Demand, GPD	19,731,000	24,537,000	4,806,000	--
Maximum Day Demand, GPD	39,462,000	49,074,000	9,612,000	--
Peak Hour Demand, GPM	38,366	37,079	-1,287	1,287

The water supply – demand comparison shows the peak hour demand exceeds the available supply by 1,287 gallons per minute (gpm). To correct the shortfall the developer will need to provide a site for a new well and fund the construction of a well with a capacity of at least 1,287 gpm. The cost of any required treatment to meet water quality standards will also be funded by the developer.

While the ultimate demand for the development will exceed the available water supply, there is 940 gpm available to the Trails of Manteca from the existing and planned City water supplies. The 940 gpm supply can support 616 single family homes. The availability of the 940 gpm supply is contingent upon construction of the planned Well 26 Storage Tank and Booster Pump Station. Construction of the Well 26 Storage Tank and Booster Pump is scheduled for 2012 per agreement with the Sundance/Oleander Development. Without the Well 26 Storage Tank and Booster Pump Station there is no available capacity and the peak hour demand required to be provided by the Trails of Manteca developer is 2,192 gpm.

To conserve potable water the public landscaping and parks shall be irrigated with non-potable water. The landscape irrigation system shall be supplied by a non-potable irrigation well until reclaimed water is available. Non-potable lines (purple pipe) shall be installed for the irrigation system. The developer shall fund the construction of the irrigation well and irrigation system.

Water Demand

The Trails of Manteca water demand consists of potable and landscape irrigation demands. The estimated peak-hour demand plus a 15 percent redundancy for the development is 2,192 gallons per minute. The water will be supplied by the City of Manteca water system.

The water demand is based on a gross residential demand of 0.474 gpm per single family dwelling unit and 0.258 gpm for multi family dwelling unit. The gross demand considers the historical per capita water demand of 214 gallons per day, which includes commercial and industrial demand. The use of the gross demand in the residential water supply planning provides water for commercial, institutional and industrial uses that serve the community. A peak to average demand ratio of 2.8 is applied to the average demand to determine the peak hour demand. The peak hour demand is increased by 15 percent for water supply reliability. Table 2 summarizes the Trails of Manteca demand.

The 2,192 gpm peak hour demand shown in Table 2 will be provided by the 940 gpm available water supply and a new groundwater well with a minimum capacity of 1,252 gpm. The new well and other water system improvement are to be funded by the developer of the Trails of Manteca.

Table 2 Trails of Manteca Water Demand Summary			
Dwelling Type	Average Day Demand, GPD	Maximum Day Demand, GPD	Peak Hour Demand, GPM
Multi Family	202,629	405,257	394
Single Family	924,686	1,849,371	1,798
Total	1,127,315	2,254,628	2,192

Water Supply Assessment Requirements

The water supply assessment evaluates the water demand of the proposed development and the sufficiency of the water supply for the next 20 years to meet the demands of the project, existing users and other future users in normal, single and multiple dry year conditions. The evaluation must document the quantity of water available from existing and future water sources during the 20 year planning period. Where groundwater is used, a description of the aquifer must be provided and along with information regarding the overdraft of the basin aquifer. The governing body must also approve the water supply assessment.

The water supply assessment requirements are discussed below. Most of the information required in the water supply assessment is included in the City of Manteca 2005 Urban Water Management Plan and Water Master Plan. Copies of the City of Manteca 2005 Urban Water Management Plan the Water Master Plan are available for review at the City of Manteca Public Works office.

Water Supply Verification Requirements

The California Government Code requires a written water supply verification that finds there is or will be a sufficient water supply during single and multiple dry years within a 20 year planning period to meet the water demand projected for the development in addition to the existing and planned future uses. The water supply verification must consider the following:

- Historical record of at least 20 years
- Urban Water Shortage Contingency Analysis
- Supply Reduction for specific use sectors per supplier's resolution, ordinance or contract

- Amount of water that can be reasonably relied upon from specified water supply projects

The water supply verification requirements are discussed below and are included in attachments to this report.

Water Supply Sufficiency

The water supply assessment showed that the peak hour demand currently available and planned water supply is inadequate for the Trails of Manteca. The current peak water supply is 37,079 gallons per minute and consists of surface water from the South County Water Supply Project, City of Manteca groundwater from 17 wells and the planned Well 26 Storage Tank. The projected peak water demand with the Trails of Manteca Development is 38,366 gallons per minute. To meet the additional water demand of the Trails of Manteca Development requires the addition of a groundwater well and expansion of the water distribution system. The groundwater well may require treatment for arsenic or other contaminants. Specific treatment requirements can be determined upon drilling of a test well. Water distribution system improvements required for the developments will include the extension of existing water lines to the development. The specific water distribution system requirements can only be determined when tentative maps are submitted for approval and may require water system modeling.

Water Supply Planning

The City of Manteca 2005 Water Master Plan and the 2005 Urban Water Management Plan document the City's water supply planning. The City limits the number of new residential sewer connections to 3.9 percent per year. The limitation in new sewer connections will also limit the growth in water demand. A lower growth rate for water demand of 3.4 percent is used in both the 2005 Water Master Plan and the 2005 Urban Water Management Plan to project future water demand. Both the 2005 Water Master Plan and 2005 Urban Water Management Plan include local groundwater and the South County Surface Water Supply Project as sources of water for the City of Manteca.

The 2005 Urban Water Management Plan was adopted in December of 2005. The 2005 Urban Water Management Plan includes water supply and demand comparisons through 2030 assuming the 3.4% growth in water demand. During the planning period water is supplied by groundwater from City wells and surface water from the South County Water Supply Project. The 2005 Urban Water Management Plan also contains the single and multiple dry year water demand-supply comparisons and the water supply shortage contingency planning. The water supply and demand comparisons from the 2005 Urban Water Management Plan are included in Attachment 2. The water supply – demand comparison in Table 9 of the Urban Water Management plan shows that the water demand will exceed projected supply by 1,145 acre feet in the year 2030 or 3.3 percent without conservation. The

increase in future water supply is provided by the planned increase in surface water deliveries and drilling of new wells to meet water demands. Conservation and the implementation of reclaimed water use during the planning period will reduce potable water demand such that the water supply will exceed demand by 2030. A 20 percent State mandated water reduction by conservation is would reduce demand by 6,328 acre feet in 2030. Reclaimed water use above the currently planned 2,300 acre-feet in 2030 can provide an additional reduction in potable water demand in Manteca.

Attachment 3 contains revised Tables 4, 7 and 9 from the 2005 Urban Water Master Plan through the year 2035 to satisfy the 20 year planning period required in water supply assessments. The 20 percent potable demand reduction and increased reclaimed water use are factored into the water supply and demand projection in the revised tables. The water supply – demand comparison shown the Revised Table 9 indicates there will be sufficient water through 2035 with the currently planned water supply.

The water supply planning in the 2005 Urban Water Management Plan and Water Master Plan consider increased water demand for future developments such as the Trails of Manteca Development.

Groundwater Supply. The City of Manteca draws groundwater from the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a sub basin of the San Joaquin Valley Groundwater Basin. The California Department of Water Resources identified the ESJCGB as a basin in a state of overdraft in DWR Bulletin 160-98. The basin is described in the 2005 Urban Water Management Plan and is included in Attachment 2.

The agricultural, municipal and industrial groundwater extraction in Eastern San Joaquin Groundwater Basin is estimated at 867,600 acre-feet per year in the Eastern San Joaquin Groundwater Basin Groundwater Management Plan. The estimate is based on land use and reported groundwater pumping. Land use information is used to estimate groundwater extraction where groundwater pumping is not reported. The estimated basin overdraft is 150,700 acre-feet per year.

Modeling conducted for the Eastern San Joaquin Groundwater Basins Groundwater Management Plan showed a continued decline in groundwater levels and loss of aquifer storage at the estimated basin overdraft. The Integrated Regional Management Plan for the groundwater basin was developed and adopted in 2007 presented a water management strategy and course of action to implement an integrated conjunctive use program to manage and restore the groundwater resource.

The City of Manteca will limit groundwater extraction to the safe aquifer yield of 1 acre ft per acre per year by the use of surface water from the South County Water

Supply Project. The 2005 Water Master Plan projected a maximum groundwater extraction of 13,790 acre-feet per year to be reached by 2027 based on projected city growth and the City's Primary Urban Service Area (PUSA) of 13,970 acres defined in City's General Plan. City growth beyond the PUSA will allow greater groundwater extraction.

The 2005 Water Master Plan includes the construction of 11 new wells in its capital improvement plan. These wells provide water for future developments. Developers are required to fund construction of new wells and other water distribution system improvements for their development per the City's Public Implementation Plan (PFIP). The wells and water distribution system become part of the City water system.

Agricultural and some industrial water users located in the Manteca planning area also use locally produced groundwater. Agricultural water use is expected to decline as Manteca's development is displacing the local agriculture. The net impact on agricultural water supply is neutral, as agricultural and residential water use on an annual basis is similar. Industrial users should benefit from Manteca's conjunctive water use as the groundwater extraction is reduced to the safe aquifer yield.

Surface Water. The City of Manteca, along with the Cities of Escalon, Lathrop and Tracy contracted with the South San Joaquin Irrigation District in 1995 for treated surface water. The contract entitles the City to 11,500 acre-ft of surface water per year in Phase 1 of the project and 18,500 acre-ft in Phase 2. Construction on the water treatment plant and transmission lines was completed in 2005. Surface water deliveries began in July of 2005.

The surface water deliveries are scheduled to increase until full capacity of 18,500 acre feet per year is reached. The project is planned in two phases. Phase 1 provides up to 11,500 acre feet through 2010. Phase 2 would be constructed after 2010 and would provide up to 18,500 acre feet by 2027. Timing of Phase 2 will depend on the water demand in each of the participating cities. At present, Phase 2 has not been planned or funded and is not included in the water supply assessment or verification for the Trails of Manteca Development.

Reclaimed Water. The Urban Water Management Plan and the 2005 Water Master Plan include reclaimed water in future water planning. Reclaimed water requires construction of tertiary filters and disinfection facilities to meet Title 22 Reclamation Criteria. A reclaimed water distribution system is also required. Recent NPDES disposal and treatment requirements resulted in the construction of tertiary filters and disinfection facilities at the Manteca Water Quality Control Facilities. The treatment requirements make the use of reclaimed water for landscape irrigation feasible in some areas of the City but use is limited due to the lack of a reclaimed water distribution system. At present, reclaimed water is available for construction sites

and planned for irrigation of the Big League Dream sports complex. Additional landscape irrigation with reclaimed water is anticipated in the future and is projected reach 2,300 acre feet per year by 2030. The use of reclaimed water for landscape irrigation will reduce the City's water demand and help extend the available water supply.

The Trails of Manteca should incorporate the use of reclaimed water for irrigation in its planning. The planning should include a separate water line for non-potable and reclaimed water use in public landscaping and park irrigation. Prior to the availability of reclaimed water, the public landscaping and park irrigation are to be supplied by a non-potable irrigation well or wells. The non-potable irrigation wells will be funded by the developer. The use of reclaimed water for front yard residential landscape irrigation may be possible at some time in the future. The installation of non-potable purple pipe in the front yard irrigation systems would facilitate implementation of reclaimed water use in residential landscape irrigation.

Groundwater Management. The San Joaquin County Flood Control and Water Conservation District adopted a groundwater management plan for San Joaquin County in 2004, which includes much of the ESJCGB. The City of Manteca participated in the development of the groundwater management plan. A major objective of the groundwater management plan is to stabilize the groundwater level in the central and eastern portions of the basin.

The City of Manteca plans to manage its groundwater use to meet the safe aquifer yield for the area, which has been estimated at 1 acre-ft/acre/year. Historically, Manteca has been extracting groundwater at a rate of 2.4 acre-ft/acre/year. Both the Water Master Plan and the Urban Water Management Plan recognize the overdraft in the basin. The City began reducing its groundwater extraction to the safe aquifer yield when the surface water became available in 2005.

Water Supply Reliability. Water supply reliability is addressed in the Urban Water Management Plan. In past droughts, the groundwater supply has been very reliable. Groundwater levels have dropped during severe droughts but recovered in subsequent years. However, there has been a long-term drop in groundwater levels (approximately 4 feet since 1964) in the Manteca area. The drop in groundwater is due to both the local groundwater pumping and the severe overdraft in the central and eastern portions of the groundwater basin. The combined effort of Manteca to reduce local groundwater overdraft and the San Joaquin County Groundwater Management Plan should help maintain the historical reliability of Manteca's groundwater. Table 3 presents the City's water supply history from 1960 through 2009.

The South San Joaquin Irrigation District supplies surface water to the South County Water Project from Stanislaus River and has pre-1914 water rights to this water source. With the construction of New Melones Reservoir, the SSJID entitlement

Table 3
City of Manteca Water Production History

		Developed Area	Total City Area	Annual Groundwater Use		Annual Surface Water Use		Annual Average Day Use
Year	Population	Acres	Acres	AF	MG	AF	MG	MGD
1960	8242	1117	1176	2,277	742			2.03
1961	8662	1225	1289	2,486	810			2.22
1962	9350	1272	1339	2,575	839			2.30
1963	10175	1338	1408	2,225	725			1.99
1964	10700	1338	1408	2,461	802			2.20
1965	11200	1467	1544	2,467	804			2.20
1966	12000	1540	1621	2,777	905			2.48
1967	12550	1540	1621	2,547	830			2.27
1968	12950	1747	1839	2,802	913			2.50
1969	13500	1831	1927	3,004	979			2.68
1970	13824	1831	1927	3,115	1,015			2.78
1971	14600	1976	2196	3,225	1,051			2.88
1972	15650	2068	2298	3,710	1,209			3.31
1973	16350	2377	2641	3,646	1,188			3.25
1974	17050	2414	2682	3,621	1,180			3.23
1975	17750	2466	2835	3,901	1,271			3.48
1976	18000	2519	2964	4,478	1,459			4.00
1977	18400	2884	3475	3,830	1,248			3.42
1978	20107	3014	3676	4,619	1,505			4.12
1979	21600	3046	3807	5,472	1,783			4.88
1980	23150	3169	4063	5,785	1,885			5.16
1981	25641	3187	4086	6,485	2,113			5.79
1982	27009	3316	4251	6,319	2,059			5.64
1983	27891	3316	4251	6,604	2,152			5.90
1984	29027	3344	4287	8,124	2,647			7.25
1985	32545	3353	4299	8,621	2,809			7.70
1986	35437	3968	5087	9,099	2,965			8.12
1987	37125	4238	5433	9,437	3,075			8.42
1988	38220	4253	5453	8,881	2,894			7.93
1989	39664	4253	5453	10,124	3,299			9.04
1990	40733	4300	6320	9,873	3,217			8.81
1991	41632	4350	6533	8,940	2,913			7.98
1992	42147	4400	6912	9,695	3,159			8.65
1993	43469	4450	6951	10,272	3,347			9.17
1994	44236	4525	7288	10,290	3,353			9.19
1995	44111	4600	7372	10,631	3,464			9.49
1996	44961	4725	9504	11,014	3,589			9.83
1997	45930	4850	9713	11,939	3,890			10.66
1998	47111	4985	9939	10,545	3,436			9.41
1999	49255	5411	10126	12,273	3,999			10.96
2000	51655	5837	10126	12,608	4,108			11.25
2001	55288	6126	10216	12,975	4,228			11.58
2002	57526	6415	10269	13,515	4,404			12.06
2003	60176	6704	10269	14,450	4,708			12.90
2004	61809	6993	10322	14,930	4,865			13.33
2005**	63389	7281	10975	11,275	3,674	3,667	1,194.8	13.34
2006	64488	8393	10975	8,062	2,627	6,739	2,195.8	13.21
2007	66123	8393	11211	9,119	2,971	6,364	2,073.5	13.82
2008	67754	8426	11318	8,557	2,788	6,884	2,243.1	13.78
2009	68847	8438	11426	7,157	2,332.	7,050	2,297	12.68

**Surface water delivery began in 2005

was negotiated with the DWR to 300,000 acre-ft per year. The entitlement is subject to reductions when the New Melones inflow is less than 600,000 acre-feet. An examination of the inflows between 1922 and 2000 indicated that SSJID would have received its full allocation of 300,000 acre-ft in all but 16 years during this period. The severity of possible reductions was estimated by examining the three lowest inflow years of 1977, 1924 and 1988, which would have reduced SSJID's location by 37, 24 and 23 percent, respectively. Conservation and increased groundwater development can sustain reductions of this order. Based on SSJID water rights and minimal reductions in past low flow years, the surface water supply is considered a reliable source. Manteca plans to construct additional groundwater wells to maintain full water supply with a 50% reduction in surface water supply.

Long term overdraft of the basin groundwater poses a water supply reliability threat from the intrusion of saline water. Surface water supplies will enable groundwater pumping to be reduced the in Manteca area and reduce the intrusion of saline water into the area. The implementation of reclaimed water use for public landscape irrigation will also help reduce groundwater use.

Changes in water quality standards have the potential to reduce groundwater available to the City. Water quality standards are reviewed regularly by the EPA and may result in revising existing allowable contaminant levels or establishing limits for new contaminants. The City monitors regulatory actions that can affect City water supplies. The most recent standard revision was for arsenic. The revised limit and the City's response to maintain the water supply is discussed below. The Federal Maximum Contaminant Level (MCL) for arsenic was lowered from 50 µg/l to 10 µg/l in 2001. The revised Federal Standard became effective in 2006. The State of California adopted the 10 µg/l arsenic MCL in November of 2008. Twelve of the 16 City wells exceed the revised arsenic MCL, with concentrations ranging from 12 to 19 µg/l. Manteca is currently installing arsenic treatment and expects to complete the installations in 2010. While no reduction in the water supply is expected from the installation of arsenic treatment systems in Manteca, the development of other water quality standards could require well modification or shut down of existing wells that will reduce the supply of groundwater.

Changes in groundwater quality also have the potential to reduce the amount of groundwater available to the City. For example, three City wells exceeded the nitrate MCL in 2006. The affected wells were shut down until the elevated nitrate problem was resolved. Well modifications were completed at two wells in 2008 and restored 3,500 gpm of the lost production capacity. A water blending project will be completed in 2010 that will restore an additional 1,100 gpm of lost production capacity. There was a loss of 500 gpm in capacity due to the sealing of strata with the high nitrate concentration in one well.

Conclusion

The City of Manteca's water peak hour water supply is not sufficient for the Trails of Manteca Development. A new well and water distribution system improvements are necessary to supply water to the development. Water treatment may also be required to remove arsenic and other contaminants. Surface water in combination with existing and planned groundwater supplies will provide potable water for the development. The specific water distribution improvements for the development will be identified during the tentative map review and approval process.

To reduce the reliance on the potable water system, non-potable water lines should be installed for public landscape and park irrigation. A non-potable landscape irrigation well is required for park irrigation and the public landscaping until reclaimed water is available. The public landscaping should be converted to reclaimed water when it is available. Conversion of the park irrigation to reclaimed water will be evaluated and implemented if deemed acceptable. Reclaimed water for residential landscape irrigation in front yards may be possible in the future. The installation of non-potable water lines (purple pipe) in front yard irrigation systems is recommended to facilitate conversion to reclaimed water.

The City is addressing issues that affect the reliability of its potable water supply, which include the lower arsenic MCL and nitrate contamination. Additional information on Manteca's water supply planning is available in the 2005 Water Master Plan and the 2005 Urban Water Management Plan.

Attachment 1

Trails of Manteca Development

Community Development

Memo

To: Mark Houghton, Public Works Director
Mark McAvoy, Senior Engineer
Keith Conarroe, Associate Civil Engineer

From: Erika Hollander, Senior Planner

Date: April 23, 2009

Re: Water Supply Analysis

Please accept this memo to initiate a water supply analysis for the following project:

The Trails Specific Plan	MFR Units: 300 SFR Units: 1173 1171 TOTAL: ~~1173~~ 1471	Acres:	477 TOTAL: 477	See revised dwelling units in NOP excerpt (attached).

Application Dates: March 25, 2009

Commercial Project: NO

Sent to Public Works: March 30, 2009

Subject to SB 610?: YES

SB 221?: YES

Needs City Council Action?

Went to Council: / /

Analysis Sent Back to Community Development:: / /

Completed Date: / /

Table 1: Development Summary

Land Use	Number of Units	Acreage	Dwelling Units / Acre
Single-Family Residential	1,178	181	8.1-15
Townhomes / Garden Apartments	192	8	15.1-25
Apartments	280	14.3	15.1-25
Parks	—	75	—
Total	**1,651**	**278**	—

A General Plan Amendment is proposed to change the land use designation from Very Low Density Residential, Low Density Residential, Urban Reserve, and Open Space to Low Density Residential, High Density Residential, and Open Space. To establish consistency with the General Plan rezoning of parcels from the Planned Employment Center (PEC) to Planned Development (PD) is also proposed.

1.4 - Required Approvals and Intended Uses

The proposed projects would require the following discretionary approvals and actions:

- General Plan Amendment
- Zone Change
- Planned Development Adoption
- Tentative Subdivision Map
- Development Agreement
- Williamson Act Contract Cancellation

In addition, various local, State, or federal approvals or permits may be necessary, pursuant to applicable laws and regulations.

1.5 - Environmental Review

1.5.1 - Potential Environmental Effects

The EIR will evaluate whether the proposed project may potentially result in one or more significant environmental effects. The topics listed below will be further analyzed in the EIR.

- Aesthetics, Light, and Glare
- Air Quality / Greenhouse Gases
- Cultural Resources
- Hazards and Hazardous Materials
- Land Use
- Population and Housing
- Transportation
- Agricultural Resources
- Biological Resources
- Geology, Soils, and Seismicity
- Hydrology and Water Quality
- Noise
- Public Services and Utilities (includes Recreation)

Attachment 2

2005 Urban Water Management Plan Excerpts

Groundwater

The City is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a sub-basin of the San Joaquin Valley Groundwater Basin. The ESJCGB subbasin number is 5-22.01. DWR's Bulletin 118 – 80, *Ground Water Basins in California* classified the ESJCGB as a basin in a critical condition of overdraft. The Northeastern Groundwater Banking Authority and the San Joaquin County Flood Control and Water Conservation District undertook the development of a groundwater management plan for San Joaquin County, which includes most of the ESJCGB. The San Joaquin County Board of Supervisors adopted the groundwater management plan in September of 2005. The South County Water Supply Project is discussed in the groundwater management plan as an integrated conjuctive use program element.

The groundwater aquifers underlying the City extend to depths in excess of 600 feet have been identified to include four geologic formations. In increasing depth from the surface, the identified aquifers are Victor Formation, Laguna Formation, Mehrten Formation, and Valley Springs Formation. Due to the alluvial generation of these aquifers, there is significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material and lower permeability clays. In general, the strata slope from the hills east of the City downward to the west, providing good recharge from hill runoff as well as from the Stanislaus River. The City's wells primarily withdraw water from the Laguna and Victor Formations.

The groundwater basin safe yield was estimated in a 1985-groundwater study at 1.0 acre-foot per acre per year. Historically, the City extracted groundwater at a rate of approximately 2.4 acre-feet per acre per year, based on the developed City area. As discussed previously, the South County Water Supply project will allow the City's to reduce local groundwater extraction to the basin safe yield of 1.0 acre-foot per acre per year. Groundwater pumping by City wells from 2000 to 2004 is summarized in Table 5.

Table 5.

City of Manteca Groundwater Pumping

Year	**2000**	**2001**	**2002**	**2003**	**2004**
Acre Feet	12,609	12,974	13,516	14,451	14,933
Percent of Water Supply	100	100	100	100	100

Recycled Water

The City wastewater quality control facility (WQCF) treats an average dry-weather wastewater flow of about 6 mgd and has an average dry weather design capacity of 6.95 mgd. A WQCF expansion is currently in progress to increase the average dry weather capacity to 9.87 mgd. Approximately 15 percent of the wastewater treated at the WQCF is from the City of Lathrop.

Supply and Demand Comparison

Law

> 10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.

Supply and Demand Comparison

Table 9 compares current and projected water supply and demand. It indicates that in average water years, the City has sufficient water to meet its customers' needs, through 2025. This is based on continued development of groundwater wells and completion of the South County Surface Water Project. As noted in Table 9, the supply totals assume a groundwater withdrawal rate of 1.0 acre ft per acre per year beginning in 2005.

Table 9.
Projected Supply and Demand Comparison

	2005	2010	2015	2020	2025	2030
Supply totals	15,591	18,471	22,286	27,279	32,334	34,590
Demand totals	15,491	18,310	21,641	25,579	30,234	35,735
Difference	100	161	645	1,700	2,100	-1,145
Units of Measure: Acre-feet/Year						

It is estimated that water demand will exceed supply in 2030 by about 3.3 percent.

Table 10 presents a supply and demand comparison where surface water supply decreases in response to dry year conditions. This analysis assumes that groundwater is extracted at 1 acre-foot/acre per year. The groundwater supply is increased yearly as required to conform to City policy of assuring there is adequate water and sewer capacity for new development. This requires the development of additional groundwater supplies to maintain the groundwater supply at 47 percent of the water supply. The water demands presented in Table 10 assume a 3.4 percent annually increase. The water supply demand scenario calculation is included in Appendix C.

Table 10.

Single Dry Year and Multiple Dry Water Years
Water Demand-Supply Comparison

Water Supply Sources	Current Supply	Single Dry Water Year 2005	Multiple Dry Water Years			
			Year 1 2006	Year 2 2007	Year 3 2008	Year 4 2009
Supply totals	18,474	14,564	19,028	17,904	18,322	18,021
Percent supply reduction	0	22	0	6	5	8
Demand totals	15,491	15491	16,018	16,562	17,125	17,708
Difference	2,983	-927	3,010	1,342	1,197	313
Unit of Measure: Acre-feet/Year						

Water Shortage Contingency Ordinance/Resolution

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (h) A draft water shortage contingency resolution or ordinance.

City of Manteca Water Use Ordinance

The City of Manteca adopted an emergency water conservation ordinance in June of 1990 for the period from July 1, 1990 through October 1, 1990; the City then adopted a mandatory Water Conservation ordinance in 1991 that restricts various types of water uses between July 1 and October 1. Penalties for violation of the water use restriction were also established in the ordinance. In January 1995, the ordinance was amended to expand the time frame of mandatory water conservation (Ordinance No. 986). The revised water conservation "season" coincides with Daylight Saving Time each year. Every residence and business within the City limits receives notification in late March outlining the requirements of mandatory water conservation.

The ordinance does not contain provisions for restricting water use during water shortages. Should a severe water shortage occur as a result of a prolonged drought or other disaster, the City would need to adopt an emergency ordinance to restrict water use as needed.

A draft ordinance for adoption during a water shortage is included in Appendix F.

Charges for Excessive Use

The City of Manteca has a fixed monthly charge plus an inclining block rate water use charge to encourage water conservation. The water rate charges are listed in the City of Manteca Muncipal Code (Code 13.04.060). The water rate structure is summarized in Table 12. The Water Rates are adjusted annually to reflect current cost of water production and treatment.

Table 12.

City of Manteca Water Rate Schedule
For Year 2005

Meter Size	Fixed Monthly Charge	Block 1 @ $0.64 per Hcf	Block 2 @ $0.84 per Hcf	Block 3 @ $1.69 Per Hcf
5/8" x3/4"	13.55	20 Hcf	21 to 300 Hcf	Above 300 Hcf
1"	20.95	30 Hcf	31 to 300 Hcf	Above 300 Hcf
1-1/2"	39.25	60 Hcf	61 t0 300 Hcf	Above 300 Hcf
2"	61.35	90 Hcf	91 to 300 Hcf	Above 300 Hcf
3"	112.95	180 Hcf	181 to 300 Hcf	Above 300 Hcf
4"	186.65	280 Hcf	281 to 300 Hcf	Above 300 Hcf
6"	370.70	340 Hcf	--	Above 300 Hcf
8"	591.65	520 Hcf	--	Above 300 Hcf

To date, the water use charges, and the mandatory and voluntary conservation program has succeeded in reducing water usage so that the City of Manteca has not had to adopt more stringent restriction regulations.

Stages of Action

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

Rationing Stages and Reduction Goals

The City would adopt a staged rationing plan to invoke during declared water shortages. The proposed rationing plan is presented in Table 13. The existing City water conservation ordinance is in effect during daylight savings each year regardless of the water shortage condition. The water conservation ordinance encompasses much of the water reductions of a Stage I or II goal. The implementation of a Stage III or IV goal would involve more restrictive use of water, such as limiting water use for landscape irrigation on both public and private property. More restrictive water use limits and mandatory reductions for a Stage II, III or IV water reduction goal would require action by the City Council to implement.

Table 13.
Water Rationing Stages and Reduction Goals

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
Up to 10%	I	10%	Voluntary
10 – 20%	II	20%	Mandatory
20 - 35%	III	35%	Mandatory
35 - 50%	IV	50% or >	Mandatory

Priority by Use

Priorities for use of available potable water during shortages were based on legal requirements set forth in the California Water Code, Sections 350-358. Water allocations are established for all customers according to the following ranking system:

- Minimum health and safety allocations for interior residential needs (includes single family, multi-family, hospitals and convalescent facilities, retirement and mobile home communities, and student housing, and fire fighting and public safety)
- Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allocations for employees and visitors), to maintain jobs and economic base of the community (not for landscape uses)
- Existing landscaping
- New customers, proposed projects without permits when shortage declared.

Health and Safety Requirements

Based on commonly accepted estimates of interior residential water use in the United States, Table 14 indicates per capita health and safety water requirements. In Stage I shortages, customers may adjust either interior or outdoor water use (or both), in order to meet the voluntary water reduction goal. Under Stage II shortages, the mandatory outside water use restriction, combined with interior water use conservation will help meet water reduction requirements.

Under Stage III and Stage IV a more stringent water rationing and water use program would be required. To meet the Stage III conservation requirements the City would limit outdoor water uses and landscape irrigation and would consider a ration allotment of 68 gpcd (which translates to 33 hundred cubic feet per person per year), based on Table 14 Per Capita Health and Safety Water Quantity calculation for non-conserving fixtures without habit or plumbing fixture changes. If customers wish to change water use habits or plumbing fixtures, 68 gpcd could provide a limited amount of water for non-essential (i.e. outdoor) uses.

Stage IV mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or as a result of a disaster, would require that customers to eliminate outdoor water uses and make changes in their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent and shorter showers)

Table 14.

Per Capita Health and Safety Water Quantity Calculations

	Non-Conserving Fixtures		**Habit Changes** 1		**Conserving Fixtures** 2	
Toilets	5 flushes x 5.5 gpf	27.5	3 flushes x 5.5 gpf	16.5	5 flushes x 1.6 gpf	8.0
Shower	5 min x 4.0 gpm	20.0	4 min x 3.0 gpm	12.0	5 min x 2.0	10.0
Washer	12.5 gpcd	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total (gpcd)		68.0		48.0		37.5
HCF per capita per year		33.0		23.0		18.0

1 Reduced shower use results from shorter and reduced flow. Reduced washer use results from fuller loads.
2 Fixtures include ULF 1.6 gpf toilets, 2.0 gpm showerheads and water efficient clothes washers.

Water Shortage Stages and Triggering Mechanisms

The City must provide the minimum health and safety water needs of the community at all times. The water shortage response is designed to provide a minimum of 50% of normal supply during a severe or extended water shortage. The rationing program triggering levels shown in Table 14 were established to ensure that this goal is met.

Rationing stages may be triggered by groundwater or surface water supply shortages. Groundwater shortages caused by depletion of the groundwater, by the loss of one or more wells by failure of either the well or mechanical equipment, or by well contamination. Surface water shortages may be caused by failures at the treatment plant or water transmission line, drought, water contamination, or power failure.

Table 15.
Water Shortage Stages and Triggering Mechanisms

Percent Reduction of Supply	Stage I Up to 10%	Stage II 10 – 20%	Stage III 20 - 35%	Stage IV 35 - 50% >
Water Supply Condition				
Current Supply	Total supply is 90% of "normal." Or	Total supply is 80 – 90% of "normal." Or	Total supply is 65 – 80% of "normal." Or	Total supply is less than 65% of "normal." Or
Future Supply	Projected supply insufficient to provide 90% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 80% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 65% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 50% of "normal" deliveries for the next two years. Or
Water Quality	Contamination of 10% of water supply (exceeds primary drinking water standards)	Contamination of 20% of water supply (exceeds primary drinking water standards)	Contamination of 30% of water supply (exceeds primary drinking water standards)	Or
Disaster Loss				Disaster Loss

Water Reductions

Comparison of historical water usage with water shortage stages indicates the City has an adequate supply during the winter, spring and fall. Peak water demand would exceed the water system peak capacity during the months of June through October. The severity of the peak shortage and months in effect depend on the water shortage stage. The total water demand is mostly residential and ranges between 75 and 77 percent of the annual demand. Comparison of the winter and summer demands indicate that landscape irrigation is the major water use during the summer.

Table 16 presents the City established reductions for each customer type during the summer months when peak capacity shortage would occur. The reductions are based on winter and summer water demands. The winter demand provides a basis for minimum essential supply (non-irrigation use) for all customers. For residential customers the winter and summer per capita demand are considered to define the required reduction. For other customer types, total winter and summer use are used to define the required reductions, with winter use defining the minimum essential use. The percent reductions shown in Table 16 would be applied during the City's peak water demand period of June through October. Application of the water reductions provides water in excess of the winter water usage for all customer groups and maintains an additional 2000 gpm reserve capacity based on maximum day capacity (70% of well capacity). The reductions are for landscape irrigation and other outdoor water use and have minimal impact on indoor water use. Differences in the total reduction achieved and supply shortage for Stages I, II and III are made up from the system's excess capacity. Appendix E provides a breakdown of the water reductions presented in Table 16.

Table 16.

Customer Water Reductions During Water Shortage

Customer	Stage 1 Reduction, %	Stage 2 Reduction, %	Stage 3 Reduction, %	Stage 4 Reduction, %
Residential	5	15	35	55
Markets	--	--	5	10
Hotels/Motels	--	10	20	20
Trailer Parks	5	10	30	50
Rooming Houses	5	10	20	20
Professional Offices	--	10	25	35
Retail Stores	--	10	20	30
Car Wash	--	--	5	10
Service Stations	--	--	5	10
Restaurants	--	--	5	10
Schools	--	10	15	30
Hospitals	--	--	10	15
Churches	--	--	10	20
Institutions/ Non-Profit	--	--	5	20
Industrial	--	--	5	10
City Landscape and Parks	--	15	35	60
Total Reduction	4	14	33	52

Any customer may appeal the classification on the basis of use or the allotment on the basis of incorrect calculation.

Prohibitions, Consumption Reduction Methods and Penalties

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
> 10632 (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
> 10632 (f) Penalties or charges for excessive use, where applicable.

Mandatory Prohibitions on Water Wasting

The City Ordinance includes provisions on Unlawful Water Use, which include specific types of water use as well as water waste. The Unlawful Water Use provisions are in effect during Daylight Savings and include prohibitions and limitations for the following types of water use. The Unlawful Water Use provisions are included in Appendix F.

- Washing of nonlandscaped exterior ground surfaces,
- Watering landscape, exterior building washing, or swimming pool filling on Tuesday,

Thursday and Saturday for odd-number addresses, or on Monday, Wednesday and Friday for even-number addresses, or at any location between noon and 6 p.m. on any day; with exceptions for newly planted landscaping, the city golf course and city parks.

- Taking of water from any fire hydrant except by fire protection agencies, or for construction purposes by permit from the public works department.
- Allowing the escape of water through leaks, breaks or malfunction in plumbing or distribution system for more than 24-hours after discovery or notification of discovery.
- Washing of automobiles or boats; except at a commercial car wash, or by use of a quick-acting positive shut-off nozzle on the hose, or with bucket and sponge.
- No serving of water by restaurants except upon request of a customer.
- Watering which causes water to flow into a gutter or other drainage area for a period exceeding five minutes.

More restrictive water use limits that can be inacted to reduce water demand and include further reduction in landscape water use such as once a week watering, no vehicle washing, and the reduction or elimination of park irrigation.

No 'cut-off' number has been adopted for maximum allowable consumption but the City of Manteca implemented an increasing block schedule for all customer types to encourage water conservation and penalties for unlawful water uses defined in the City Ordinance. Table 17 lists consumption reductions methods the City would use during water short stages.

Table 17.

Consumption Reduction Methods

Examples of Consumption Reduction Methods	Stage When Method Takes Effect
Demand reduction program	All stages
Reduce pressure in water lines	--
Flow restriction	--
Restrict building permits	Stage IV
Restrict for only priority uses	--
Use prohibitions	All stages
Water shortage pricing	--
Per capita allotment by customer type	--
Plumbing fixture replacement	--
Voluntary rationing	All stages
Mandatory rationing	Stage II, III and IV
Cost incentives to reduce water consumption	All Stages
Education Program	All Stages
Percentage reduction by customer type	All Stages
Penalties for unlawful water use	All Stages

The Unlawful Water Use provisions of the City Ordinance are in effect for only part of the year but could be applied during any water short period if necessary by action of the City Council. Additional water conservation methods not included in the Unlawful Water Use Ordinance could also be implemented during a water shortage by action of the City Council.

Excessive Use Penalties

Any customer violating the regulations and restrictions on water use set forth in the City Ordinance receives a written notice for the first such violation. A second violation, is an infraction of the City Ordinance, and is punishable by a fine of fifty dollars ($50.00). A third violation is an infraction of the City Ordinance and is punishable by one hundred dollar fine ($100.00). Any subsequent violation is a misdemeanor and is punishable by a fine of one thousand dollars ($1,000.00), or by imprisonment in the county jail for a period not to exceed six months, or by both a fine and imprisonment.

Penalties for not reducing water use during a declared water shortage stage could be implemented by action of the City Council.

Revenue and Expenditure Impacts and Measures to Overcome Impacts

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier and [An analysis of the impacts of each of the] proposed measures to overcome those [revenue and expenditure] impacts, such as the development of reserves and rate adjustments.

In 1996, the City initiated a water service rate study to evaluate the current City rate and recommend a new rate structure as necessary to cover the future cost of supplying water to City customers. The result of the study was the adoption of an inclining block rate for all City water customers. The rate structure included a fixed cost component for the fixed cost component of the water supply, and three use rate blocks for the variable cost of water supply. The rate study included costs for City participation in the South County Surface Water Supply project as well as cost of providing water from the City groundwater wells and funding cash reserves and capital replacements. The rate study also included recommendations for increasing the fixed and variable cost of water over a five year period (through the 2002 fiscal year) to account for inflation, and other system cost increases. The recommended rate increases also provide a gradual transition from the low cost groundwater supply to the more costly combined surface water and groundwater supply.

In 2002, the City conducted another rate study to update the water rates and water development fees. Based on the findings of the study water rates and development fees were developed and adopted the five year period between 2003 and 2007. The existing rate structure and fee structures were retained. The adopted rates include provisions for construction of arsenic treatment facilities as well as retaining the rate increase structure to pay for surface water and fund reserves. Reserves established in the 2002 rate study included an operating reserve equal to 33 percent of the annual operating budget and a rate stabilization reserve. The operating reserve requirement is estimated to reach $2,744,000 by 2007. The rate stabilization reserve is $1,500,000.

As there is a fixed fee component in the water rate structure to cover fixed costs, reductions in water use will not adversely affect the financial stability of the water enterprise. Reserve requirements were developed to build and maintain reserves for capital improvements and short term operating expenses. An operating reserve fund and rate stabilization reserve were established

The 2002 water rate study also evaluated the effect of different growth rates on the ability of the water enterprise to meet financial obligations. It was found that only in a zero growth condition would the City need to increase water rates above the scheduled rate increases at the end of the rate study's five year planning period.

Reduction Measuring Mechanism
Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

Mechanism to Determine Reductions in Water Use

All of the City groundwater wells are metered and well operations are monitored and recorded by the City's SCADA system. Water production reports can be generated to track reductions in use that may result from water conservation programs implemented by the City. In addition, all City provided water services are metered, which allows tracking of individual customer water use. Typically, the customer water meters are read monthly, but during a water shortage more frequent readings could be taken if necessary to identify excessive water use and monitor customer water reductions. The City has implemented an automated meter reading system and is gradually converting all services to the automated meter reading system. Automated meter reading will facilitate a more frequent meter reading schedule if necessary.

Attachment 3

Water Demand Supply Comparisons 2030 to 2035.

Revised Tables 4, 7 and 9

Revised Table 4
Current and Projected Water Supplies

Water Supply Sources	2005	2010	2015	2020	2025	2030	2035
Purchased from USBR							
Purchased from DWR							
Purchased from wholesaler (SSJID South County Surface Water Project)	4,100	9,704	11,470	13,557	16,444	18,500	18,500
City produced groundwater	11,491	8,606	10,171	12,022	13,790	13,790	13790
City produced surface water							
Transfers							
Exchanges In							
Recycled Water		161	645	1,700	2,100	2,300	2,500
Recycled Water used for ground water recharge (adds to gw supply)							
Other							
Total	15,591	18,471	22,286	27,279	32,334	34,590	34,790
Units of Measure: Acre-feet/Year							

	Revised Table 7 Past, Current and Projected Water Use									
Water Use Sectors	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Single family residential	6,235	5,789	8,035	10,467	12,372	12,721	13,826	16,342	19,316	22,830
Multi-family residential	1,267	1,068	1,260	1,314	1,553	1,597	1,736	2,052	2,425	2,866
Commercial	828	815	1,103	1,211	1,431	1,472	1,600	1,891	2,235	2,642
Industrial	173	213	145	107	126	130	142	167	198	234
Institutional and governmental	220	251	363	329	390	400	434	574	759	897
Landscape	548	598	658	617	729	750	815	963	1,136	1,345
Sales to other agencies	0	0	0							
Saline barriers	0	0	0							
Groundwater recharge (recycled water)	0	0	0							
Conjunctive use	0	0	0							
Agriculture	0	0	0							
Unaccounted-for system losses	602	1,988	1,044	1,446	1,709	2,020	2,388	2,822	3,336	3,944
Total	9,873	10,631	12,608	15,491	18,310	19,090	20,941	24,752	29,407	34,759
	Unit of Measure: Acre-feet/Year									

13% Reduction in water Demand by conservation achieved in 2015
20% Reduction in water demand by conservation achieved by 2020-2035

Revised Table 9 Projected Supply and Demand Comparison							
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Supply totals	15,591	18,471	22,286	27,279	32,334	34,590	34,790
Demand totals	15,491	18,310	19,090	20,941	24,752	29,407	34,759
Difference	100	161	3,196	6,338	7,582	5,183	31
Units of Measure: Acre-feet/Year							

J.2 - Public Services and Utilities Letters

CITY OF MANTECA
FIRE DEPARTMENT

August 17, 2010

Manteca Fire Department Questionnaire for the Trails of Manteca

(Southwest area of City of Manteca)

FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

The Manteca Fire Department provides fire protection and emergency medical services to the City of Manteca. The Fire Department is headquartered at 1154 S. Union Road.

Stations

The Fire Department staffs three stations, summarized in Table 1.

Table 1: Fire Station Summary

No.	Location	Apparatus	Distance to Project Site
1	290 S. Powers Avenue	Engine 241 and Rescue 24	5.8 miles
2	1154 S. Union Road (Headquarters)	Engine 242 and Truck 24	3.2 miles
3	399 W. Louise Avenue	Engine 243	5.7 miles

Organization

The Fire Department is organized into three divisions: Administration, Operations, and the Fire Prevention Bureau.

Administration Division

The Administration Division provides for and manages several important functions of the Department including Personnel, Communications/Dispatch, Policies and Procedures, Recruitment and Emergency Planning.

Operations Division

The Operations Division is responsible for responding to emergencies including fires, hazardous materials releases and treating the sick and injured. Through an agreement with the City of Stockton Fire Dispatch Center, the Manteca Fire Department receives 911 requests for service from Stockton Fire.

Comprehensive mutual and automatic aid agreements with the Lathrop-Manteca Fire District and other surrounding fire agencies, as well as the State of California, allows the Manteca Fire Department to receive and provide emergency response resources to surrounding jurisdictions and throughout the state.

All Operations Division Personnel, including the Shift Commanders work a 56-hour workweek and 48 hour shifts. The Shift Commander is assigned to supervise each of the three shifts and responds to emergencies while on-duty 24 hours a day. Three engine companies, a truck company, and one rescue unit respond from three stations strategically located throughout the City of Manteca.

Prevention Bureau

The Fire Prevention Bureau administers and enforces local, state and national fire and life safety codes. The bureau's responsibilities include a wide range of activities and programs including fire inspections, re-inspections, land development project reviews, fire code developments, fire sprinkler and alarm system plan reviews, new business license inspections, fire code permit inspections, vegetation management and weed abatement programs, public education, hazardous materials inspections providing awareness and identification for businesses.

Staffing

The Fire Department is combined of career and reserve fire personnel. The Fire Department is staffed by 42 career personnel and 20 reserve personnel. Each engine company and truck company is staffed with a minimum of three Firefighters, which helps provide for an effective workforce of 15 Firefighters responding for all structure fires.

Apparatus

The Fire Department operates the follow fire and emergency medical response apparatus:

- 3 Engines
- 1 Ladder Truck
- 3 Reserve Engines
- 1 Medium Rescue Unit
- 1 USAR Rescue Trailer

Calls for Service

The Fire Department responded to 4,823 calls for service in 2009. Table 2 summarizes the calls for service.

Table 2: Calls for Service Summary

Category	Calls	Percent of Total
Emergency medical services	3,065	64
Other emergencies	857	18
Service	589	12
Fires	274	6
Total	**4,785**	**100**

Notes:
Other emergencies include vehicle accidents, hazmat releases and electrical emergencies.
Service calls include smoke/odor investigations, public/police assists and false alarms.

Response Times

Table 3 summarizes response times by station for 2009. The Fire Department's response time objective is being on-scene within 5 minutes of dispatch.

Table 3: Response Times by Fire Station (2009)

No.	Location	Apparatus	Average Response Time (Minutes)
1	290 S. Powers Avenue	Engine 241	3.5
2	1154 S. Union Road (Headquarters)	Engine 242	4.2
3	399 W. Louise Avenue	Engine 243	4.5

ISO Rating

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the Manteca Fire Department as a 3 on a scale of 1 to 10, with 1 being the highest possible protection rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes. The ISO ratings are used to establish fire insurance premiums.

Questions about Impact and Service to Project Areas

1. Please provide the estimated calls for service the proposed project would generate on an annual basis. If possible, we would appreciate a breakdown of calls by type (e.g., medical, fire, etc.).

Answer: A review of the calls for service in a like-size and type neighborhood reveals the following expected service needs annually for the project area:

Fires – 8
EMS – 95
Hazardous Conditions – 4
Service Calls – 9
Good Intent Calls – 18
False Alarms & False Calls – 3
Total – 137 calls for service

2. Please indicate if the Fire Department would have adequate resources to accommodate the service demands of the proposed project. This includes response times, staffing, apparatus, fire stations, etc. For any significant concerns, please describe what measures you would recommend to reduce the potential impact.

Answer: The City of Manteca has existing staffed Fire Stations, which can serve the proposed project and expected increases in service. However, the location of the project is outside of our capability to meet the department's emergency response time standard. The City of Manteca's Fire Station #2 is the closest existing fire station and can service the project areas with a response time of 5–7 minutes depending on the location of the emergency. The Manteca Fire Department has a response time standard of arriving on-scene within 5 minutes of dispatch for all emergencies. Although department staffing level from existing fire stations and infrastructure within the City provides for the highest level of service in the vicinity for the project area; the construction of an additional fire station staffed with firefighters and apparatus will be needed to service the project area and achieve the department's 5-minute response standard.

3. Please feel free to provide additional information you believe to be relevant to the proposed project.

Answer A: A fire station (with staffing/equipment) in this Southwest area is third on the priority list for fire service needs within the City of Manteca. First priority is the Northwest area of the City at the 1400 block of Lathrop Road, followed second by the need for a fire station to serve the Southeast area of the City located at Woodward and Atherton. The City of Manteca has secured land for these sites and architectural designs are currently in progress.

Answer B: It is recommended that the City of Manteca Public Works Department assess the project area for service needs related to flood potential.

Please feel free to contact me with any questions.

Sincerely,

Kirk Waters, Fire Chief

August 12, 2010

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
Attn: Grant Gruber

Subject: **The Trails of Manteca Environmental Impact Report: Police Department Questionnaire**

Michael Brandon Associates:

This letter is in response to your questionnaire letter dated August 3, 2010. The figures and conclusions provided are based upon the information in your letter that states the project will consist of 1,178 single-family residences, 192 townhomes/garden apartments, and 280 apartments.

If you have any questions please feel free to contact me.

Sincerely,

Charlie Goeken
Captain, Patrol Division Commander
1001 West Center Street
Manteca, CA. 95337

POLICE PROTECTION

The Manteca Police Department provides police protection to the City of Manteca. The Police Department is headquartered at 1001 W. Center Street.

Organization and Staffing

The Police Department is organized into two divisions: operations and services.

OPERATIONS DIVISION

The Operations Division is the larger of the two divisions and includes the majority of the Police Department's uniformed police officers. The division is responsible for providing direct police response to requests for assistance. The patrol, traffic, and community service officers respond to and investigate criminal acts and public safety concerns. Operations includes teams that have been specially trained and equipped to meet some of the community and the Police Department's special needs, including canine, mounted patrol, bomb disposal, Special Weapons and Tactics (SWAT), and crisis negotiations. Fifty-two employees are assigned to the Operations Division.

SERVICES DIVISION

The Services Division is made up of several units, including Detectives, Gang Unit, Records, Evidence and Property, Dispatch, and Animal Services. The Services Division consists of approximately 95 full-time, part-time, and volunteer employees managed by five supervisors, and the Division Commander who oversees the management and operations of the units.

Calls For Service

The Police Department responded to 35,334 calls for service in 2009.

Response Times

The Police Department's response time standards are 3 minutes or less for Priority 1 (emergency) calls and 30 minutes or less for Priority 2 (non-emergency) calls. In 2009, the Police Department responded to 97.8 percent of Priority 1 calls within 3 minutes or less and 98.7 percent of the Priority 2 calls within 30 minutes or less.

2. **Estimated Calls For Service The Proposed Project Would Generate On An Annual Basis**

The population of the City of Manteca in 2009 was 67,754. The Police Department responded to 35,334 calls for service in 2009. This equates to .52 calls for service per resident. The Trails of Manteca project is anticipating 1650 dwellings of varying types. The average density for all types of dwellings in the City of Manteca is 3.04 persons per dwelling. This means the Trails of Manteca should add an estimated 5016 residents to the City of Manteca and add an additional 2608 calls for service per year, when it is completely built out.

3. **Adequacy Of Police Department Resources To Accommodate The Service Demands Of The Proposed Project.**

   The Manteca Police Department currently has 59 sworn police officers, including the chief of police, two captains, one lieutenant and ten sergeants. This equals an officer per 1000 ratio of .87 and means each officer handled 599 calls a year on average. The 5016 residents and 2608 calls for service this project would generate would require four officers to serve the residents to maintain the response times listed above and the per 1000 resident ratio. The command staff and most off patrol assignments do not handle calls for service, but are included in standard officer per 1000 calculations.

   The residential property tax collected by the general fund should adequately cover the additional officers needed to serve the future residents. Once the houses are built and occupied the police department would ask for increased officers in future budgets in an attempt to maintain the per officer ratio and response times.

4. **Additional Relevant Information**

   There is no additional relevant information at this time.

MUSD
French Camp Lathrop Manteca Weston Ranch
Manteca Unified School District

Michael Garr, Director of Facilities

September 21, 2010

Michael Brandman Associates
Attention: Grant Gruber
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, California 94583

RE: **The Trails of Manteca EIR**

Dear Mr. Gruber:

In response to your questionnaire dated August 3, 2010 to Jason Messer, we have gathered the following information:

1. The Manteca Unified School District has 28 schools: 20 Elementary Schools, 5 High Schools, 2 Continuation Schools, and 1 Day School. Our Total District-Wide Enrollment is 23, 349.

2. The expected number of students that this project would generate would be approximately **953** students. This breakdown would be **538** K-6 students, **151** 7-8 students, and **264** 9-12 students.

3. The Elementary Schools that currently serve the proposed project are Veritas Elementary School and Nile Garden Elementary School. We anticipate the need to acquire another Elementary School Site in the area. When this new school campus is built, it will serve this development. The High School that currently serves the proposed project is Sierra High School. The District has purchased a high school site in the area. When this new High School campus is built, it will serve this development.

4. Our most recent development fees for residential development are $2.97 per square foot. This fee amount will change effective September 27, 2010 to $2.96 per square foot. Our most current justification study was done on May 27, 2010.

I hope this information will satisfy your questions/concerns regarding the potential project impact on Manteca Unified School District/

Sincerely,
MANTECA UNIFIED SCHOOL DISTRICT

MICHAEL GARR
Director of Facilities

P.O. Box 32
Manteca, CA 95336
2271 W. Louise Avenue, Manteca, CA

Phone (209) 825-3200x50765
Fax (209) 825-3249

1524 N Carpenter Road
Modesto, CA 95351-1110

August 18, 2010

Grant Gruber, Project Manager
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

Grant:

Project Site: 447 acres, bounded by E. Woodward Rd to the North, S. Woodward Ave. to the West, and vacant land to the East and the South, Manteca

PG&E will be the provider of Natural Gas & Electric Service to the above mentioned project. We will provide gas and electic service in accordance with Gas& Electric Rules 15 and 16 filed with the California Public Utilities Commission.

Should the customer request other the standard gas pressure they should request this through the application process.

If you have any questions, please feel free to call me at (209) 480-1681.

Sincerely,

Jim Wirowek
Sr. New Business Rep
Pacific Gas & Electric Co
226 E Yosemite St
Manteca, CA 95336
209.932.6415
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Appendix K:
Transportation Impact Analysis

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EXECUTIVE SUMMARY

This report analyzes the transportation impacts associated with development of the Manteca Trails project, which would be located south of Woodward Avenue and west of Airport Way within the Manteca City Limits.

The study area is generally bounded by Interstate 5 (I-5) on the west, Main Street on the east, Yosemite Avenue on the north, and the Manteca City Limits on the south. Figure 1 displays the 14 intersections selected for analysis under weekday AM and PM peak hour conditions. In addition, freeway segments and ramps on State Route (SR) 120 between I-5 and Main Street were also analyzed.

PROJECT DESCRIPTION

The proposed project consists of the following trip generating land uses according to the Notice of Preparation (dated July 15, 2010):

- 1,178 single-family dwelling units
- 192 townhomes/garden apartments; and
- 280 apartments

The project will include over 12 miles of bicycle/pedestrian trails and a clubhouse for use by its residents. Access to the project would be provided onto Woodward Avenue by three new public street connections.

EXISTING CONDITIONS

All study intersections currently operate at an acceptable level of service (LOS) according to the operating standard of the applicable agency. All freeway study facilities currently operate at an acceptable LOS D or better with the exception of eastbound SR 120 between I-5 and Yosemite Avenue and the SR 120 EB off-ramp diverge at Airport Way, each of which operates at LOS E during the PM peak hour.

EXISTING PLUS PROJECT CONDITIONS

Development of the proposed project under existing conditions would cause the following significant transportation impacts:

Impact TR-1: Traffic Impacts During Construction

Mitigation: *The applicant shall prepare a construction traffic management plan to the satisfaction of the City's Public Works Department.* The plan shall ensure that acceptable operating conditions are maintained on local roadways during peak travel hours. Implementation of this measure would reduce the above impact to less-than-significant.

Impact TR-2: Traffic Impacts to SR 120

Mitigation: *The project applicant shall pay the appropriate San Joaquin County Regional Traffic Impact Fee (RTIF), which is collecting fees from new developments to help fund the widening of SR 120 to six lanes.* Implementation of this mitigation measure would reduce the significance of the impact. However, the impact would remain significant and unavoidable because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time.

Impact TR-3: Traffic Impacts to Manteca Intersections

Mitigation: *The project applicant shall pay the appropriate PFIP fee and/or construct (with potential to receive credit toward future PFIP fees) the following improvements:*

- *Woodward Avenue/McKinley Avenue – Widen intersection to include a two-way left-turn lane on Woodward Avenue to accommodate eastbound and southbound left-turn movements. Construct channelized southbound right-turn lane; or*

Construct Atherton Drive extension to Woodward Avenue prior to operations at the Woodward Avenue/McKinley Avenue intersection degrading to an unacceptable level. Operations are projected to degrade to unacceptable at approximately 70 percent of project buildout This new road construction would divert all trips away from the Woodward Avenue/McKinley Avenue intersection, thereby no longer requiring the need for any improvements. If the City decides this improvement will be warranted due to uncertainties regarding the timing of the Atherton Drive extension, it would be the applicant's responsibility.

- *Atherton Drive/Airport Way – Install traffic signal and restripe northbound approach to include one left-turn lane, one through lane, and one shared through/right lane. Restripe northbound Airport Way north of Atherton Drive to include a second travel lane to the SR 120 eastbound ramps intersection.*
- *Woodward Avenue/Airport Way – Install traffic signal and widen intersection to include exclusive left-turn lane and shared through/right lane on eastbound, westbound, and northbound approaches. Widen southbound approach to include exclusive left, through, and right-turn lanes and operate right-turn lane with overlap arrow.*

Improvements at the Atherton Drive/Airport Way and Woodward Avenue/Airport Way intersections are included in the City's PFIP. *Project mitigation may take the form of payment of the applicable PFIP fee with required improvements to be constructed by the City when warranted. Alternatively, the project applicant may be asked to construct these, or other equally effective improvements and receive credit toward PFIP fees.* Implementation of these measures would reduce the above impact to less-than-significant.

Impact TR-4: Impacts to Bicycle/Pedestrian Facilities

Mitigation: *The project applicant shall construct a a bicycle facility along the project's frontage on Woodward Avenue in accordance with planned improvements in the latest version of the*

City's Bikeway Master Plan. Implementation of this measure would reduce this impact to less than significant.

Impact TR-5: Insufficient Transit Facilities
Mitigation: *The project applicant shall incorporate bus turnouts and shelters into the project site plan as required by the City's Public Works Department and Manteca Transit.* Implementation of this mitigation measure would reduce this impact to less-than-significant.

Impact TR-6: Nonstandard Roadway Design Features
Mitigation: *The project applicant shall reconstruct the horizontal curve on Woodward Avenue in the northwest quadrant of the project to have a radius of at least 180 feet, which would increase its design speed from 15 to 25 mph.* Implementation of this mitigation measure would reduce the above impact to less-than-significant.

Impact TR-7: Inadequate Emergency Vehicle Access
Mitigation: The project applicant shall identify a temporary emergency vehicle access (EVA) to the proposed project. The temporary EVA shall provide access from the east and be maintained until a second permanent roadway connection is established (i.e., Woodward Avenue after the Atherton Drive extension is completed). The temporary EVA alignment shall be suitable for use by large emergency vehicles (e.g., fire engines) and be reviewed and approved by the City of Manteca.
Implementation of this mitigation measure would reduce the above impact to a less-than-significant level. However, if the applicant was unsuccessful in acquiring an EVA, this impact would remain significant and unavoidable until the Atherton Drive extension is completed.

Impact TR-8: Impacts to At-Grade Railroad Crossings
Mitigation: The City of Manteca, San Joaquin County, and the California Public Utilities Commission shall monitor the operations and safety of the McKinley Avenue grade crossing with the Union Pacific Oakland Subdivision to determine whether safety improvements are warranted. Such safety improvements are anticipated to consist of the installation of raised roadway median on both approaches (to discourage wrong-way travel when the gates are down). The project applicant shall provide fees to the City of Manteca for the full cost of the installation of the raised median. The project applicant's financial contribution may be reduced to the extent other funding sources (e.g., Measure K, or Section 130) become available. At the time the safety improvements are determined to be warranted, the City of Manteca shall coordinate with agencies with jurisdiction over the McKinley Avenue grade crossing to install the improvements.

Implementation of this mitigation measure would reduce the above impact to a less-than-significant level.

Project impacts to Regional Congestion Management Program (RCMP) facilities were analyzed and found to be less than significant.

EXISTING PLUS PENDING PROJECT CONDITIONS

An analysis was conducted of the combined effects on the surrounding roadway system associated with simultaneous development of the Manteca Trails, Terra Ranch, and Machado Estates projects. This scenario is not required under CEQA, but nevertheless presented here for informational purposes because all three projects could develop simultaneously and create additive impacts. This analysis focused on PM peak hour intersection operations along the Airport Way corridor and considered trips from all three projects. The results yielded the following conclusions:

- 100 percent buildout of Manteca Trails, Terra Ranch, and Machado Estates projects would result in LOS F operations at the SR 120/Airport Way ramp intersections and Airport Way/Daniels Street intersection.
- Through an iterative process, it was determined that 50 percent of buildout of all three pending projects would result in operations that remain acceptable.

Fifty percent buildout of the three pending projects would correspond to 1,317 dwelling units. According to City staff, during years with above-average residential growth, Manteca issued an average of 500 residential building permits per year. Assuming the 500-unit per year absorption rate and a conservative assumption that 33 percent of all constructed units are located in southwest Manteca (i.e., within the three pending projects), then it would take approximately 8 years to construct 1,300 units in this area. If construction begins in 2011, then 1,300 units would have been constructed in this area by 2019-2020. The planned SR 120/McKinley Avenue interchange is expected to be open to traffic in 2020, which will provide considerable traffic relief to the SR 120/Airport Way interchange. Thus, the timing of this important new infrastructure improvement appears to be well coordinated with anticipated residential absorption.

CUMULATIVE CONDITIONS

The cumulative analysis considered numerous reasonable and foreseeable land uses in the project vicinity including the Terra Ranch, Machado Estates, Oakwood Shores, Northwest Airport Way Master Plan, Austin Road Business Park and Residential Community project, and a variety of other residential and retail uses south of SR 120. The cumulative roadway system (see Figure 7) included the following planned roadway improvements:

- SR 120/McKinley Avenue interchange – partial cloverleaf configuration

- McKinley Avenue Expressway – extends southerly from SR 120 as four lanes along the western boundary of Terra Ranch and then easterly to SR 99 as two to four lanes
- Airport Way Widening – widened to four lanes between Yosemite Avenue and Woodward Avenue (with exception of SR 120 overcrossing).

The City's PFIP includes the southwesterly extension of Atherton Drive as a four-lane roadway from the McKinley Avenue Expressway to Woodward Avenue near the eastern Trails project boundary. When this new roadway is constructed, Woodward Avenue between the McKinley Avenue Expressway and Atherton Drive extension would become either an emergency vehicle access or be demolished.

Under "cumulative no project" conditions, the existing two-lane segment of the Woodward Avenue is assumed to remain in place. This is a reasonable assumption because this scenario would not anticipate any development within the City west of the McKinley Avenue Expressway. As such, the City would not likely spend PFIP funds on an unneeded road improvement.

Under "cumulative plus project" conditions, the 0.5-mile southwesterly extension of Atherton Drive as a four-lane roadway from the McKinley Expressway to Woodward Avenue is assumed in place. This is a reasonable assumption because this scenario includes development of the Trails, which will require greater roadway capacity than is provided by Woodward Avenue. Furthermore, development impact fees from the Trails would be used to contribute to the Atherton Drive Extension. This scenario assumes that the approximate 0.5-mile segment of Woodward Avenue between the project site and McKinley Expressway is converted to an emergency access only.

The above improvements are either City PFIP projects and/or listed as Tier I improvements in the 2011 Draft Regional Transportation Plan (RTP) being prepared by SJCOG and have identified funding sources (e.g., Measure K, RTIF). Improvements were not assumed at the SR 120/Yosemite Avenue and SR 120/Airport Way interchanges because they are shown as Tier II (unfunded) improvements in the 2011 Draft RTP. SR 120 was assumed to remain a four-lane freeway because the timeframe for widening to six lanes is 2027 according to the 2011 Draft RTP, which is beyond the Manteca General Plan horizon year.

The SR 120/Airport Way ramp intersections would operate at LOS F during both peak hours without or with the proposed project. Vehicle queues from these intersections would cause operations at the Airport Way/Daniels Street and Airport Way/Atherton Drive intersections to also operate at LOS F during one or both peak hours. The SR 120/Yosemite Avenue interchange ramp intersections would also operate unacceptably. All 30 study segments/ramps on SR 120 would operate at an unacceptable level under cumulative conditions without or with the project.

Cumulative Impact TR-9: Traffic Impacts to Freeway Facilities

Mitigation: *The project applicant shall pay the appropriate San Joaquin County Regional Traffic Impact Fee (RTIF), which is collecting fees from new developments to help fund the widening of SR 120 to six lanes.* The widening of SR 120 to six lanes would improve operations to an acceptable level at 25 of the 30 study facilities. Implementation of this mitigation measure would reduce the significance of the impact. However, the impact would remain significant and unavoidable because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time.

Cumulative Impact TR-10: Traffic Impacts to Study Intersections

Mitigation: *The project applicant shall pay its fair share cost of improvements (refer to Mitigation Measure TR-10 for specific improvements) to the SR 120/Airport Way and SR 120/Yosemite Avenue interchanges. The project's fair share traffic contribution to these interchanges is estimated to be 7.1 and 2.8 percent, respectively.* Implementation of the above improvements would substantially improve interchange operations. However, the impact would remain significant and unavoidable because this improvement is within Caltrans' jurisdiction.

PROJECT ACCESS EVALUATION

Woodward Avenue west of McKinley Avenue would carry 15,500 ADT under existing plus project conditions. The current configuration of Woodward Avenue (two undivided lanes, minimal shoulders, no turn pockets) is not suitable for this level of traffic. Accordingly, Fehr & Peers recommends that the City consider the following:

- The City should periodically monitor traffic levels of Woodward Avenue west of Airport Way. When the volume reaches 6,000 ADT, the City should initiate environmental review and engineering for the extensions of Atherton Drive and McKinley Avenue. The new four-lane Atherton Drive extension would ideally be constructed and open to traffic by at a point when Woodward Avenue is carrying about 10,000 ADT. About 60 percent of project buildout could occur prior to the ADT reaching 10,000.

A review of the project site plan and proposed access resulted in the following recommendations:

- Relot Unit 6C so that residential lots do not front onto Trails Loop Road directly west of Tara Park Avenue, which is projected to carry approximately 4,000 ADT and may experience moderate queues as vehicles wait to turn onto Tara Park Avenue.

- A traffic signal is required under existing plus project conditions at the Woodward Avenue/Atherton Drive Extension/Tara Park Avenue intersection.

- Stop-control with full access is recommended on the Trails Loop Road and E Street approaches to Tara Park Avenue.

- To accommodate future development of Tara Park, the segment of Tara Park Avenue between Woodward Avenue and Trails Loop Road will likely require two travel lanes in each direction. Exclusive southbound left-turn lanes will likely also be necessary to provide ingress to Tara Park.

- Install traffic circles, speed tables, speed legends, chicanes, and/or other approved traffic calming devices along the easterly 0.6-mile segment of Trails Loop Road.

- The project applicant's engineer should work with City staff to confirm that the dimensions and configurations of the on-site traffic circles can accommodate trucks and school buses. In addition, the adequacy of sight distance on residential streets that intersect Trails Loop Road should be confirmed.

1. INTRODUCTION

This report analyzes the transportation impacts associated with development of the Trails of Manteca ("Proposed Project"), which would be located south of Woodward Avenue and west of Airport Way in the City of Manteca. Refer to **Figure 1** for project location.

The analysis contained in this report will form the basis of the transportation chapter for the Environmental Impact Report (EIR). Therefore, the assumptions and methodologies used in the study are intended to comply with applicable California Environmental Quality Act (CEQA) guidelines and requirements.

A number of different public agencies provided comment letters in response to the Notice of Preparation of an EIR. Below are some of the salient comments pertaining to the transportation impact analysis:

- The traffic study should include a discussion of identified mitigation measures and funding strategies. The study should also analyze freeway facilities (intersections, mainline, and ramps) using HCM 2000 procedures.
- The traffic study should evaluate impacts to SR 120 and County roadways.
- The traffic study should consider the cumulative effect of existing and planned developments on Woodward Avenue including emergency vehicle response times
- The traffic study should evaluate construction-related traffic delays.
- The traffic study should include an analysis of project impacts on CMP facilities and proposed mitigations for deficiencies.

The technical analysis contained in this report addresses the items listed above and others requested in the NOP comment letters. In some instances, the requested type, method, or extent of analysis is not provided because it is either not required according to CEQA guidelines, not necessary based on professional engineering judgment, or may be too speculative to analyze.

ANALYSIS SCENARIOS

The following scenarios were analyzed in this study:

- Existing Conditions
- Existing Plus Proposed Project Conditions
- Cumulative No Project Conditions
- Cumulative Plus Proposed Project Conditions

Figure 1: Project Location and Study Intersections

PROJECT DESCRIPTION

The project site is located south of Woodward Avenue and west of Airport Way within the Manteca City Limits. The proposed project consists of the following trip generating land uses according to the Notice of Preparation (dated July 15, 2010):

- 1,178 single-family dwelling units
- 192 townhomes/garden apartments; and
- 280 apartments

The project will include over 12 miles of bicycle/pedestrian trails and a clubhouse for use by its residents. Access to the project would be provided onto Woodward Avenue by three new public street connections.

2. EXISTING CONDITIONS

This chapter describes the existing condition of the roadway, transit, rail, bicycle, and pedestrian systems in the study area.

STUDY AREA

The study area shown on Figure 1 was selected based on the project's expected travel characteristics (i.e., location and amount of project trips) as well as facilities susceptible to being impacted by the project. The study area is generally bounded by Interstate 5 (I-5) on the west, Main Street on the east, Yosemite Avenue on the north, and the Manteca City Limits on the south.

Figure 1 shows the 14 intersections that were selected for analysis under weekday AM and PM peak hour conditions. In addition to these off-site intersections, this study analyzes freeway segments and ramps on State Route (SR) 120 between I-5 and Main Street.

ROADWAY SYSTEM

The following describes the freeway facilities and local roadways that would serve the project.

State Route (SR) 120 – is an east-west four-lane freeway within the study area that connects Interstate 5 and State Route 99 through south Manteca. It features interchanges at Yosemite Avenue/Guthmiller Road, Airport Way, Union Road, and Main Street.

Woodward Avenue – is an east-west street that begins near the Wetherbee Lake Subdivision and extends in a generally east-west direction parallel to SR 120, terminating at Moffat Boulevard near SR 99. It forms the northern boundary of the project site. West of Airport Way, Woodward Avenue is generally one lane in each direction, although a second westbound through lane has been constructed along the frontage of new developments on the north side of the street. The posted speed limit on Woodward Avenue varies from 35 to 45 mph between its western terminus and Airport Way.

Airport Way – is a north-south road that extends from downtown Stockton into Manteca, and continues south beyond SR 120 into unincorporated San Joaquin County. South of Woodward Avenue, Airport Way is a two-lane rural undivided road with a posted speed limit of 55 mph. Between Woodward Avenue and SR 120, Airport Way is a two-lane street with a posted speed limit of 40 mph. It widens to four lanes from SR 120 northerly to Daniels Street, narrowing to two lanes beyond this intersection.

McKinley Avenue – is a two-lane rural street that extends northerly from Woodward Avenue under SR 120 to Yosemite Avenue and beyond. Between Woodward Avenue and Yosemite Avenue, it has a posted speed limit of 45 mph and permits passing in certain sections.

Yosemite Avenue – is an east-west, two- to four-lane roadway that provides access to the central portion of the City of Manteca. It extends from the SR 120/Yosemite Avenue interchange in the west to its interchange with SR 99 in the east, where it becomes SR 120.

Table 1 displays the average daily traffic volume on study segments of Airport Way, Woodward Avenue, and McKinley Avenue based on counts collected in June 2010.

Table 1:
Average Daily Traffic Volumes – Existing Conditions

	Roadway	Number of Lanes	Average Daily Traffic (ADT)
1	Woodward Avenue – McKinley Avenue to Galleria Drive	2	1,100
2	Woodward Avenue – Galleria Drive to Airport Way	2	2,200
3	Woodward Avenue – Airport Way to Union Road	2	1,900
4	Airport Way – south of Woodward Avenue	2	2,400
5	Airport Way – Woodward Avenue to Atherton Drive	2	4,600
5	Airport Way – Atherton Drive to SR 120	2	8,500
6	Airport Way – SR 120 to Daniels Street	4	16,400
7	McKinley Avenue – Woodward Avenue to Yosemite Avenue	2	900

INTERSECTIONS

Figure 2 displays the existing AM and PM peak hour turning movement volumes at the 14 study intersections. New counts were collected at seven study intersections along Airport Way and Woodward Avenue in June 2010. Due to recently constructed retail development near the SR 120/Union Road interchange, new counts were collected during the PM peak hour in late August 2010. Traffic counts from 2008-2009 were used at the Yosemite Avenue/McKinley Avenue, Yosemite Avenue/Airport Way, and Daniels Street/Airport Way intersections. Six intersections are signalized and the remaining intersections are controlled by stop signs.

The operations of the roadway system are described using the level of service (LOS) concept. LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

The level of service method for signalized intersections analyzes operations based on average control vehicular delay, as described in Chapter 16 of the 2000 *Highway Capacity Manual* (HCM) by the Transportation Research Board. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated using the Synchro analysis software and is correlated to a LOS designation, as shown in **Table 2**. Operations at the SR 120/Airport Way interchange

Figure 2: Peak Hour Traffic Volumes and Lane Configurations – Existing Conditions

Table 2:
Intersection Level of Service Thresholds

Level of Service	Signalized Intersection Control Delay (sec/veh) [1]	Unsignalized Intersection Control Delay (sec/veh) [1]	General Description
A	0 – 10.0	0 – 10.0	Little to no congestion or delays. Free Flow
B	10.1 – 20.0	10.1 – 15.0	Limited congestion, short delays
C	20.1 – 35.0	15.1 – 25.0	Modest delays and stable flow.
D	35.1 – 55.0	25.1 – 35.0	High density, heavy delays, but stable flow.
E	55.1 – 80.0	35.1 – 50.0	Operations at or near capacity
F	> 80.0	> 50.0	Over-capacity, breakdown flow.

Note: [1] Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

and adjacent intersections were analyzed in SimTraffic to account for potential queues and congestion affecting adjacent intersections.

Operations of unsignalized study intersections are evaluated using the method contained in Chapter 17 of the 2000 HCM. At two-way or side-street stop-controlled intersections, control delay is reported for the movement with the worst control delay, not for the intersection as a whole. For approaches composed of a single lane, control delay is computed as the average of all movements in that lane. For all-way stop-controlled intersections, the LOS is based on the weighted average control delay of all movements. The LOS designations for unsignalized intersections are also presented in Table 2.

A peak-hour signal warrant analysis was conducted for all unsignalized study intersections. The analysis applied the peak-hour traffic signal warrant recommended in the *California Manual on Uniform Traffic Control Devices* (MUTCD) (Caltrans 2006). It should be noted that the peak-hour signal warrant is only one of several warrants that are evaluated to determine the need for a traffic signal. Even when peak-hour signal warrant is satisfied, the decision to install a signal should not be based solely upon this factor. The City of Manteca, City of Lathrop, San Joaquin County, and Caltrans should regularly monitor traffic conditions and accident data, and evaluate the full set of warrants in order to prioritize and program intersections for signalization.

The study intersections were analyzed in accordance with procedures described previously. **Table 3** displays the average delay and LOS at each intersection during the AM and PM peak hours (refer to separately bound Appendix A for technical calculations). This table also displays the form of traffic control (signal, stop signs) and jurisdiction associated with each intersection. According to this table, all study intersections currently operate at LOS D or

better during the AM and PM peak hours. None of the unsignalized study intersections currently satisfy the peak hour warrant for consideration of a traffic signal.

Table 3:
Peak Hour Intersection LOS – Existing Conditions

Intersection		Jurisdiction	Control	Peak Hour	Existing Conditions	
					Avg. Delay (sec/veh)	LOS
1	SR 120 WB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A
				PM	13	B
2	SR 120 EB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A
				PM	10	B
3	Yosemite Avenue / McKinley Avenue	City of Lathrop	All Way Stop	AM	8	A
				PM	9	A
4	Woodward Avenue / McKinley Avenue	City of Manteca	Side Street Stop	AM	9	A
				PM	9	A
5	Yosemite Avenue / Airport Way	City of Manteca	Traffic Signal	AM	32	C
				PM	35	C
6	Daniels Street / Airport Way	City of Manteca	Traffic Signal	AM	15	B
				PM	24	C
7	SR 120 WB Ramps / Airport Way	Caltrans	Traffic Signal	AM	10	B
				PM	16	B
8	SR 120 EB Ramps / Airport Way	Caltrans	Traffic Signal	AM	13	B
				PM	43	D
9	Atherton Drive / Airport Way	City of Manteca	Side Street Stop	AM	9	A
				PM	20	C
10	Woodward Avenue / Airport Way	City of Manteca	All Way Stop	AM	8	A
				PM	10	B
11	SR 120 WB Ramps / Union Road	Caltrans	Traffic Signal	AM	9	A
				PM	12	B
12	SR 120 EB Ramps / Union Road	Caltrans	Traffic Signal	AM	14	B
				PM	22	C
13	Woodward Avenue / Union Road	City of Manteca	All Way Stop	AM	11	B
				PM	10	A
14	Woodward Avenue / Main Street	City of Manteca	All Way Stop	AM	11	B
				PM	12	B

Note: Bolded cells represent unacceptable operations.

FREEWAYS

Freeway mainline segments and ramp junctions were evaluated using average existing (i.e., April – June 2010) mainline weekday AM and PM peak hour traffic volumes from Caltrans' Performance Measurement System (PeMS) database. **Table 4** displays the level of service thresholds for freeway mainline and ramp merge/diverge operations.

Table 4:
Freeway Facility Level of Service Thresholds

Level of Service	Mainline Density [1]	Ramp Merge/Diverge [1]	General Description
A	≤ 11	≤ 10	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	> 11 to 18	> 10 to 20	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.
C	> 18 to 26	> 20 to 28	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	> 26 to 35	> 28 to 35	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited.
E	> 35 to 45	> 35 to 43[2]	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver.
F	**	**	Represents a breakdown in flow.

Notes:
[1] Density in passenger cars per mile per lane (pcpmpl).
[2] The maximum density for ramp junctions under LOS E is not defined in the *HCM 2000*. This report uses the maximum density of 43 passenger cars per mile per lane identified for weaving sections in the *HCM 2000*.
** Demand flow exceeds capacity.
Source: *Highway Capacity Manual,* Transportation Research Board, 2000.

Table 5 displays the existing level of service at the ramp junctions and freeway mainline study segments of SR 120 between I-5 and Main Street (refer to Appendix A for technical calculations). As shown, all freeway study facilities currently operate at LOS D or better with the exception of eastbound SR 120 between I-5 and Yosemite Avenue and the SR 120 EB off-ramp diverge at Yosemite Avenue and at Airport Way, each of which operates at LOS E during the PM peak hour.

Table 5:
Peak Hour Freeway LOS – Existing Conditions

Facility		Type	Peak Hour	Existing	
				Density (pc/ph/pl)	LOS
1	SR 120 EB from I-5 to Yosemite Avenue	Mainline	AM	18	B
			PM	35	E
2	SR 120 EB from Yosemite Avenue to Airport Way	Mainline	AM	18	B
			PM	34	D
3	SR 120 EB from Airport Way to Union Road	Mainline	AM	18	B
			PM	31	D
4	SR 120 EB from Union Road to Main Street	Mainline	AM	19	C
			PM	28	D
5	SR 120 EB off-ramp at Yosemite Avenue	Ramp Diverge	AM	21	C
			PM	36	E
6	SR 120 EB off-ramp at Airport Way	Ramp Diverge	AM	21	C
			PM	36	E
7	SR 120 EB off-ramp at Union Road	Ramp Diverge	AM	21	C
			PM	34	D
8	SR 120 EB on-ramp from Yosemite Avenue	Ramp Merge	AM	20	B
			PM	34	D
9	SR 120 EB on-ramp from Airport Way	Ramp Merge	AM	20	B
			PM	32	D
10	SR 120 EB on-ramp from Union Road	Ramp Merge	AM	21	C
			PM	29	D
11	SR 120 WB from Main Street to Union Road	Mainline	AM	26	C
			PM	24	C
12	SR 120 WB from Union Road to Airport Way	Mainline	AM	27	D
			PM	23	C
13	SR 120 WB from Airport Way to Yosemite Avenue	Mainline	AM	29	D
			PM	22	C
14	SR 120 WB from Yosemite Avenue to I-5	Mainline	AM	29	D
			PM	23	C
15	SR 120 WB off-ramp at Union Road	Ramp Diverge	AM	29	D
			PM	27	C
16	SR 120 WB off-ramp at Airport Way	Ramp Diverge	AM	30	D
			PM	26	C
17	SR 120 WB off-ramp at Yosemite Avenue	Ramp Diverge	AM	32	D
			PM	25	C

Table 5:
Peak Hour Freeway LOS – Existing Conditions

Facility		Type	Peak Hour	Existing	
				Density (pc/ph/pl)	LOS
18	SR 120 WB on-ramp from Union Road	Ramp Merge	AM	28	D
			PM	25	C
19	SR 120 WB on-ramp from Airport Way	Ramp Merge	AM	30	D
			PM	24	C
20	SR 120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	30	D
			PM	24	C

The two-lane segment of McKinley Avenue between SR 120 and Yosemite Avenue was analyzed in accordance with San Joaquin County policies. Operations are currently at LOS A during the AM and PM peak hours (see Appendix A for technical calculations).

TRANSIT SYSTEM

Transit service in the City of Manteca is provided by Manteca Transit. The San Joaquin Regional Transit District (SJRTD) provides fixed-route and flexible-response bus service in San Joaquin County. The nearest transit stop to the project site is located north of SR 120 at Airport Way and Daniels Street (Stadium Center). Routes 1, 2, and 3 stop at this location on weekdays between 6:30 a.m. and 7:00 p.m.

The *Manteca Transit Short Range Transit Plan* (2009) does not envision expanding the City's transit service to the immediate project vicinity within the next five years. However, it does acknowledge the need for additional transit service for the existing and planned retail developments along the SR 120 corridor.

The Altamont Corridor Express (ACE) is a commuter rail train service that operates between Stockton and the Bay Area. The Lathrop-Manteca ACE station is located on Shideler Parkway, which is directly north of Yosemite Avenue and east of McKinley Avenue. This station is an approximate five minute drive from the project site. On weekdays, commuter rail service is provided by three westbound trains (departing the Lathrop-Manteca ACE Station at 4:37 a.m., 5:52 a.m., and 6:57 a.m.) and three eastbound trains (arriving at the Lathrop-Manteca ACE Station at 5:21 p.m., 6:21 p.m., and 7:21 p.m.).

BICYCLE/PEDESTRIAN SYSTEM

Pedestrian facilities in the project vicinity include sidewalks along the frontage of developed properties on Woodward Avenue and Airport Way. A class I (separated, off-street) bike path is located along Atherton Drive. A Class II (on-street with designated signing and striping) bike lane exists on portions of Airport Way from south of SR 120 to Woodward Avenue.

The *Final Manteca Bikeway Master Plan* (2003) shows a future bikeway system that would include Class II lanes along Airport Way and the Class I paths along the extension of Atherton Drive and Woodward Avenue along the project frontage.

RAIL CROSSINGS

The study area includes a Union Pacific Railroad (UPRR) track that extends southerly from Stockton and forms the western Manteca City limits. The track (i.e., Oakland Subdivison line) features at-grade crossings with Yosemite Avenue and McKinley Avenue. This study focuses on the McKinley Avenue crossing because it is closer to the project site than the Yosemite Avenue crossing and would be used by a greater percentage of project trips. This segment of McKinley Avenue is currently maintained by San Joaquin County.

The McKinley Avenue at-grade crossing has advanced warning signs, railroad crossing pavement markings, stop lines, crossing gates, flashing lights, and warning bells. According to US Department of Transportation Crossing Inventory, an average of 13 trains per day crosses this segment of McKinley Avenue, which is in unincorporated San Joaquin County. Data regarding the number of accidents at this crossing was not available from the USDOT website.

3. REGULATORY CONTEXT

This section describes the regulatory setting, including policies of the City of Manteca and other responsible agencies that may be relevant to this study.

FEDERAL AND STATE REGULATIONS

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways in San Joaquin County. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the state highway system within the City of Manteca need to be approved by Caltrans. The City of Manteca does not have the ability to unilaterally make improvements to the state highway system.

The *State Route 120 Transportation Concept Report – TCR* (Caltrans, 2005) identifies a concept LOS of "D" for the segment from I-5 to SR 99. The TCR identifies the need for widening of this facility to six lanes with an ultimate facility being eight lanes to meet projected travel demands. The TCR identifies interchange upgrades at Yosemite Avenue, McKinley Avenue, Airport Way, Union Road, and Main Street.

LOCAL REGULATIONS

San Joaquin County Regional Transportation Plan

San Joaquin County, through the San Joaquin Council of Governments (SJCOG), periodically updates the Regional Transportation Plan (RTP), which outlines countywide transportation expenditures based on funding from sources like the federal government, the State of California, and locally collected funds. The RTP contains several proposed improvements that would benefit the regional roadway network within the study area. These improvements are described at the end of this chapter. Draft and Final EIRs for the 2011 RTP have been published.

San Joaquin County General Plan

The San Joaquin County General Plan is in the process of being updated. Until it is adopted, policies from the 1992 General Plan remain relevant. According to the *San Joaquin County Traffic Impact Study Guidelines* (November 2008), all County roadways shall operate at LOS C or better (except in a City sphere of influence where the City has adopted LOS D). The segment of McKinley Avenue between SR 120 and Yosemite Avenue is in the unincorporated County and Lathrop Sphere of Influence. As noted below, a LOS C standard has been used in Lathrop for purposes of identifying impacts. Therefore, this study will evaluate the segment of McKinley Avenue within San Joaquin County based on a LOS C threshold. Per the County's TIS guidelines, this segment will be analyzed per the HCM as a Class II highway.

San Joaquin County Congestion Management Program

SJCOG operates a Regional Congestion Management Program (RCMP), which monitors cumulative transportation impacts of growth on the regional roadway system, identifies deficient roadways, and develops plans to mitigate the deficiencies. The RCMP considers LOS E or F operations to be deficient and includes segments of SR 120 and Airport Way (north of SR 120) as CMP facilities.

San Joaquin County Regional Traffic Impact Fee (RTIF)

SJCOG has implemented a regional traffic impact fee that is assessed on new developments throughout San Joaquin County. The RTIF capital project list provides funding for various freeway and local road widenings. As of 2009, the fee schedule for new residential development is approximately $3,000 for single-family units and $1,800 for multi-family units. These fees are adjusted annually to account for inflation and the funds go toward adding capacity on regional roadways and state highways.

Measure K

Measure K is a San Joaquin County measure that funds transportation projects through a half-cent sales tax. Measure K provides funding for a number of improvements in the study area as described below.

City of Lathrop General Plan

The City of Lathrop General Plan identifies expected LOS C operations on City streets and LOS D operations at interchange ramps. The *Lathrop Gateway Business Park Specific Plan Draft EIR* (2010) applied a LOS C standard for City intersections for the purposes of identifying impacts.

City of Manteca General Plan

The City of Manteca General Plan (2003) includes the following policies related to transportation and circulation that are relevant to this analysis:

Street System

a. Policy C-P-1

The City shall strive to attain the highest possible traffic levels of service (LOS) consistent with the financial resources available and the limits of technical feasibility. The impact of new development and land use proposals on LOS should be considered in the review process.

b. Policy C-P-2

Manteca's target for transportation LOS is to provide a Citywide average of LOS of C or better, and a minimum of LOS D at any individual location. This “C average, D minimum” shall be

accomplished by attempting to provide LOS C at all locations, but accepting LOS D under the following circumstances:

- Where constructing facilities with enough capacity to provide LOS C is found to be unreasonably expensive. This applies to facilities, for example, on which it would cost significantly more per dwelling unit equivalent (DUE) to provide LOS C than to provide LOS D.
- Where it is difficult or impossible to maintain LOS C because surrounding facilities in other jurisdictions operate at LOS D or worse.
- Where free-flowing roadways or interchange ramps would discourage use of alternate travel modes.
- Where maintaining LOS C will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel.

Note that for the purposes of this environmental analysis, the City considers LOS D as the acceptable LOS threshold for all intersections in the City of Manteca. This LOS standard was chosen primarily because of the constrained operations on the state highway system and the LOS policies of the surrounding jurisdictions.

a. Policy C-P-3

Streets shall be dedicated, widened, extended, and constructed according to the Street cross-section diagrams established in the City Improvement Standards. Dedication and improvement of full rights-of-way as shown in the Street Standards shall not be required in existing developed areas where the City determines that such improvements are either infeasible or undesirable.

b. Policy C-P-5

Development that would necessitate roadway improvements prior to the development of lands abutting those roadway improvements shall be required to make such improvements, or participate in such improvements, as a condition of approval.

c. Policy C-P-6

New development will pay a fair share of the costs of street and other traffic and transportation improvements based on traffic generation and impacts on levels of service in conformance with the standards and policies established in the Public Facilities Implementation Plan (PFIP).

d. Policy C-P-18

In accord with the PFIP, the City shall assess development fees for traffic signals and highway interchanges sufficient to fund system-wide improvements. The development fee schedule for these traffic improvements shall be periodically reviewed, and revised as necessary.

The City also requires new development to participate in the funding and construction of collector and arterial street improvements identified in the City's Street Master Plan.

Bikeways and Pedestrian Paths

c. Policy C-P-33

The City shall establish a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the City.

d. Policy C-P-35

Route sidewalks so that they connect to major public parking areas, transit stops, and intersections within the bikeway system.

e. Policy C-P-36

Provide adequate bicycle parking facilities at commercial, business/professional, and light industrial uses.

f. Policy CD-P-31

The pedestrian and bikeway system shall be linked to other pedestrian and bikeways in adjacent neighborhoods and ultimately, to the City-wide Pedestrian and Bikeway trail System to provide a continuous interconnected system.

City of Manteca Bicycle Master Plan

The *Final City of Manteca Bicycle Master Plan* (2003) includes the following policies related to bicycle circulation in new development areas that are relevant to this analysis:

- Require new development to construct bikeways included in the proposed system along all roadways included within or adjacent to that development.
- Require new development to provide support facilities such as bicycle racks, personal lockers, and showers at appropriate locations such as parks, major recreational destinations, park-and-ride facilities, employment centers, schools, and commercial centers.
- Provide bike crossings at appropriate intervals along new roadways that will adequately serve new large-scale commercial, office, industrial, and residential development.
- Require new development to incorporate parks and schools as important destinations for bicyclists when designing circulation plans for subdivisions and other developments.

City of Manteca Public Facilities Implementation Plan

The City of Manteca's Public Facilities Implementation Plan (PFIP) (1993) is the implementing document for the City's General Plan policies on public infrastructure facilities. The purpose of the PFIP is to ensure adequate provision of public facilities as the city grows, and that they are developed in accordance with the City's General Plan. The PFIP is based on the City's individual water, sewer, drainage, and transportation facilities master plans. Under the PFIP, development impact fees are collected at or near the time of development and are used to finance the capacity expansion of public facilities (i.e., water, sewer collection, drainage, and transportation) necessary to accommodate the new demands.

Since the 1993 PFIP was not indexed to inflation, the current fees do not cover the costs of building the required transportation infrastructure. The City is currently updating the PFIP to develop a new list of infrastructure projects and a revised fee. It is expected that the PFIP fee will fully cover the cost of improvements to the City's street system. The revised fee is expected to be adopted by the City Council by the end of 2010.

Table 6 displays the status and identified funding sources for various regional roadway improvements within the study area. Tier I projects in the RTP are those that the region intends to fund, implement, and maintain during the plan period with identified revenue sources. They represent the region's fiscally constrained program for developing the transportation system. Tier II projects represent those that need to be built, implemented, and maintained during the plan period but have to be deferred until new funding resources materialize.

The 2007 and 2011 RTPs had a similar set of improvements and prioritization with a couple of exceptions. The 2007 RTP included improvements at the SR 120/Airport Way interchange as a Tier I project; the 2011 RTP lists this is a Tier II project. The 2011 RTP now includes the McKinley Avenue Expressway as a Tier I project, whereas it was not listed in the 2007 RTP.

As is described in Chapter 4, this study will assume in place under cumulative conditions those projects that are listed as Tier I improvements in the 2011 RTP and are to be constructed by 2023, which is the horizon year of the City's General Plan. Several other surface street improvements, which are not listed above are also assumed to be constructed as described in Chapter 4.

Table 6:
Status of Planned Improvements in Study Area

Project	Included in Tier I List in 2011 RTP?	Included in Measure K?	Included in RTIF?
SR 120 Widening – 4 to 6 lanes from I-5 to SR 99 ($90.6M, OTD = 2027)	yes	yes	yes
Upgrade SR 120/Yosemite interchange ($22M, no OTD)	no	no	no
New SR 120/McKinley interchange ($30M, OTD = 2020)	yes	yes	yes
Upgrade SR 120/Airport interchange ($18M, no OTD)	no	yes	no
Upgrade SR 120/Union interchange ($33M, OTD = 2015)	yes	yes	no
Airport Way Widening – 2 to 4 lanes from SR 120 to Lathrop Road ($7M, OTD = 2012)	yes	no	yes
McKinley Avenue Widening – 2 to 4 lanes from SR 120 to Lathrop Road (not listed as Tier II, no OTD)	no	no	no
McKinley Ave. Expressway ($18M, OTD = 2019)	yes	no	no

Notes: 120/Yosemite and SR 120/Airport interchanges listed as Tier II projects in 2011 RTP.
OTD = Open to Traffic Date and costs based on 2011 RTP.

4. METHODS OF ANALYSIS

This chapter presents the methods used to analyze the impacts of the project on the roadway, bicycle, pedestrian, transit, and rail systems. The standards of significance to be used in identifying project-specific and cumulative impacts are first presented. These standards are based on policies of the City of Manteca and other responsible agencies.

SIGNIFICANCE CRITERIA

Roadway System

The project would cause a significant impact to the roadway system if it would:

Signalized Intersections

- Worsen operations at a signalized intersection in Manteca or on a Caltrans facility from LOS D or better to LOS E or worse.
- Increase the average delay at a signalized intersection in Manteca currently operating (or projected to operate) at LOS E or worse by three (3) seconds or more.
- Add traffic to a signalized intersection on a Caltrans facility that is currently operating (or projected to operate) at LOS E or worse.
- Worsen operations at a signalized intersection in Lathrop from LOS C or better to LOS D or worse.
- Increase the average delay at a signalized intersection in Lathrop currently operating (or projected to operate) at LOS D or worse by five (5) seconds or more.

All-Way Stop Intersections

- Worsen operations from LOS D or better to LOS E or F.
- Increase the average delay at an intersection currently operating (or projected to operate) unacceptably by at least three (3) seconds if in Manteca or by at least five (5) seconds if in Lathrop and cause one of the peak hour signal warrants to be met.

Side-Street Stop Intersections

- Worsen operations from LOS D or better to LOS E or F.
- Increase the average delay for the highest delayed side-street movement at an intersection in Manteca currently operating (or projected to operate) unacceptably by three (3) seconds or more and cause one of the peak hour signal warrants to be met.

Freeways

- Worsen operations from LOS D or better to LOS E or F.
- Add 100 vehicles per day or more to a freeway segment that is currently operating (or projected to operate) unacceptably.
- Increase traffic by one percent or more at a freeway ramp that is currently operating (or projected to operate) unacceptably.

Roadways

- Worsen a San Joaquin County roadway from LOS C or better to LOS D or worse.
- Increase traffic on a San Joaquin County roadway that is currently operating (or projected to operate) unacceptably.
- substantially increase hazards on a roadway due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Emergency Access

- result in inadequate emergency access.

The above thresholds were developed based on the relevant policies of each agency, recently published environmental documents, Appendix G of the CEQA Guidelines, and information in the City's *Transportation Impact Analysis Guidelines*. Although still in draft form, these guidelines have been used for several other EIRs in the area. They are also being considered for formal adoption along with updates to the City of Manteca General Plan Circulation Element.

Transit System

The *Draft Transportation Impact Analysis Guidelines* do not currently have thresholds for impacts on the transit systems. For the purposes of this study, an impact is considered significant if the project would:

- Disrupt or interfere with existing or planned public transit services or facilities.
- Create an inconsistency with policies concerning transit systems set forth in a General Plan or other adopted policy document.

Bicycle/Pedestrian System

The *Draft Transportation Impact Analysis Guidelines* do not currently have thresholds for impacts on the pedestrian and bicycle systems. For the purposes of this study, an impact is considered significant if the project would:

- Disrupt or interfere with existing or planned bicycle/pedestrian facilities.
- Result in unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian/vehicle conflicts.
- Result in unsafe conditions for bicycles, including unsafe bicycle/pedestrian or bicycle/vehicle conflicts.
- Create an inconsistency with policies related to bicycle or pedestrian systems set forth in a General Plan or other adopted policy document.

At-Grade Railroad Crossings

The project would cause a significant impact at an at-grade railroad crossing if it would:

- Cause motorists to incur delays corresponding to LOS E or F conditions due to preemptions caused by train crossings.
- Add traffic to an at-grade railroad crossing that has a demonstrated record of having an above-average rate of accidents.

PROJECT TRAVEL CHARACTERISTICS

This section describes the anticipated number of vehicle trips and directionality of those trips that would result from the proposed project. **Table 7** displays the project's expected daily, AM peak hour, and PM peak hour trip generation. The trip generation estimates in Table 7 are considered somewhat conservative because no internal trip capture was assumed for the clubhouse. In all likelihood, clubhouse amenities such as a pool, weight room, and meeting space will be used by some residents.

Table 7:
Project Trip Generation

Land Use	Quantity	Trip Rate [1]			Trips		
		Daily	AM Peak Hour	AM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Single-Family Residential	1,178	9.57	0.75	1.01	11,274	884	1,190
Apartments	472	6.65	0.51	0.62	3,139	241	293
				TOTAL:	14,413	1,125	1,483

Notes:
[1] Based on average trip rates from *Trip Generation* (Institute of Transportation Engineers, 2008).
[2] The trip generation of the 192 townhomes/garden apartments was calculated using the slightly higher Apartments trip rates (versus Condominium/Townhome trip rates) to provide a conservative analysis.

As shown, the project would generate approximately 14,400 daily trips with 1,130 trips occurring during the AM peak hour and 1,480 trips occurring during the PM peak hour.

Figure 3 displays the expected distribution of trips under "existing plus project" conditions. These percentages were derived from a variety of sources including:

- A project-only traffic assignment from the base year version of the SJCOG travel demand model.
- Locations of complementary land uses including schools (based on current school district boundaries from the school district website), shopping, parks, and other amenities.
- Relative travel time on competing routes such as travel to/from the west on SR 120 via the Airport Way interchange versus McKinley Avenue to the Yosemite Avenue interchange including differences in travel time for inbound versus outbound trips.

Figure 4 shows the expected distribution of project trips under cumulative conditions. The cumulative distribution is similar to that of existing, but considers planned roadway improvements discussed later in this chapter and new land use developments that may attract project trips. This figure shows that project trips would use the Atherton Drive extension to access McKinley Avenue. As is discussed later, the existing segment of Woodward Avenue between the project and McKinley Avenue would become an emergency access.

EXISTING PLUS PROJECT CONDITIONS

Project trips were assigned to the study facilities in accordance with the trip generation and distribution assumptions described previously. **Figure 5** displays project-only trips during the AM and PM peak hours at the study intersections. Project-only trips were then added to the existing volumes to yield "existing plus project" conditions. **Figure 6** displays these forecasts at the study intersections.

Table 8 displays the ADT on roadways surrounding the project site under existing plus project conditions. As shown, significant increases in traffic are expected on segments of Woodward Avenue, Airport Way, and McKinley Avenue.

The study intersections were reanalyzed under existing plus project conditions. **Table 9** summarizes the results (refer to Appendix B for technical calculations). According to this table, all study intersections would continue operating at an acceptable level with the exception of the following:

4) Woodward Avenue/McKinley Avenue (LOS F during PM peak hour)
9) Atherton Drive/Airport Way (LOS F during PM peak hour)
10) Woodward Avenue/Airport Way (LOS F during AM and PM peak hours)

The above intersections would also satisfy the peak hour warrant for consideration of a traffic signal (see Appendix B).

Figure 3: Project Trip Distribution – Existing Plus Project Conditions

Figure 4: Project Trip Distribution – Cumulative Conditions

Figure 5: Peak Hour Traffic Volumes and Lane Configurations – Project Only Trips

Figure 6: Peak Hour Traffic Volumes and Lane Configurations – Existing Plus Project Conditions

Table 8:
Average Daily Traffic Volumes – Existing Plus Project Conditions

	Roadway	Number of Lanes	Average Daily Traffic (ADT)		
			Existing Conditions	Project Trips	Existing Plus Project Conditions
1	Woodward Avenue – west of McKinley Avenue	2	1,100	14,400	15,500
2	Woodward Avenue – McKinley Avenue to Galleria Dr.	2	1,100	10,400	11,500
3	Woodward Avenue – Galleria Drive to Airport Way	2	2,200	10,400	12,600
4	Woodward Avenue – Airport Way to Union Road	2	1,900	3,500	5,400
5	Airport Way – south of Woodward Avenue	2	2,400	400	2,800
5	Airport Way – Woodward Avenue to Atherton Drive	2	4,600	6,500	11,100
6	Airport Way – Atherton Drive to SR 120	2	8,500	6,500	15,000
7	Airport Way – SR 120 to Daniels Street	4	16,400	1,900	18,300
8	McKinley Avenue – Woodward Avenue to Yosemite Avenue	2	900	4,000	4,900

Table 10 displays the operations of study freeway facilities under existing plus project conditions (refer to Appendix B for technical calculations). As shown, the project would exacerbate PM peak hour LOS E conditions on eastbound SR 120 between I-5 and Yosemite Avenue and at the SR 120 EB off-ramp diverge at Yosemite Avenue and at Airport Way. The project would also degrade the SR 120 EB on-ramp merge from Yosemite Avenue from LOS D to E during the PM peak hour.

Based on the SimTraffic results, the addition of project trips to existing volumes would not cause vehicles on the eastbound off-ramp at Airport Way to spill onto the SR 120 mainline. The off-ramp has approximately 1,700 feet of storage (measured from the limit line to the gore point). The 95th percentile queue was approximately 425 feet. The SimTraffic results also demonstrated that vehicle queuing is not expected to be a problem on the westbound off-ramp.

Table 9:
Peak Hour Intersection LOS – Existing Plus Project Conditions

Intersection		Jurisdiction	Control	Peak Hour	Existing Conditions		Existing Plus Project	
					Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS
1	SR 120 WB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A	10	B
				PM	13	B	17	C
2	SR 120 EB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A	10	A
				PM	10	B	12	B
3	Yosemite Avenue / McKinley Avenue	City of Lathrop	All Way Stop	AM	8	A	12	B
				PM	9	A	17	C
4	Woodward Avenue / McKinley Avenue	City of Manteca	Side Street Stop	AM	9	A	14	B
				PM	9	A	**>150**	**F**
5	Yosemite Avenue / Airport Way	City of Manteca	Traffic Signal	AM	32	C	32	C
				PM	35	C	35	C
6	Daniels Street / Airport Way	City of Manteca	Traffic Signal	AM	15	B	17	B
				PM	24	C	32	C
7	SR 120 WB Ramps / Airport Way	Caltrans	Traffic Signal	AM	10	B	14	B
				PM	16	B	26	C
8	SR 120 EB Ramps / Airport Way	Caltrans	Traffic Signal	AM	13	B	11	B
				PM	43	D	46	D
9	Atherton Drive / Airport Way	City of Manteca	Side Street Stop	AM	9	A	26	D
				PM	20	C	**>150**	**F**
10	Woodward Avenue / Airport Way	City of Manteca	All Way Stop	AM	8	A	**59**	**F**
				PM	10	B	**>150**	**F**
11	SR 120 WB Ramps / Union Road	Caltrans	Traffic Signal	AM	9	A	9	A
				PM	12	B	13	B
12	SR 120 EB Ramps / Union Road	Caltrans	Traffic Signal	AM	14	B	14	B
				PM	22	C	24	C
13	Woodward Avenue / Union Road	City of Manteca	All Way Stop	AM	11	B	14	B
				PM	10	A	12	B
14	Woodward Avenue / Main Street	City of Manteca	All Way Stop	AM	11	B	12	B
				PM	12	B	13	B

Notes: Bolded cells represent unacceptable operations.

Table 10:
Peak Hour Freeway LOS – Existing Plus Project Conditions

Facility		Type	Peak Hour	Existing		Existing Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
1	SR 120 EB from I-5 to Yosemite Avenue	Mainline	AM	18	B	19	C
			PM	35	E	40	E
2	SR 120 EB from Yosemite Avenue to Airport Way	Mainline	AM	18	B	18	C
			PM	34	D	36	E
3	SR 120 EB from Airport Way to Union Road	Mainline	AM	18	B	19	C
			PM	31	D	32	D
4	SR 120 EB from Union Road to Main Street	Mainline	AM	19	C	21	C
			PM	28	D	30	D
5	SR 120 EB off-ramp at Yosemite Avenue	Ramp Diverge	AM	21	C	22	C
			PM	36	E	40	E
6	SR 120 EB off-ramp at Airport Way	Ramp Diverge	AM	21	C	21	C
			PM	36	E	38	E
7	SR 120 EB off-ramp at Union Road	Ramp Diverge	AM	21	C	22	C
			PM	34	D	35	D
8	SR 120 EB on-ramp from Yosemite Avenue	Ramp Merge	AM	20	B	20	C
			PM	34	D	36	E
9	SR 120 EB on-ramp from Airport Way	Ramp Merge	AM	20	B	21	C
			PM	32	D	33	D
10	SR 120 EB on-ramp from Union Road	Ramp Merge	AM	21	C	23	C
			PM	29	D	31	D
11	SR 120 WB from Main Street to Union Road	Mainline	AM	26	C	26	D
			PM	24	C	27	D
12	SR 120 WB from Union Road to Airport Way	Mainline	AM	27	D	27	D
			PM	23	C	25	C
13	SR 120 WB from Airport Way to Yosemite Avenue	Mainline	AM	29	D	30	D
			PM	22	C	23	C
14	SR 120 WB from Yosemite Avenue to I-5	Mainline	AM	29	D	32	D
			PM	23	C	25	C
15	SR 120 WB off-ramp at Union Road	Ramp Diverge	AM	29	D	29	D
			PM	27	C	29	D
16	SR 120 WB off-ramp at Airport Way	Ramp Diverge	AM	30	D	30	D
			PM	26	C	27	C
17	SR 120 WB off-ramp at	Ramp Diverge	AM	32	D	33	D

Table 10:
Peak Hour Freeway LOS – Existing Plus Project Conditions

Facility		Type	Peak Hour	Existing		Existing Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
	Yosemite Avenue		PM	25	C	25	C
18	SR 120 WB on-ramp from Union Road	Ramp Merge	AM	28	D	28	D
			PM	25	C	26	C
19	SR 120 WB on-ramp from Airport Way	Ramp Merge	AM	30	D	31	D
			PM	24	C	24	C
20	SR 120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	30	D	33	D
			PM	24	C	26	C

Notes: Bolded cells represent unacceptable operations.

The two-lane segment of McKinley Avenue between SR 120 and Yosemite Avenue was analyzed in accordance with San Joaquin County policies. This segment would operate at LOS B during the AM peak hour and LOS C during the PM peak hour with the addition of project traffic (see Appendix B for technical calculations).

CUMULATIVE CONDITIONS

Cumulative no project traffic forecasts were developed using the SJCOG travel demand model. The model was modified to reflect the following reasonable and foreseeable land uses in the project vicinity:

- Lathrop Gateway Business Park – situated north of SR 120 between Yosemite Avenue and McKinley Avenue, which could yield a maximum of 5.43 million square feet of non-residential according to that project's EIR.
- Machado Estates – 575 dwelling units located south of Woodward Avenue and west of Airport Way.
- Terra Ranch – 409 dwelling units located directly west of Machado Estates.
- Oakwood Shores – a partially developed residential project (475 dwelling units at buildout) located on Oakwood Lake that has two accesses onto Woodward Avenue west of McKinley Avenue.

In addition to the above, a number of other land uses were assumed including new retail centers along Atherton Drive near Airport Way, the Northwest Airport Way Master Plan, and the Austin Road Business Park and Residential Community. It should be noted that the Tara Park project (located between the Trails and Terra Ranch projects to the north and south of

Woodward Avenue) was not assumed in place since an application for this property is not being processed.

Planned roadway improvements in the study area include the following (see **Figure 7):**

- SR 120/McKinley Avenue Interchange – partial cloverleaf design with lane configurations similar to those in the 2007 Project Study Report.
- McKinley Avenue Expressway – extends southerly from SR 120 as four lanes along the western boundary of Terra Ranch and then easterly to SR 99 as two to four lanes.
- Airport Way Widening – widened to four lanes between Yosemite Avenue and Woodward Avenue (with exception of SR 120 overcrossing).
- Yosemite Avenue Widening – widened to six lanes along the frontage of the Lathrop Gateway Business Park, based on its EIR which included this widening as mitigation for its impacts.

The City's PFIP includes the southwesterly extension of Atherton Drive as a four-lane roadway from the McKinley Avenue Expressway to Woodward Avenue near the eastern Trails project boundary. When this new roadway is constructed, Woodward Avenue between the McKinley Avenue Expressway and Atherton Drive extension would become either an emergency vehicle access or be demolished.

Under "cumulative no project" conditions, the existing two-lane segment of the Woodward Avenue between the Trails and McKinley Avenue Expressway is assumed to remain in place. This is a reasonable assumption because this scenario would not anticipate any development within the City west of the McKinley Avenue Expressway. As such, the City would not likely spend PFIP funds on an unneeded road improvement.

Under "cumulative plus project" conditions, the 0.5-mile southwesterly extension of Atherton Drive as a four-lane roadway from the McKinley Expressway to Woodward Avenue is assumed in place. This is a reasonable assumption because this scenario includes development of the Trails, which will require greater roadway capacity than is provided by Woodward Avenue. Furthermore, development impact fees from the Trails could be used to help fund this improvement. This scenario assumes that the approximate 0.5-mile segment of Woodward Avenue between the project site and McKinley Avenue Expressway is converted to an emergency access only.

The City's planned circulation system also includes the continued extension of Atherton Drive southerly and then easterly to reconnect with McKinley Avenue Expressway. This southerly connection was not assumed in place because such a roadway connection through the Trails project is not proposed and it would pass through the Tara Park property, which is not assumed to be developed under this scenario.

Figure 7: Cumulative Roadway System

A number of other improvements are also assumed including the extensions of Atherton Drive and Daniels Street, and widening of Union Road. Improvements were not assumed at the SR 120/Yosemite Avenue and SR 120/Airport Way interchanges because they are shown as Tier II (unfunded) improvements in the 2011 Draft RTP. SR 120 was assumed to remain a four-lane freeway because the timeframe for widening to six lanes is 2027 according to the 2011 Draft RTP, which is beyond the Manteca General Plan horizon year.

Figure 8 displays the cumulative no project peak hour traffic forecasts at the study intersections. **Table 11** displays the cumulative no project average daily traffic volumes in the project vicinity. These forecasts assume no development on the project site.

The new SR 120/McKinley Avenue interchange ramp intersections and the Atherton Drive/McKinley Avenue Expressway intersection were added as study facilities. Traffic signals were assumed at the Airport Way/Atherton Road and Airport Way/Woodward Avenue[1] intersections as they are planned City improvements and pending land developments in the area will trigger their installation.

Project trips were added to the cumulative no project forecasts to yield the cumulative plus project peak hour intersection forecasts shown on **Figure 9** and the daily forecasts shown in Table 11.

Intersection Operations

The study intersections were analyzed under cumulative conditions, without and with the project. **Table 12** summarizes the results (refer to Appendix C for technical calculations). The SR 120/Airport Way ramp intersections would operate at LOS F during both peak hours without or with the proposed project. Vehicle queues from these intersections would cause operations at the Airport Way/Daniels Street and Airport Way/Atherton Drive intersections to also operate at LOS F during one or both peak hours. In addition, LOS E or F operations would result at the SR 120/Yosemite Avenue ramp intersections.

Freeway Operations

The study freeway facilities (including merge/diverge movements at new SR 120/McKinley Avenue interchange) were analyzed under cumulative conditions, without and with the proposed project. **Table 13** summarizes the results (refer to Appendix C for technical calculations). According to this table, all 30 study segments/ramps on SR 120 would operate at an unacceptable LOS E or F under cumulative conditions without or with the proposed project. This is to be expected since the widening of SR 120 is known to be a needed

1. The City is considering the installation of roundabouts at major intersections along Woodward Avenue. Accordingly, cumulative operations at the Airport Way/Woodward Avenue intersection are analyzed assuming both a traffic signal and a roundabout.

improvement, but was not assumed under cumulative conditions because its construction date is beyond the Manteca General Plan horizon year.

Figure 8: Peak Hour Traffic Volumes and Lane Configurations – Cumulative No Project Conditions

Figure 9: Peak Hour Traffic Volumes and Lane Configurations – Cumulative Plus Project Conditions

Table 11:
Average Daily Traffic Volumes – Cumulative Conditions

	Roadway	Number of Lanes	Average Daily Traffic (ADT)		
			Cumulative No Project Conditions	Project Trips	Cumulative Plus Project Conditions
1a	Woodward Avenue – west of McKinley Avenue Expressway	2 [1]	5,500	--	--
1b	Atherton Drive – west of McKinley Avenue Expressway	4 [1]	--	14,400	19,900
2	Atherton Drive – east of McKinley Avenue Expressway	4	1,500	300	1,800
3	McKinley Avenue Expressway – SR 120 to Atherton Drive	4	20,700	12,300	33,000
4	McKinley Avenue Expressway – Atherton Drive to Woodward Avenue	4	16,800	1,900	18,700
5	McKinley Avenue Expressway – south of Woodward Avenue	4	12,000	1,000	13,000
6	Woodward Avenue – east of McKinley Avenue Expressway	2	5,700	900	6,600

Note: [1] Remains as existing two-lane segment of Woodward Avenue under "No Project" conditions; Is reconstructed as four-lane segment called Atherton Drive under "Plus Project" conditions.

Table 12:
Peak Hour Intersection LOS – Cumulative Conditions

	Intersection	Jurisdiction	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project	
					Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS
1	SR 120 WB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	21	C	22	C
				PM	33	D	**38**	**E**
2	SR 120 EB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	**46**	**E**	**52**	**F**
				PM	11	B	12	B
3	Yosemite Avenue / McKinley Avenue	City of Lathrop	Traffic Signal	AM	**36**	**D**	**38**	**D**
				PM	28	C	29	C
4	Woodward Avenue / McKinley Avenue Expressway	City of Manteca	Traffic Signal	AM	26	C	11	B
				PM	22	C	11	B
5	Yosemite Avenue / Airport Way	City of Manteca	Traffic Signal	AM	25	C	25	C
				PM	33	C	34	C
6	Daniels Street / Airport Way	City of Manteca	Traffic Signal	AM	40	D	32	C
				PM	**>150**	**F**	**>150**	**F**
7	SR 120 WB Ramps / Airport Way	Caltrans	Traffic Signal	AM	**128**	**F**	**109**	**F**
				PM	**>150**	**F**	**>150**	**F**
8	SR 120 EB Ramps / Airport Way	Caltrans	Traffic Signal	AM	**78**	**E**	**104**	**F**
				PM	**>150**	**F**	**>150**	**F**
9	Atherton Drive / Airport Way	City of Manteca	Traffic Signal	AM	**>150**	**F**	**>150**	**F**
				PM	40	D	48	D
10	Woodward Avenue / Airport Way	City of Manteca	Traffic Signal[1]	AM	23	C	22	C
				PM	25	C	25	C
11	SR 120 WB Ramps / Union Road	Caltrans	Traffic Signal	AM	7	A	7	A
				PM	8	A	8	A
12	SR 120 EB Ramps / Union Road	Caltrans	Traffic Signal	AM	6	A	6	A
				PM	12	B	12	B
13	Woodward Avenue / Union Road	City of Manteca	Traffic Signal[2]	AM	22	C	22	C
				PM	21	C	21	C
14	Woodward Avenue / Main Street	City of Manteca	Traffic Signal[1]	AM	21	C	21	C
				PM	20	C	20	C

Table 12:
Peak Hour Intersection LOS – Cumulative Conditions

Intersection		Jurisdiction	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project	
					Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS
15	SR 120 WB Ramps / McKinley Avenue	Caltrans	Traffic Signal	AM	10	A	12	B
				PM	16	B	15	B
16	SR 120 EB Ramps / McKinley Avenue	Caltrans	Traffic Signal	AM	9	A	10	A
				PM	10	B	29	C
17	Atherton Drive / McKinley Avenue Expressway	City of Manteca	Traffic Signal	AM	8	A	42	D
				PM	5	A	24	C

Notes:
[1] Operations would also be at LOS C or better if a two-lane roundabout were installed.
[2] Operations would also be at LOS C or better if a single-lane roundabout were installed.
Bolded cells represent unacceptable operations.

Table 13:
Peak Hour Freeway LOS – Cumulative Conditions

Facility		Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
1	SR 120 EB from I-5 to Yosemite Avenue	Mainline	AM	**36**	**E**	**39**	**E**
			PM	**-**	**F**	**-**	**F**
2	SR 120 EB from Yosemite Avenue to McKinley Avenue	Mainline	AM	30	D	33	D
			PM	**-**	**F**	**-**	**F**
3	SR 120 EB from McKinley Avenue to Airport Way	Mainline	AM	27	D	32	D
			PM	**-**	**F**	**-**	**F**
4	SR 120 EB from Airport Way to Union Road	Mainline	AM	29	D	34	D
			PM	**-**	**F**	**-**	**F**
5	SR 120 EB from Union Road to Main Street	Mainline	AM	30	D	34	D
			PM	**-**	**F**	**-**	**F**
6	SR 120 EB off-ramp at Yosemite Avenue	Ramp Diverge	AM	**37**	**E**	**40**	**E**
			PM	**-**	**F**	**-**	**F**
7	SR 120 EB off-ramp at McKinley Avenue	Ramp Diverge	AM	33	D	**35**	**E**
			PM	**-**	**F**	**-**	**F**

Table 13:
Peak Hour Freeway LOS – Cumulative Conditions

Facility		Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
8	SR 120 EB off-ramp at Airport Way	Ramp Diverge	AM	30	D	34	D
			PM	-	**F**	-	**F**
9	SR 120 EB off-ramp at Union Road	Ramp Diverge	AM	32	D	**36**	**E**
			PM	-	**F**	-	**F**
10	SR 120 EB on-ramp from Yosemite Avenue	Ramp Merge	AM	31	D	33	D
			PM	-	**F**	-	**F**
11	SR 120 EB loop on-ramp from McKinley Avenue	Ramp Merge	AM	25	C	27	C
			PM	-	**F**	-	**F**
12	SR 120 EB on-ramp from McKinley Avenue	Ramp Merge	AM	28	C	32	D
			PM	-	**F**	-	**F**
13	SR 120 EB on-ramp from Airport Way	Ramp Merge	AM	30	D	33	D
			PM	-	**F**	-	**F**
14	SR 120 EB loop on-ramp from Union Road	Ramp Merge	AM	30	D	33	D
			PM	**37**	**E**	**39**	**E**
15	SR 120 EB on-ramp from Union Road	Ramp Merge	AM	31	D	34	D
			PM	-	**F**	-	**F**
16	SR 120 WB from Main Street to Union Road	Mainline	AM	**41**	**E**	**44**	**E**
			PM	-	**F**	-	**F**
17	SR 120 WB from Union Road to Airport Way	Mainline	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
18	SR 120 WB from Airport Way to McKinley Avenue	Mainline	AM	-	**F**	-	**F**
			PM	**41**	**E**	-	**F**
19	SR 120 WB from McKinley Avenue to Yosemite Avenue	Mainline	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
20	SR 120 WB from Yosemite Avenue to I-5	Mainline	AM	**44**	**E**	-	**F**
			PM	-	**F**	-	**F**
21	SR 120 WB off-ramp at Union Road	Ramp Diverge	AM	**41**	**E**	-	**F**
			PM	-	**F**	-	**F**
22	SR 120 WB off-ramp at Airport Way	Ramp Diverge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
23	SR 120 WB off-ramp at McKinley Avenue	Ramp Diverge	AM	-	**F**	-	**F**
			PM	**40**	**E**	-	**F**
24	SR 120 WB off-ramp at Yosemite Avenue	Ramp Diverge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**

Table 13:
Peak Hour Freeway LOS – Cumulative Conditions

Facility		Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
25	SR 120 WB loop on-ramp from Union Road	Ramp Merge	AM	**38**	**E**	**39**	**E**
			PM	**40**	**E**	**-**	**F**
26	SR 120 WB on-ramp from Union Road	Ramp Merge	AM	**-**	**F**	**-**	**F**
			PM	**-**	**F**	**-**	**F**
27	SR 120 WB on-ramp from Airport Way	Ramp Merge	AM	**-**	**F**	**-**	**F**
			PM	**37**	**E**	**-**	**F**
28	SR 120 WB loop on-ramp from McKinley Avenue	Ramp Merge	AM	**-**	**F**	**-**	**F**
			PM	**-**	**F**	**-**	**F**
29	SR 120 WB on-ramp from McKinley Avenue	Ramp Merge	AM	**-**	**F**	**-**	**F**
			PM	**-**	**F**	**-**	**F**
30	SR 120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	**39**	**E**	**-**	**F**
			PM	**-**	**F**	**-**	**F**

Bolded cells represent unacceptable operations.

CMP ROADWAY SEGMENTS

Regional roadways in San Joaquin County are monitored as part of the Regional Congestion Management Program (RCMP) implemented by SJCOG. Within the study area, Airport Way (north of SR 120) and SR 120 are designated as CMP facilities. Additionally, SJCOG has indicated that planned arterials and expressways should also be included in the CMP analysis. Accordingly, the McKinley Avenue Expressway (segments south of SR 120) is included in this study. The RCMP requires that each designated facility be analyzed to identify any project-related impacts. SR 120 is a regional facility that is being analyzed in the forthcoming Manteca General Plan EIR. Therefore, this study includes CMP analyses of study segments of the McKinley Avenue Expressway and Airport Way.

The McKinley Avenue Expressway and Airport Way were evaluated based on their planned cross-sections using PM peak hour volumes in accordance with the guidelines from the RCMP. The LOS was determined using the thresholds as specified by the RCMP. The results are shown in **Table 14** and indicate that all CMP facilities are expected to operate at LOS D or better, which meets the CMP standard for these facilities.

Table 14:
CMP Roadway Segment Operations – Cumulative Conditions

	Roadway	Number of Lanes	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			Two-Way PM Peak Hour Volume	LOS	Two-Way PM Peak Hour Volume	LOS
1	Airport Way – Yosemite Avenue to SR 120	4	2,026	C	2,100	D
2	McKinley Avenue Expressway – SR 120 to Atherton Drive	6	2,409	C	3,670	D
3	McKinley Avenue Expressway – Atherton Drive to Woodward Avenue	4	2,409	D	2,140	D
4	McKinley Avenue Expressway – south of Woodward Avenue	4	1,367	C	1,460	C

EXISTING PLUS PENDING PROJECTS CONDITIONS

This section presents the results of an analysis of the effects of the combined development of the Terra Ranch, Manteca Trails, and Machado Estates projects on the surrounding roadway system. This analysis is meaningful because EIRs are likely to be released simultaneously for Terra Ranch and Manteca Trails. As such, identification of mitigation measures for project-specific impacts in each EIR should ideally consider the effects of other projects that could add traffic to impacted facilities. This scenario is not required under CEQA, but nevertheless presented here for informational purposes.

This analysis focuses on PM peak hour intersection operations along the Airport Way corridor and daily traffic levels on Airport Way and Woodward Avenue. Trips associated with all three projects were added to existing volumes based on the trip distribution percentages developed for each project. **Table 15** shows the resulting daily volumes. **Table 16** displays the resulting peak hour intersections operations (see Appendix D for technical calculations). As noted in this table, traffic signals have been assumed at the Airport Way/Atherton Drive and Airport Way/Woodward Avenue intersections.

Table 16 indicates that 100 percent buildout of all three pending projects would result in LOS F operations at the SR 120/Airport Way ramp intersections and Airport Way/Daniels Street intersection. Through an iterative process, it was determined that approximately 50 percent of buildout of all three pending projects would result in operations that remain at LOS D or better (see Table 15).

Fifty percent buildout of the three pending projects would correspond to 1,317 dwelling units. Thus, it could be inferred from this analysis that operations at the SR 120/Airport Way

interchange would degrade to unacceptable levels with construction of 1,300 or more units[2]. During years with above-average residential growth, Manteca issued an average of 500 residential building permits per year. Assuming the 500-unit per year absorption rate and a conservative assumption that 33 percent of all constructed units are located in southwest Manteca (i.e., within the three pending projects), then it would take approximately 8 years to construct 1,300 units in this area. If construction begins in 2011, then 1,300 units would be constructed in this area by 2019-2020. As mentioned previously, the SR 120/McKinley Avenue interchange is expected to be open to traffic in 2020. Thus, the timing of an important new infrastructure improvement appears to be well coordinated with anticipated residential absorption, which will eventually trigger the need for congestion relief at the SR 120/Airport Way interchange.

Table 15:
Average Daily Traffic Volumes – Existing Plus Pending Project Conditions[1]

	Roadway	Number of Lanes	Average Daily Traffic (ADT)		
			Existing Conditions	Existing Plus 50% Buildout[2]	Existing Plus 100% Buildout[3]
1	Woodward Avenue – west of Airport Way	2	2,200	10,200	18,200
2	Airport Way – Woodward Avenue to Atherton Drive	2	4,600	10,900	17,200
3	Airport Way – Atherton Drive to SR 120	2	8,500	14,800	21,100

Notes:
[1] Pending Projects include Terra Ranch, Machado Estates, and Trails
[2] 50% Buildout scenario assumes 50% of total project trips from Terra Ranch, Machado Estates, and Trails
[3] 100% Buildout scenario assumes the complete buildout of Terra Ranch, Machado Estates, and Trails

2. Construction of non-residential uses on the north side of the interchange could cause interchange operations to degrade sooner. However, the timing of those developments is uncertain.

Table 16:
PM Peak Hour Intersection LOS – Existing Plus Pending Projects Conditions[1]

Intersection		Jurisdiction	Control	Existing Conditions		Existing Plus 50% Build Out[2]		Existing Plus 100% Build Out[3]	
				Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS
3	Daniels Street / Airport Way	City of Manteca	Traffic Signal	24	C	28	C	**95**	**F**
4	SR 120 WB Ramps / Airport Way	Caltrans	Traffic Signal	16	B	28	C	**82**	**F**
5	SR 120 EB Ramps / Airport Way	Caltrans	Traffic Signal	43	D	54	D	**87**	**F**
6	Atherton Drive / Airport Way	City of Manteca	Traffic Signal[4]	20	C	15	B	23	C
7	Woodward Avenue / Airport Way	City of Manteca	Traffic Signal[5]	10	B	21	C	39	D

Notes:
[1] Pending Projects include Terra Ranch, Machado Estates, and Trails
[2] 50% Buildout scenario assumes 50% of total project trips from Terra Ranch, Machado Estates, and Trails
[3] 100% Buildout scenario assumes the complete buildout of Terra Ranch, Machado Estates, and Trails
[4] Atherton Drive / Airport Way intersection has side-street stop control under Existing Conditions
[5] Woodward Avenue / Airport Way intersection has all-way stop control under Existing Conditions
Bolded cells represent unacceptable operations.

5. IMPACTS AND MITIGATIONS

This chapter identifies the project-specific and cumulatively significant impacts of the proposed project on the transportation system. Each impact is followed by a recommended mitigation measure to reduce the significance of identified impacts.

PROJECT-SPECIFIC IMPACTS AND MITIGATIONS

This section evaluates the significance of project impacts based on the thresholds of significance and analysis results in the previous chapter.

TR-1 The proposed project could cause potentially significant traffic impacts during construction.

Construction may include disruptions to the transportation network near the site, including the possibility of temporary street closures. Heavy vehicles will access the site and may need to be staged for construction. These activities could result in degraded roadway operating conditions. Therefore, this impact is considered **significant**.

Mitigation Measure

TR-1 *Prior to the beginning of construction, the applicant shall prepare a construction traffic management plan to the satisfaction of the City's Public Works Department. The plan shall ensure that acceptable operating conditions are maintained on local roadways during peak travel hours.*

Implementation of this mitigation measure would reduce the above impact to a **less-than-significant** level.

TR-2 The proposed project could cause potentially significant impacts to freeway facilities.

According to Table 10 and the significance criteria, the proposed project would cause the following significant impacts to freeway facilities during the PM peak hour:

- EB SR 120 between I-5 and Yosemite Avenue (LOS E exacerbated)
- EB SR 120 between Yosemite Avenue and Airport Way (LOS D to E)
- EB SR 120 off-ramp diverge at Yosemite Avenue (LOS E exacerbated)
- Eastbound SR 120 off-ramp diverge at Airport Way (LOS E exacerbated)
- EB SR 120 on-ramp merge from Yosemite Avenue (LOS D to E)

This impact is considered **significant**.

Mitigation Measure

TR-2 *The project applicant shall pay the appropriate San Joaquin County Regional Traffic Impact Fee (RTIF), which is collecting fees from new developments to help fund the widening of SR 120 to six lanes.*

The widening of SR 120 to six lanes would improve operations at each impacted location to an acceptable level. Implementation of this mitigation measure would reduce the significance of the impact. However, the impact would remain **significant and unavoidable** because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time.

TR-3 The proposed project could cause potentially significant impacts to study intersections.

According to Table 9 and the significance criteria, the proposed project would cause the following significant impacts to study intersections:

4) Woodward Avenue/McKinley Avenue (LOS A to F during PM peak hour)
9) Atherton Drive/Airport Way (LOS C to F during PM peak hour)
10) Woodward Avenue/Airport Way (LOS A to F during AM peak hour and LOS B to F during PM peak hour)

This impact is considered **significant**.

Mitigation Measure

TR-3 *Implementation of the following improvements would restore operations to an acceptable level at each intersection (see Appendix E):*

- *Woodward Avenue/McKinley Avenue – Widen intersection to include a two-way left-turn lane on Woodward Avenue to accommodate eastbound and southbound left-turn movements. Construct channelized southbound right-turn lane with 250-foot receiving lane on westbound Woodward Avenue. With these improvements in place, operations would be restored to LOS C during the AM and PM peak hours; or*

  Construct Atherton Drive extension to Woodward Avenue prior to operations at the Woodward Avenue/McKinley Avenue intersection degrading to an unacceptable level. Operations are projected to degrade to unacceptable at approximately 70 percent of project buildout This new road construction would divert all trips away from the Woodward Avenue/McKinley Avenue intersection, thereby no longer requiring the need for any improvements.

- *Atherton Drive/Airport Way – Install traffic signal, restripe eastbound approach to include left, through, and right lane, and restripe northbound approach to include one left-turn lane, one through lane, and one shared through/right lane. Restripe northbound Airport Way north of Atherton Drive to include a second travel lane to the SR 120 eastbound ramps intersection. With this improvement in place, operations would be restored to LOS A during the AM peak hour and LOS B during the PM peak hour.*

- *Woodward Avenue/Airport Way – Install traffic signal and widen intersection to include exclusive left-turn lane and shared through/right lane on eastbound, westbound, and northbound approaches. Widen southbound approach to include exclusive left, through, and right-turn lanes and operate right-turn lane with overlap arrow. With this improvement in place, operations would be restored to LOS B during the AM peak hour and LOS C during the PM peak hour.*[3]

Improvements at the Atherton Drive/Airport Way and Woodward Avenue/Airport Way intersections are included in the City's PFIP. Accordingly, project mitigation may take the form of payment of the applicable PFIP fee with required improvements to be constructed by the City when warranted. Alternatively, the project applicant may be asked to construct these, or other equally effective improvements and receive credit toward PFIP fees.

Improvements at the Woodward Avenue/McKinley Avenue intersection are not included in the City's PFIP, and are only needed if the project is developed. Therefore, if the City decides this improvement will be warranted due to uncertainties regarding the timing of the Atherton Drive extension, this improvement would be the applicant's responsibility. Since this intersection will ultimately be eliminated when the Atherton Drive extension is constructed, , more permanent and expensive intersection improvements such as a new traffic signal are not recommended.

***Figure 10** illustrates the above improvements. Implementation of this mitigation measure would reduce the above impact to a **less-than-significant** level.*

TR-4 The proposed project could cause potentially significant impacts to bicycle and pedestrian facilities.

According to the project description, the project would construct a 12-mile trail system within the project that would connect with the planned City system. The City of Manteca Bikeway Master Plan shows a planned Class I (off-street) bike path along the project frontage on Woodward Avenue. East of the project site, the Class I path would extend northeasterly along the Atherton Drive extension alignment. The project description does not include any provision for or reference to a Class I path along the project's frontage on Woodward Avenue. Therefore, this impact is considered **significant**.

3. An alternative mitigation would be the installation of a roundabout. Due to the heavy southbound entry volume, a right-turn bypass lane would be needed. Furthermore, when traffic from other pending projects was considered, this mitigation did not result in acceptable operations whereas the traffic signal did.

Mitigation Measure

TR-4 *The project applicant shall construct a bicycle facility along the project's frontage on Woodward Avenue in accordance with planned improvements in the latest version of the City's Bikeway Master Plan.*

This improvement would provide consistency with the City's Bikeway Master Plan and enable future bike/pedestrian travel easterly to Atherton Drive. Implementation of this measure would reduce this impact to **less than significant**.

Figure 10: Project-Specific Intersection Mitigations

TR-5 The proposed project could cause potentially significant impacts to the transit system.

The project description does not describe any transit facilities or amenities planned within the project site. The project would not disrupt existing or planned transit services or facilities or create an inconsistency with applicable policies related to transit. However, because the project does not include provisions to accommodate future transit service, this impact is considered **significant**.

Mitigation Measure

TR-5 The applicant shall incorporate bus turnouts and shelters into the project site plan as required by the City's Public Works Department and Manteca Transit.

Implementation of this mitigation measure would reduce the above impact to a **less-than-significant** level.

TR-6 The proposed project could increase the potential for accidents on a roadway due to a non-standard design feature.

Woodward Avenue features a sharp horizontal curve in the northwest corner of the project site. The northbound Woodward Avenue approach to the curve features a 15 mph warning sign. Woodward Avenue is 20 to 24 feet in width approaching this curve. The curve "bulbs out" to a width of 33 feet. The project, by virtue of having an access on Woodward Avenue south of this curve, would add traffic to this curve. This is considered a potentially **significant** impact.

Mitigation Measure

TR-6 In conjunction with other frontage improvements, the project applicant shall reconstruct the horizontal curve on Woodward Avenue in the northwest quadrant of the project to have a radius of at least 180 feet, which would increase its design speed from 15 to 25 mph.

This revised horizontal curve was evaluated in the context of the proposed lotting plan and the turning movement requirements of a truck. The site plan indicates that the lots nearest this curve will be set back a sufficient distance that would enable construction of this curve. The AutoTurn software program was used ot evaluate the swept path of a WB-50 design truck through a 180-foot radius curve. It was determined that two 16-foot lanes could accommodate the truck without encroaching onto the oncoming lane.

Implementation of this mitigation measure would reduce the above impact to a **less-than-significant** level.

TR-7 The proposed project could result in inadequate emergency vehicle access.

As currently proposed, all emergency vehicles would need to use Woodward Avenue to access the project site. If Woodward Avenue were to become impassable due to an

incident (i.e., fire, flooding, auto accident), emergency responders could not reach the project site, nor could it be evacuated. Based on site reconnaissance, it is anticipated that the existing dry levee would be a logical alignment for the temporary emergency vehicle access (EVA), as this route would link up to city streets in the planned Terra Ranch development to the east. However, if the levee alignment was found to be infeasible, another option would be the use the existing unpaved agricultural roads between the project site and Terra Ranch. These concepts are illustrated on Figure 12. This is considered a potentially **significant** impact.

Mitigation Measure

TR-7 The project applicant shall identify a temporary emergency vehicle access (EVA) to the proposed project. The temporary EVA shall provide access from the east and be maintained until a second permanent roadway connection is established (i.e., Woodward Avenue after the Atherton Drive extension is completed). The temporary EVA alignment shall be suitable for use by large emergency vehicles (e.g., fire engines) and be reviewed and approved by the City of Manteca.

Implementation of this mitigation measure would reduce the above impact to a **less-than-significant** level. However, if the applicant was unsuccessful in acquiring an EVA, this impact would remain **significant and unavoidable** until the Atherton Drive extension is connected.

TR-8 The proposed project could cause potentially significant impacts to at-grade railroad crossings.

McKinley Avenue features an at-grade crossing of a UP railroad track between SR 120 and Yosemite Avenue. The project would result in the volume of traffic crossing this track to increase from 900 to 4,900 vehicles per day. This crossing has advanced warning signs, railroad crossing pavement markings, stop lines, crossing gates, flashing lights, and warning bells. The project would not cause an increase in delay during train crossings that would correspond to LOS E or worse conditions. Furthermore, the project would not add traffic to an at-grade crossing with a known safety problem. Therefore, this impact is considered **less than significant**.

Mitigation Measure

The City of Manteca, San Joaquin County, and the California Public Utilities Commission shall monitor the operations and safety of the McKinley Avenue grade crossing with the Union Pacific Oakland Subdivision. Monitoring activities may include, but not be limited to, traffic counts, video surveillance, review of agency reports, or other empirical measurements to determine whether safety improvements are warranted. Such safety improvements are anticipated to consist of the installation of raised roadway median on both approaches (to discourage wrong-way travel when the gates are down). The project applicant shall provide fees to the City of Manteca for the full cost of the installation of the raised median. The project applicant's financial contribution may be reduced to the extent other funding sources (e.g., Measure K, or

Section 130) are available. At the time the safety improvements are determined to be warranted, the City of Manteca shall coordinate with agencies with jurisdiction over the McKinley Avenue grade crossing to install the improvements.

CUMULATIVE IMPACTS AND MITIGATIONS

This section evaluates the significance of cumulative project impacts and recommends mitigations for each impact.

TR-9 The proposed project could cause potentially significant impacts to freeway facilities.

According to Table 13, the project would further exacerbate cumulatively unacceptable operations on SR 120. This impact is considered **significant**.

Mitigation Measure

TR-9 Implement Mitigation Measure TR-2 (Pay RTIF).

The widening of SR 120 to six lanes would improve operations to an acceptable level at 25 of the 30 study facilities (See **Table 17**). By adding new residents to the area, the project would result in additional revenues through the Measure K sales tax, which helps fund the SR 120 widening. However, the impact would remain **significant and unavoidable** because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time.

TR-10 The proposed project could cause potentially significant impacts to study intersections.

According to Table 12, the SR 120/Airport Way and SR 120/Yosemite Avenue ramp intersections would operate at LOS E of F during one or both peak hours with the proposed project. Vehicle queues from the SR 120/Airport Way ramp intersections would cause operations at the Airport Way/Daniels Street and Airport Way/Atherton Drive intersections to also operate at LOS F during one or both peak hours. This impact is considered **significant**.

Mitigation Measure

TR-10 The project applicant shall pay its fair share toward improvements to the SR 120/Airport Way and SR 120/Yosemite Avenue interchanges. The project's fair share traffic contribution to these interchanges is estimated to be 7.1 and 2.8 percent, respectively[4].

4. Fair share calculation is based on the project's cumulative traffic contribution (total AM and PM peak hour volumes) on four freeway on- and off-ramps using the following formula:

Fair Share Percentage = [Project Only Total Volume ÷ (Cumulative Plus Project Total Volume – Existing Count Volume)]

Fair Share Percentage = [287÷ (7,020 – 2,957)] = 7.1%

The following improvements would be necessary at each interchange to accommodate the cumulative volumes:

SR 120/Airport Way Interchange

- *Construct loop on-ramps*
- *Widen overcrossing to include two northbound and three southbound lanes*
- *Widen SR 120 EB and WB off-ramps to include two left-turn lanes and two right-turn lanes*
- *Restripe the SB approach at the Airport Way/Daniels Street intersection to add a third through lane and restripe the NB approach to add an exclusive right-turn lane*
- *Restripe the EB Daniels Street approach to include left, shared left/through, and two right-turn lanes with right-turn overlap phasing.*

SR 120/Yosemite Avenue Interchange

- *Install all-way stop at SR 120 EB Ramps/Yosemite Avenue intersection*
- *Widen westbound off-ramp to include channelized ""free" right-turn lane*
- *Widen southbound Yosemite Avenue approach to include exclusive right-turn lane*

Figure 11 illustrates the above improvements. Implementation of these improvements would substantially improve interchange operations (See **Table 18**). However, the impact would remain **significant and unavoidable** because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time. Furthermore, funding for the remaining share of the cost has not been identified.

Table 17:
Peak Hour Freeway LOS – Cumulative Plus Project Conditions with Mitigations

Facility		Type	Peak Hour	Cumulative Plus Project		Cumulative Plus Project with Mitigation	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
1	SR 120 EB from I-5 to Yosemite Avenue	Mainline	AM	**39**	**E**	24	C
			PM	**-**	**F**	33	D
2	SR 120 EB from Yosemite Avenue to McKinley Avenue	Mainline	AM	33	D	21	C
			PM	**-**	**F**	35	D
3	SR 120 EB from McKinley Avenue to Airport Way	Mainline	AM	32	D	21	C
			PM	**-**	**F**	30	D
4	SR 120 EB from Airport Way to Union Road	Mainline	AM	34	D	22	C
			PM	**-**	**F**	31	D
5	SR 120 EB from Union Road to Main Street	Mainline	AM	34	D	22	C
			PM	**-**	**F**	28	D
6	SR 120 EB off-ramp at Yosemite Avenue	Ramp Diverge	AM	**40**	**E**	28	C
			PM	**-**	**F**	34	D
7	SR 120 EB off-ramp at McKinley Avenue	Ramp Diverge	AM	**35**	**E**	26	C
			PM	**-**	**F**	**37**	**E**
8	SR 120 EB off-ramp at Airport Way	Ramp Diverge	AM	34	D	25	C
			PM	**-**	**F**	33	D
9	SR 120 EB off-ramp at Union Road	Ramp Diverge	AM	**36**	**E**	26	C
			PM	**-**	**F**	35	D
10	SR 120 EB on-ramp from Yosemite Avenue	Ramp Merge	AM	33	D	21	C
			PM	**-**	**F**	32	D
11	SR 120 EB loop on-ramp from McKinley Avenue	Ramp Merge	AM	27	C	18	B
			PM	**-**	**F**	30	D
12	SR 120 EB on-ramp from McKinley Avenue	Ramp Merge	AM	32	D	23	C
			PM	**-**	**F**	29	D
13	SR 120 EB on-ramp from Airport Way	Ramp Merge	AM	33	D	23	C
			PM	**-**	**F**	32	D
14	SR 120 EB loop on-ramp from Union Road	Ramp Merge	AM	33	D	22	C
			PM	**39**	**E**	26	C

Table 17:
Peak Hour Freeway LOS – Cumulative Plus Project Conditions with Mitigations

Facility		Type	Peak Hour	Cumulative Plus Project		Cumulative Plus Project with Mitigation	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
15	SR 120 EB on-ramp from Union Road	Ramp Merge	AM	34	D	22	C
			PM	**-**	**F**	28	C
16	SR 120 WB from Main Street to Union Road	Mainline	AM	**44**	**E**	25	C
			PM	**-**	**F**	28	D
17	SR 120 WB from Union Road to Airport Way	Mainline	AM	**-**	**F**	28	D
			PM	**-**	**F**	30	D
18	SR 120 WB from Airport Way to McKinley Avenue	Mainline	AM	**-**	**F**	28	D
			PM	**-**	**F**	28	D
19	SR 120 WB from McKinley Avenue to Yosemite Avenue	Mainline	AM	**-**	**F**	28	D
			PM	**-**	**F**	**36**	**E**
20	SR 120 WB from Yosemite Avenue to I-5	Mainline	AM	**-**	**F**	27	D
			PM	**-**	**F**	**43**	**E**
21	SR 120 WB off-ramp at Union Road	Ramp Diverge	AM	**-**	**F**	29	D
			PM	**-**	**F**	32	D
22	SR 120 WB off-ramp at Airport Way	Ramp Diverge	AM	**-**	**F**	31	D
			PM	**-**	**F**	33	D
23	SR 120 WB off-ramp at McKinley Avenue	Ramp Diverge	AM	**-**	**F**	32	D
			PM	**-**	**F**	31	D
24	SR 120 WB off-ramp at Yosemite Avenue	Ramp Diverge	AM	**-**	**F**	31	D
			PM	**-**	**F**	**35**	**E**
25	SR 120 WB loop on-ramp from Union Road	Ramp Merge	AM	**39**	**E**	27	C
			PM	**-**	**F**	29	D
26	SR 120 WB on-ramp from Union Road	Ramp Merge	AM	**-**	**F**	28	C
			PM	**-**	**F**	29	D
27	SR 120 WB on-ramp from Airport Way	Ramp Merge	AM	**-**	**F**	29	D
			PM	**-**	**F**	29	D
28	SR 120 WB loop on-ramp from McKinley Avenue	Ramp Merge	AM	**-**	**F**	31	D
			PM	**-**	**F**	30	D
29	SR 120 WB on-ramp from McKinley Avenue	Ramp Merge	AM	**-**	**F**	27	C
			PM	**-**	**F**	35	D
30	SR 120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	**-**	**F**	27	C
			PM	**-**	**F**	**37**	**E**

Bolded cells represent unacceptable operations.

Figure 11: Cumulative Project Intersection Mitigations

Table 18:
Peak Hour Intersection LOS – Cumulative Mitigations

Intersection		Jurisdiction	Control	Peak Hour	Cumulative Plus Project		Cumulative Plus Project w/ Mitigations	
					Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS
1	SR 120 WB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	22	C	15	C
				PM	**38**	**E**	14	B
2	SR 120 EB Ramps / Yosemite Avenue	Caltrans	Side Street Stop	AM	**52**	**F**	16	C
				PM	12	B	11	B
3	Daniels Street / Airport Way	City of Manteca	Traffic Signal	AM	32	C	23	C
				PM	**>150**	**F**	50	D
4	SR 120 WB Ramps / Airport Way	Caltrans	Traffic Signal	AM	**110**	**F**	11	B
				PM	**>150**	**F**	16	B
5	SR 120 EB Ramps / Airport Way	Caltrans	Traffic Signal	AM	**104**	**F**	10	B
				PM	**>150**	**F**	15	B
6	Atherton Drive / Airport Way	City of Manteca	Traffic Signal	AM	**>150**	**F**	27	C
				PM	48	D	23	C

Bolded cells represent unacceptable operations.

TR-11 The proposed project could cause potentially significant impacts to CMP roadway segments.

According to Table 14, the CMP facilities evaluated in this study (Airport Way north of SR 120 and McKinley Avenue Expressway) would operate at an acceptable LOS D or better under cumulative plus project conditions. Therefore, this impact is considered **less than significant**.

Mitigation Measure

None.

6. PROJECT ACCESS EVALUATION

This chapter evaluates access to the project site and internal circulation. **Figure 12** illustrates the recommendations.

FRONTAGE IMPROVEMENTS

As part of the City's General Plan Circulation Element update, daily volume thresholds were developed for roadway sizing purposes. Collector streets have an LOS D threshold of 11,300 ADT. According to Table 8, Woodward Avenue west of McKinley Avenue would carry 15,500 ADT under existing plus project conditions. The current configuration of Woodward Avenue (two undivided lanes, minimal shoulders, no turn pockets) is not suitable for this level of traffic. Accordingly, Fehr & Peers recommends that the City consider the following:

- The City should periodically monitor traffic levels on Woodward Avenue west of Airport Way. When the volume reaches 6,000 ADT, the City should initiate environmental review and engineering for the Atherton Drive extension to McKinley Avenue. The new four-lane Atherton Drive extension would ideally be constructed and open to traffic by at a point when Woodward Avenue is carrying about 10,000 ADT. [5]

Under cumulative plus project conditions, the segment of Woodward Avenue directly west of the Atherton Drive extension is projected to carry about 10,500 ADT. This segment will operate acceptably as two lanes. An exclusive left-turn pocket is recommended at the central project access. Right-turn deceleration lanes at the project accesses are not required.

A traffic signal is required at the Woodward Avenue/Atherton Drive Extension/Tara Park Avenue intersection (see Figure 12). This signal would be warranted under existing plus project conditions. This intersection is recommended to consist of one left and two through lanes on the northbound approach, one right and two through lanes on the southbound approach, and one left and one right lane on the eastbound approach.

The *Trails at Manteca Master Grading Plan* (UDI-Tetrad Consulting Engineers, August 2010) shows Tara Park Avenue extending southerly from Woodward Avenue opposite the Atherton Drive Extension. Trails Loop Road would intersect Tara Park Avenue approximately 400 feet south of Woodward Avenue. A second project access (E Street) would intersect Tara Park Avenue 600 feet south of Trails Loop Road. The terminus of Tara Park Avenue would provide access to the MF-1 parcel. Given the curvature of Trails Loops Road, the project applicant's engineer should confirm the adequacy of sight distance on residential street intersections.

[5] In conjunction with this improvement, McKinley Avenue Expressway would need to be constructed a short distance northerly to connect to Atherton Drive extension (see Figure 12). About 60 percent of project buildout could occur prior to ADT reaching 10,000. However, development of Oakshore residential units could result in 10,000 ADT prior to 60 percent project buildout.

Figure 12: Project Access Considerations

Trails Loop Road and East Street would each carry about 4,000 ADT directly west of Tara Park Avenue, with volumes decreasing as these streets extend further into the project. Lots 102-107 in Unit 6C would front directly onto Trails Loop Road (with driveways served from an alley) between Tara Park Avenue and the first internal roundabout. Given that this segment will carry approximately 4,000 ADT and may experience moderate vehicle queues as vehicles wait to turn left onto Tara Park Avenue, Fehr & Peers recommends the following:

- Relot Unit 6C so that residential lots do not front onto Trails Loop Road directly west of Tara Park Avenue.

Tara Park Avenue will likely provide access to the Tara Park project located directly east of the Manteca Trails project. Since the specific type and quantity of land uses are not known, the amount of traffic expected to use Tara Park Avenue is also unknown. Following are some generalized recommendations for Tara Park Avenue based on its expected usage by Manteca Trails and spacing of access openings:

- The segment of Tara Park Avenue between Woodward Avenue and Trails Loop Road will likely require two travel lanes in each direction.
- Stop-control with full access is recommended on the Trails Loop Road and E Street approaches to Tara Park Avenue.
- Development of Tara Park will likely require widening of Tara Park Avenue easterly. Exclusive southbound left-turn lanes will likely be necessary on Tara Park Avenue to accommodate ingress to Tara Park.

INTERNAL STREETS

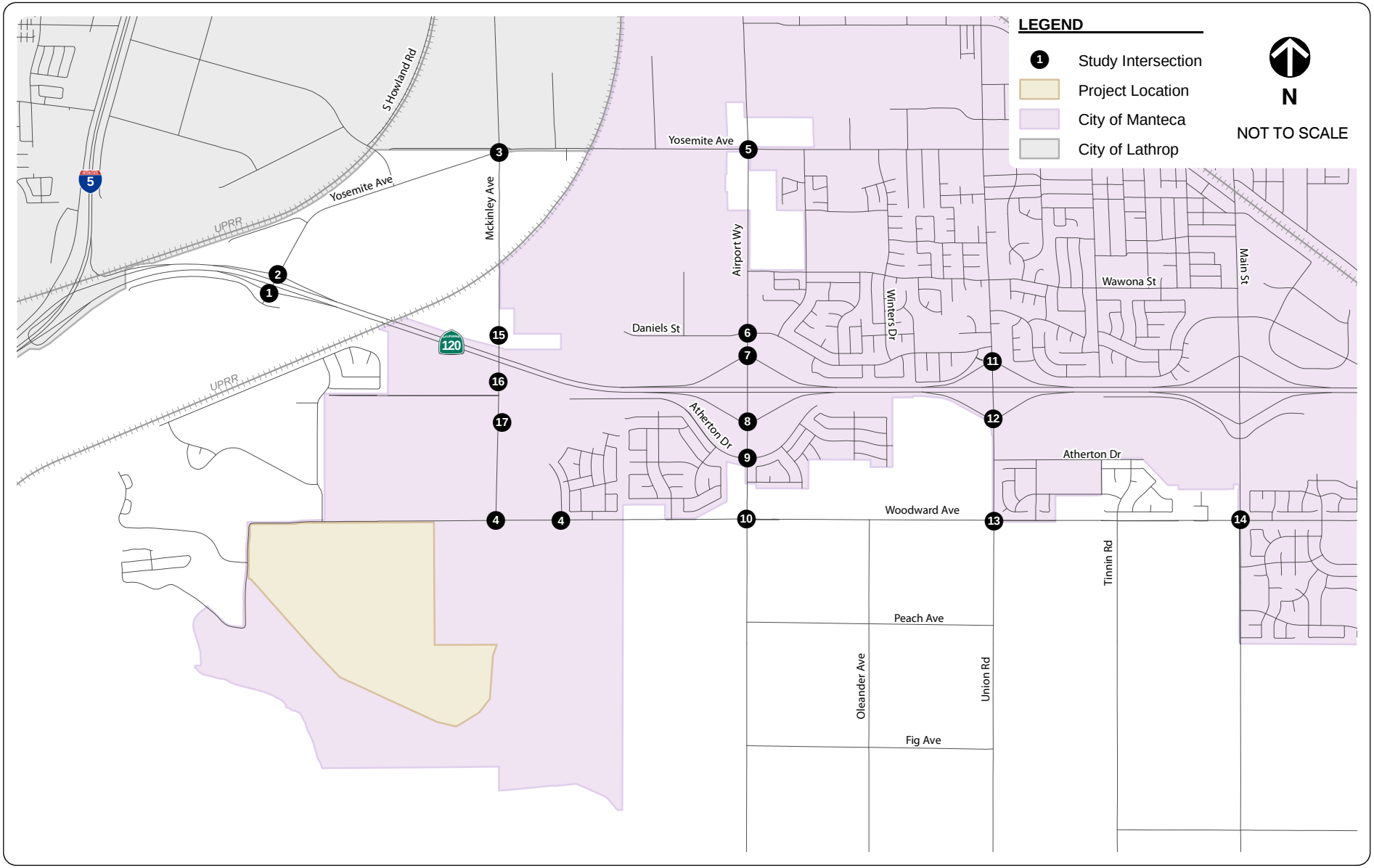
Trails Loop Road would extend in a north-south direction along the easterly edge of the project for 0.6 miles from its begin/end point near Unit 6C to Running Way. Although traffic circles are proposed at the Trails Loop Road begin/end point (near Unit 6C) and at Running Way, no controls are shown between these locations. To discourage speeding and to "calm" traffic along this lengthy segment with fronting residences, Fehr & Peers recommends the following:

- Install traffic circles, speed tables, speed legends, chicanes, and/or other approved traffic calming devices along the easterly segment of Trails Loop Road.

In addition, Fehr & Peers recommends that the project applicant's engineer work with City staff to confirm that the dimensions and configurations of the on-site traffic circles can accommodate trucks and school buses. The inscribed diameter of most traffic circles within the plan area appears to be less than 100 feet. In contrast, the inscribed diameter of the traffic circle in a residential area north of Woodward Avenue (on Grafton Street) is approximately 140 feet wide.

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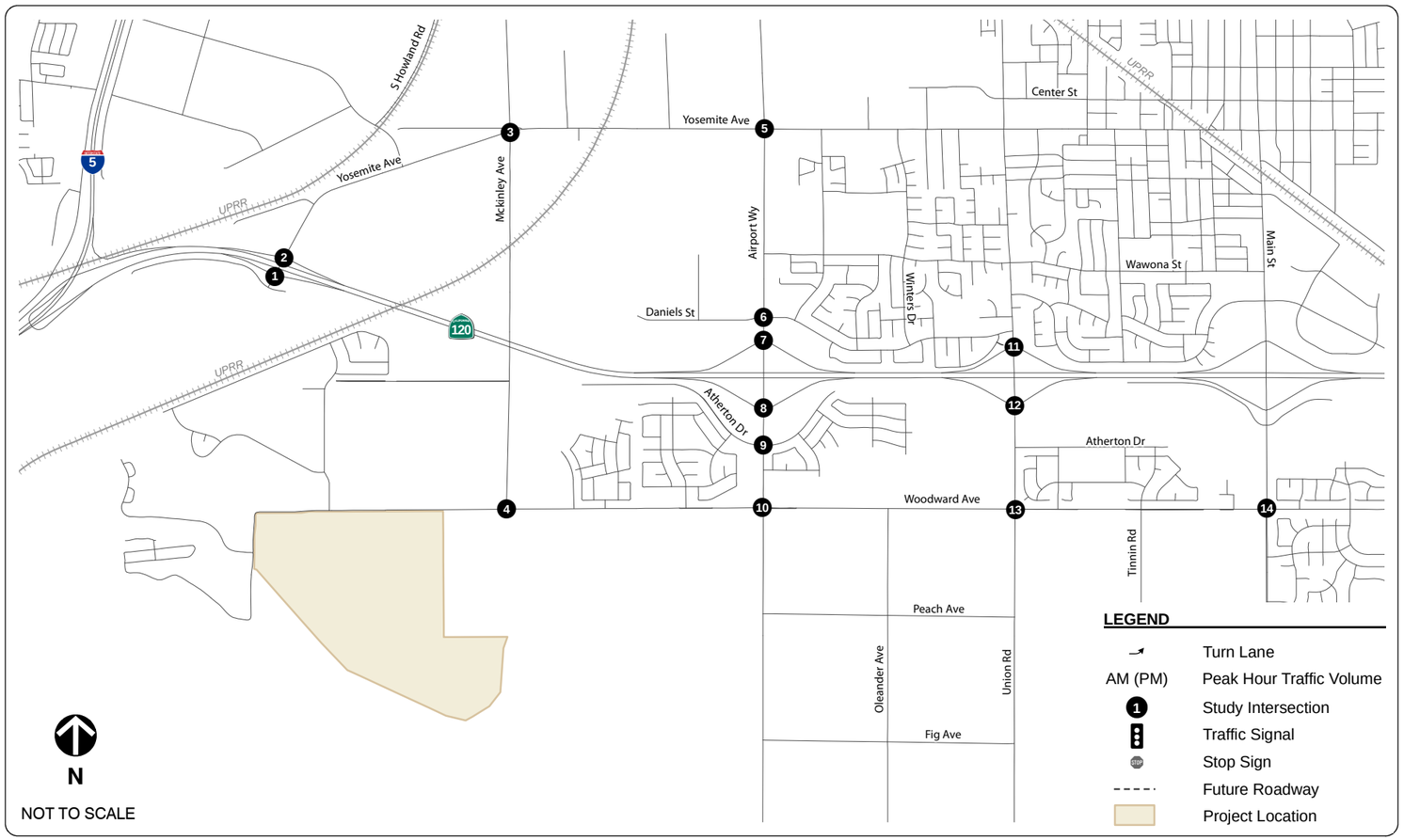


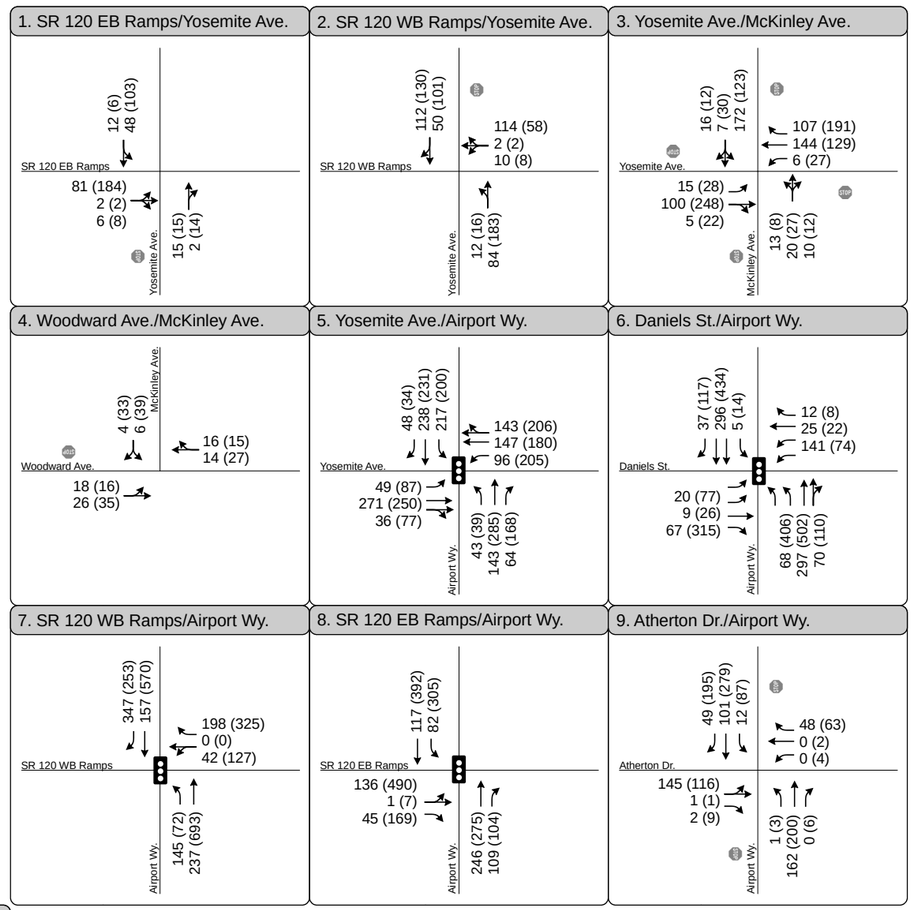
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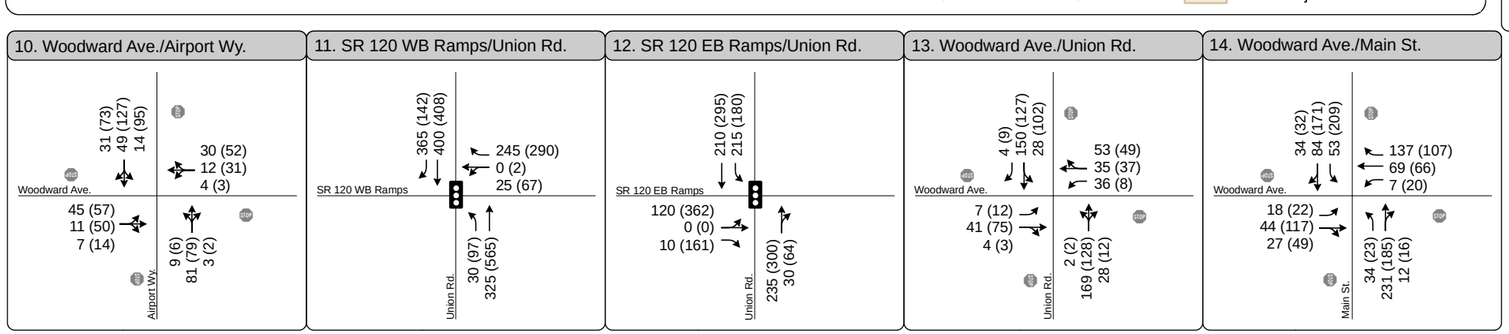
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PROJECT LOCATION AND STUDY INTERSECTIONS

FIGURE 1





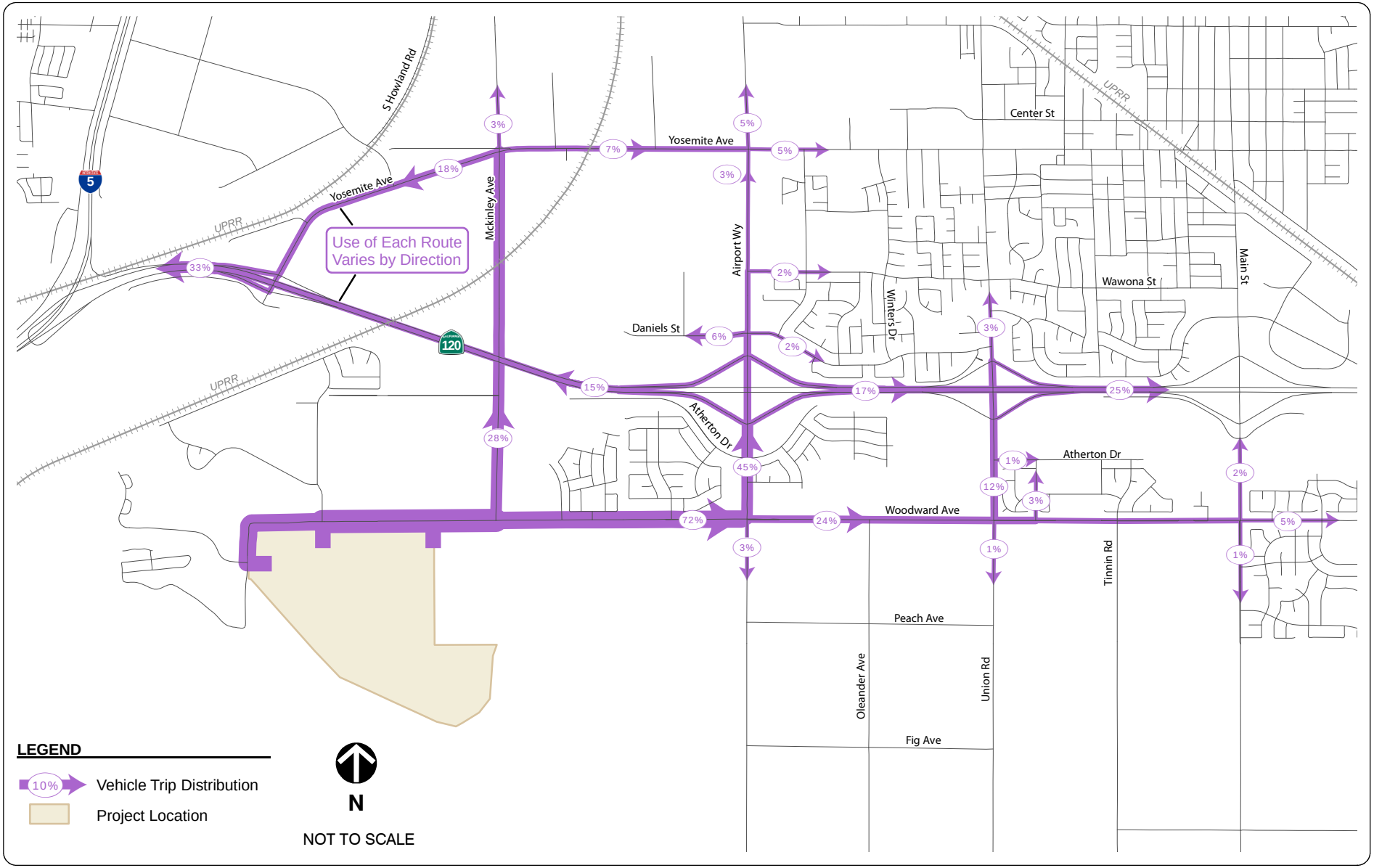


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PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

FIGURE 2

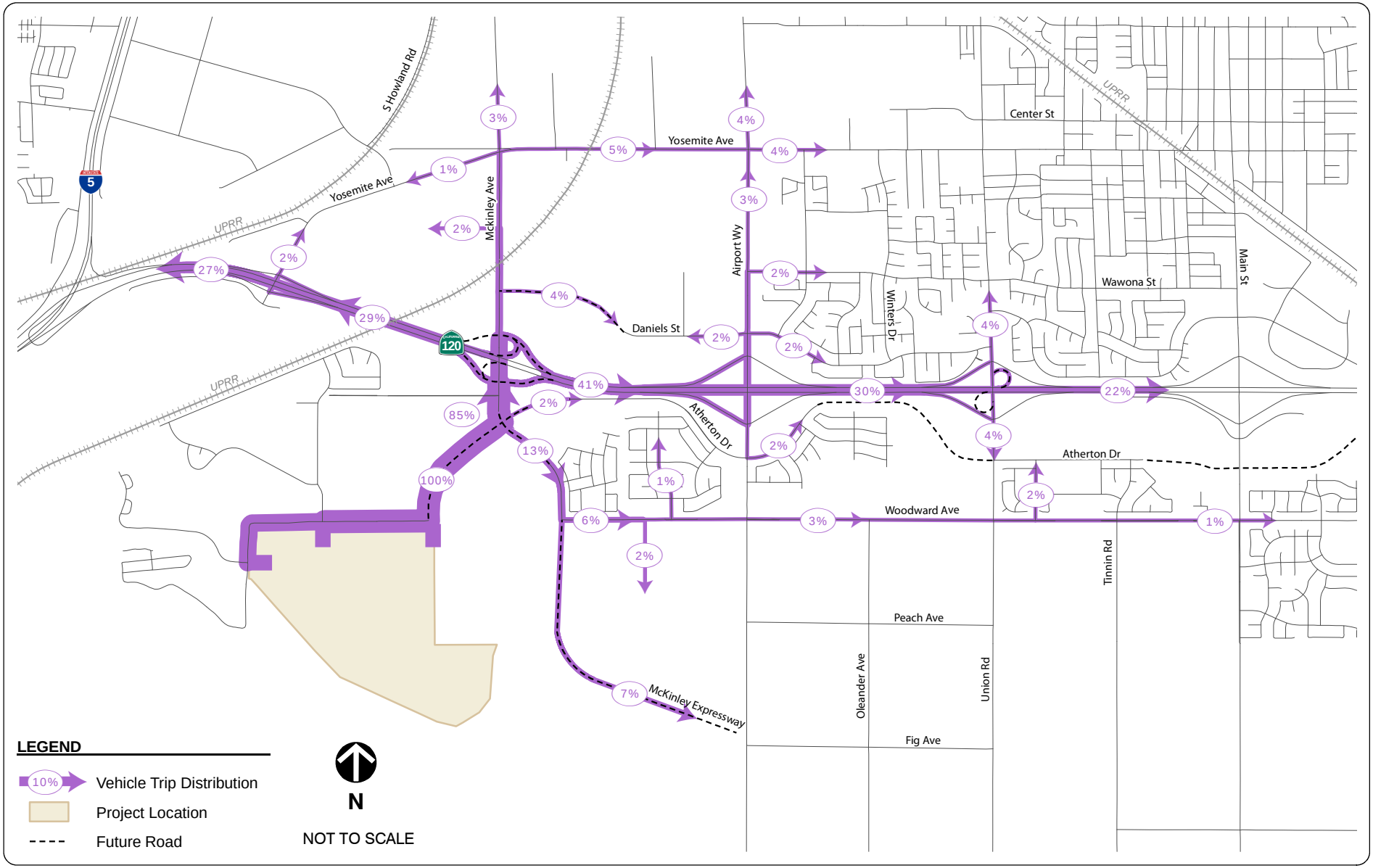


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PROJECT TRIP DISTRIBUTION - EXISTING CONDITIONS

FIGURE 3

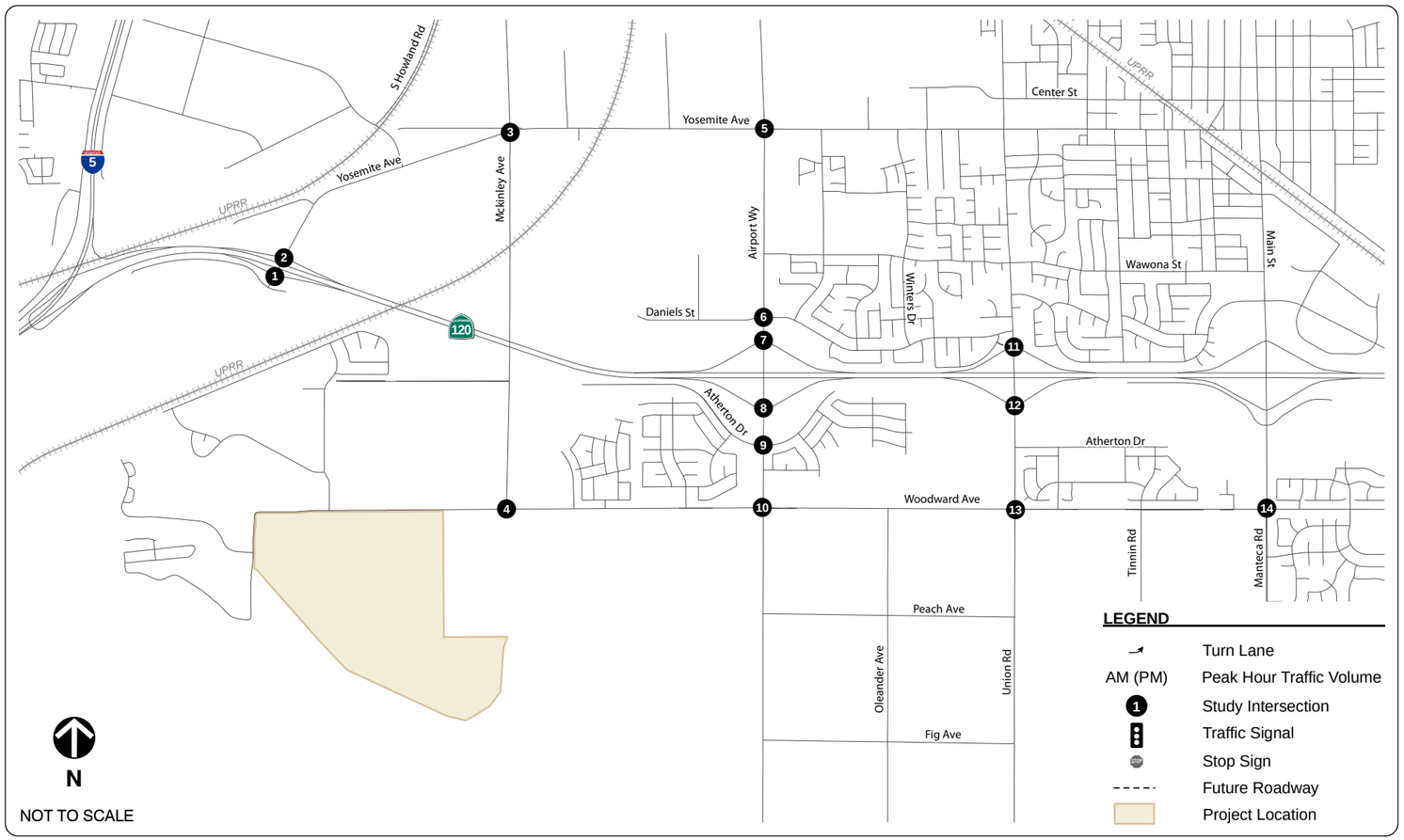


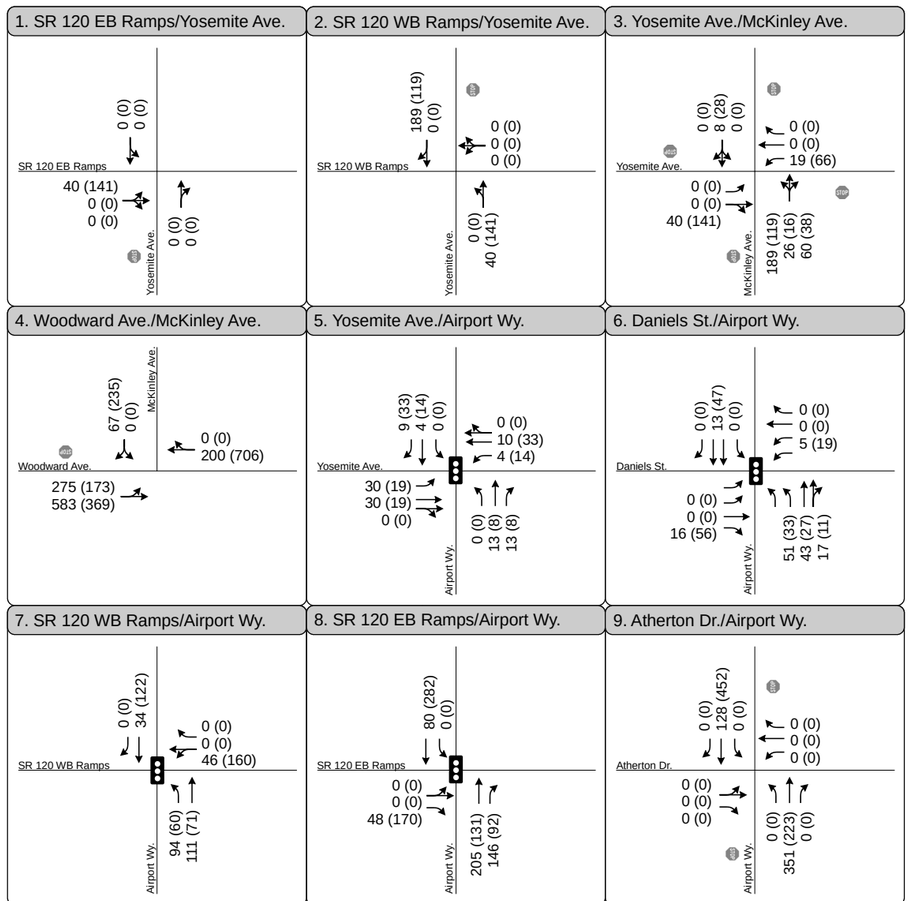
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PROJECT TRIP DISTRIBUTION - CUMULATIVE CONDITIONS

FIGURE 4



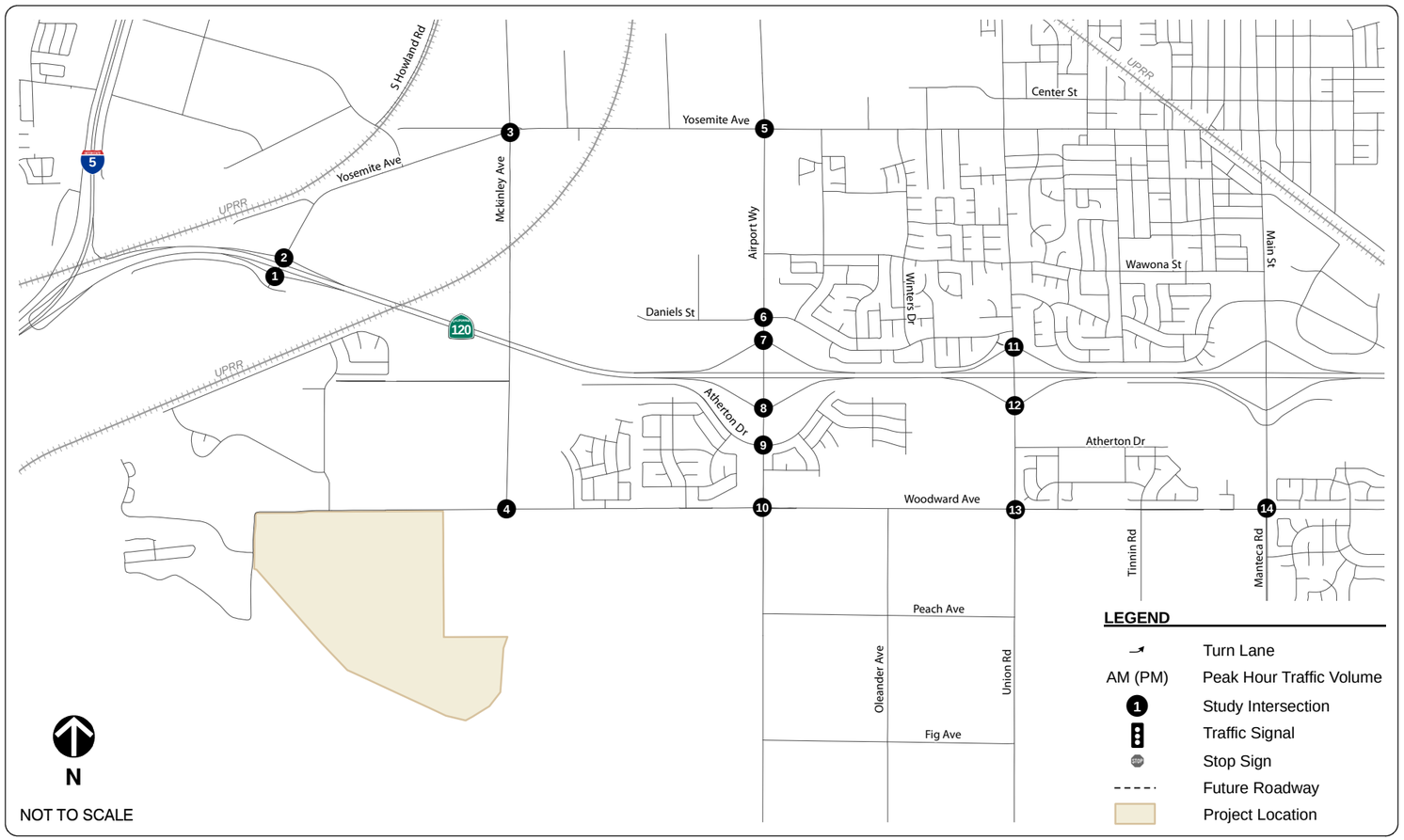


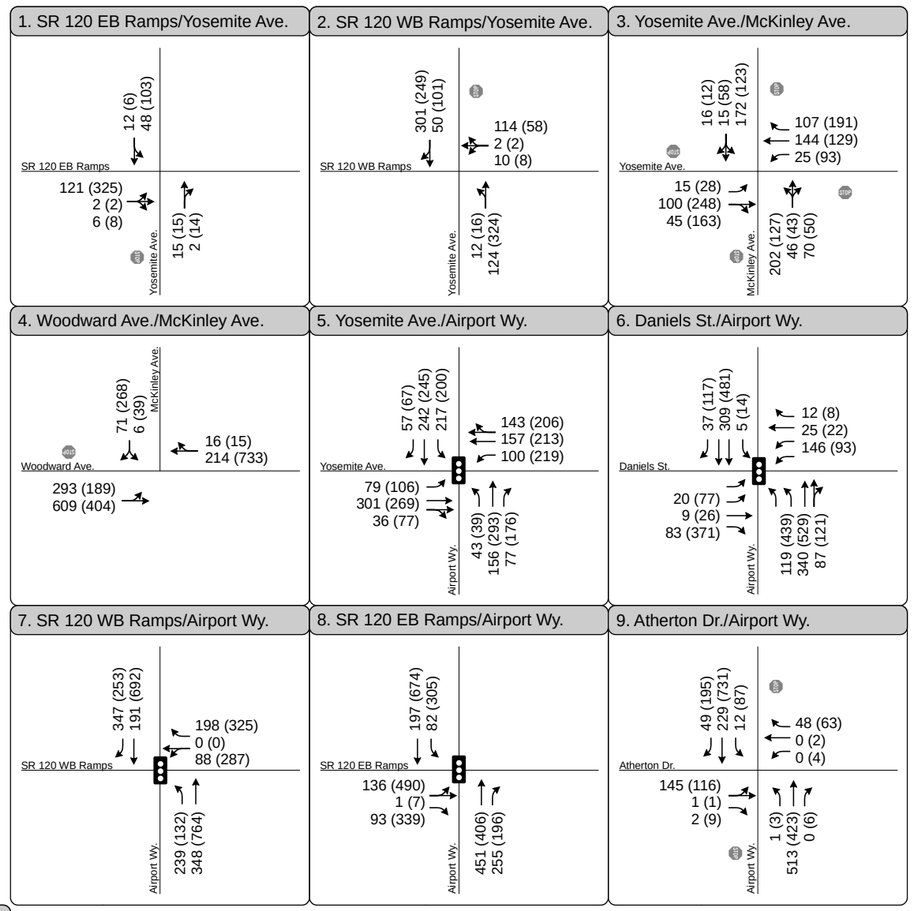
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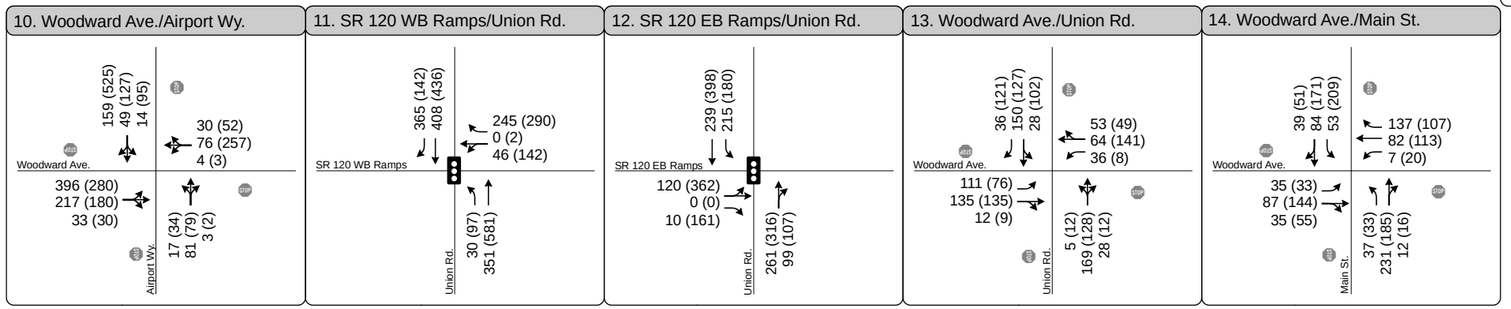
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PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - PROJECT ONLY TRIPS

FIGURE 5





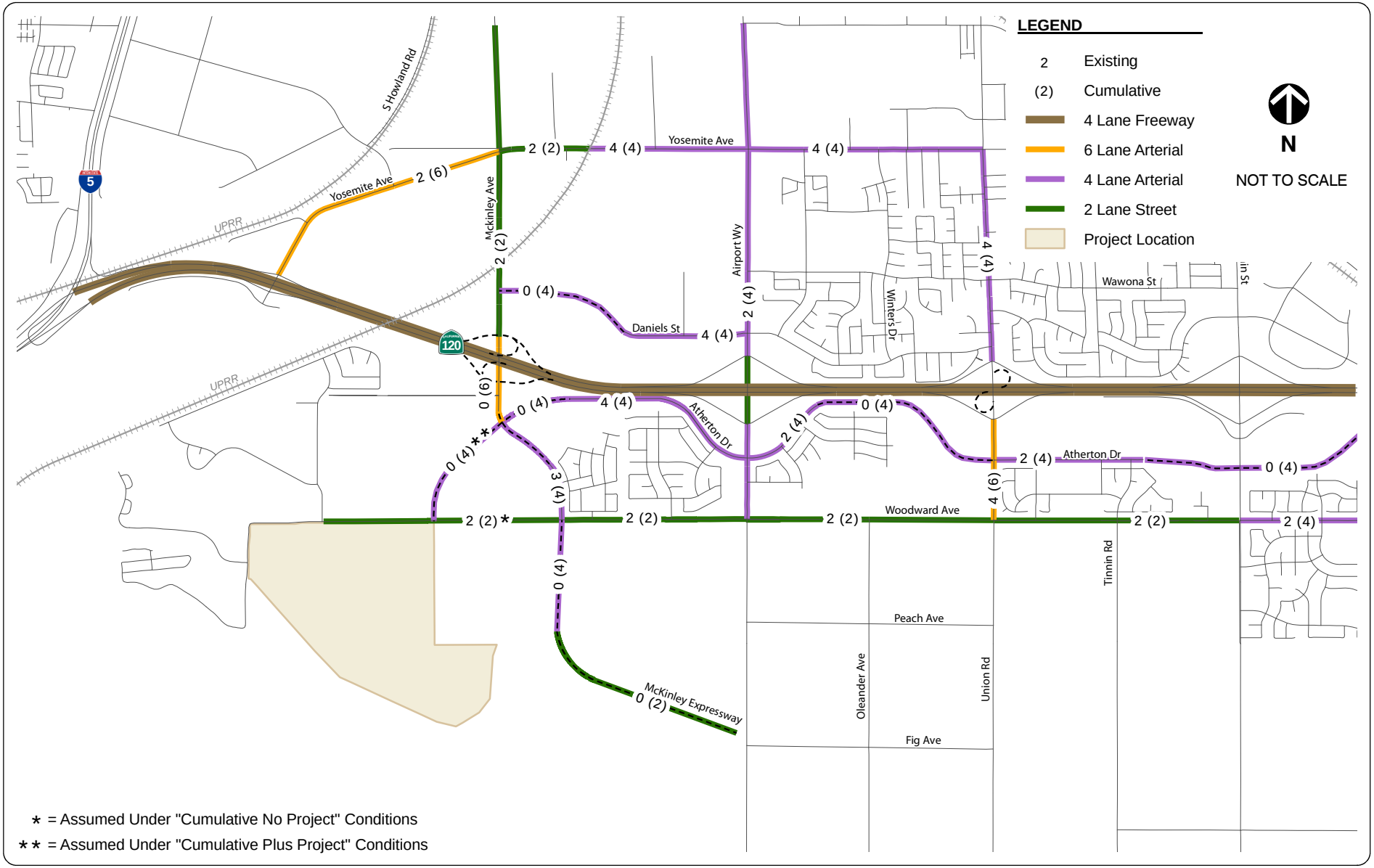


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PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING PLUS PROJECT CONDITIONS

FIGURE 6

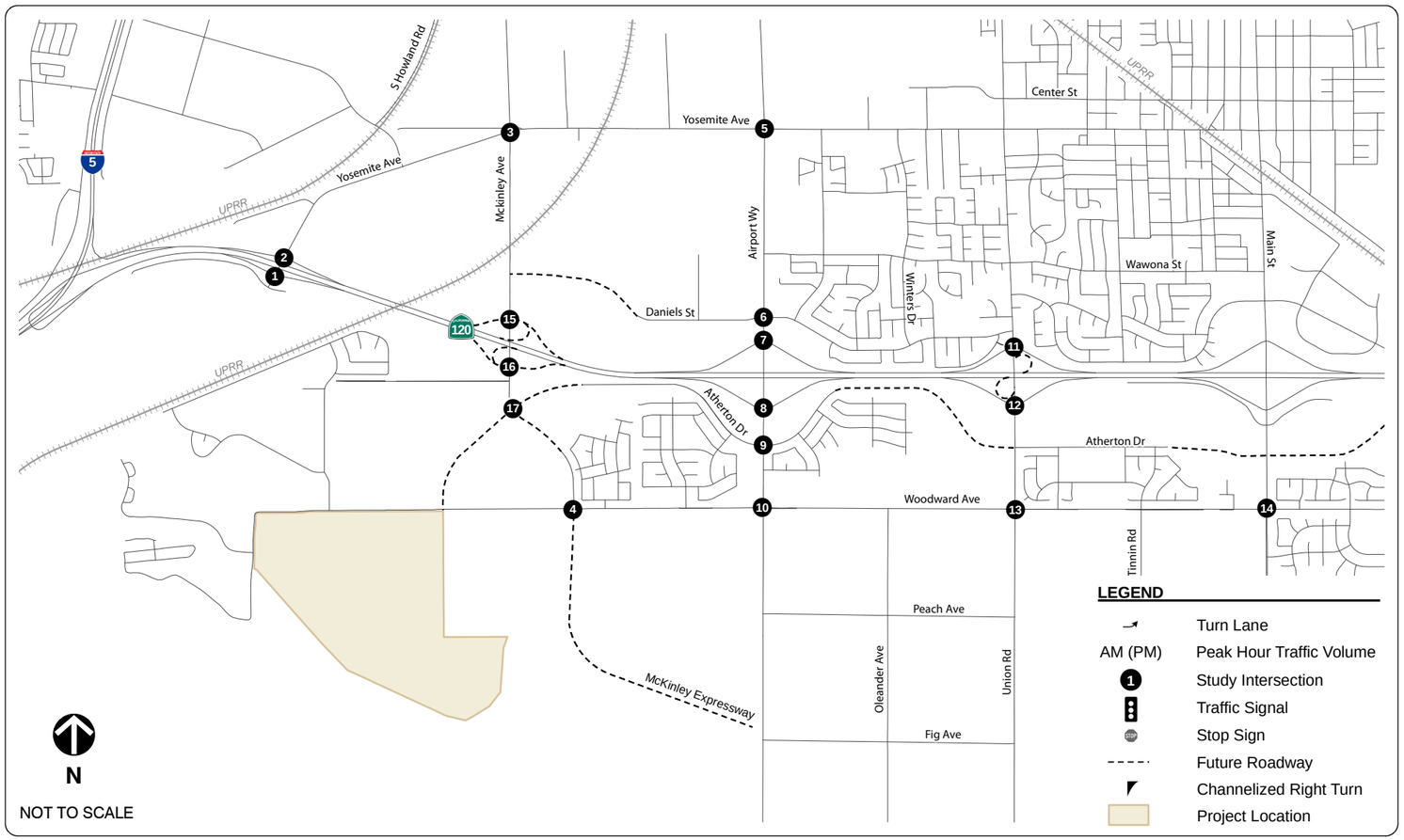


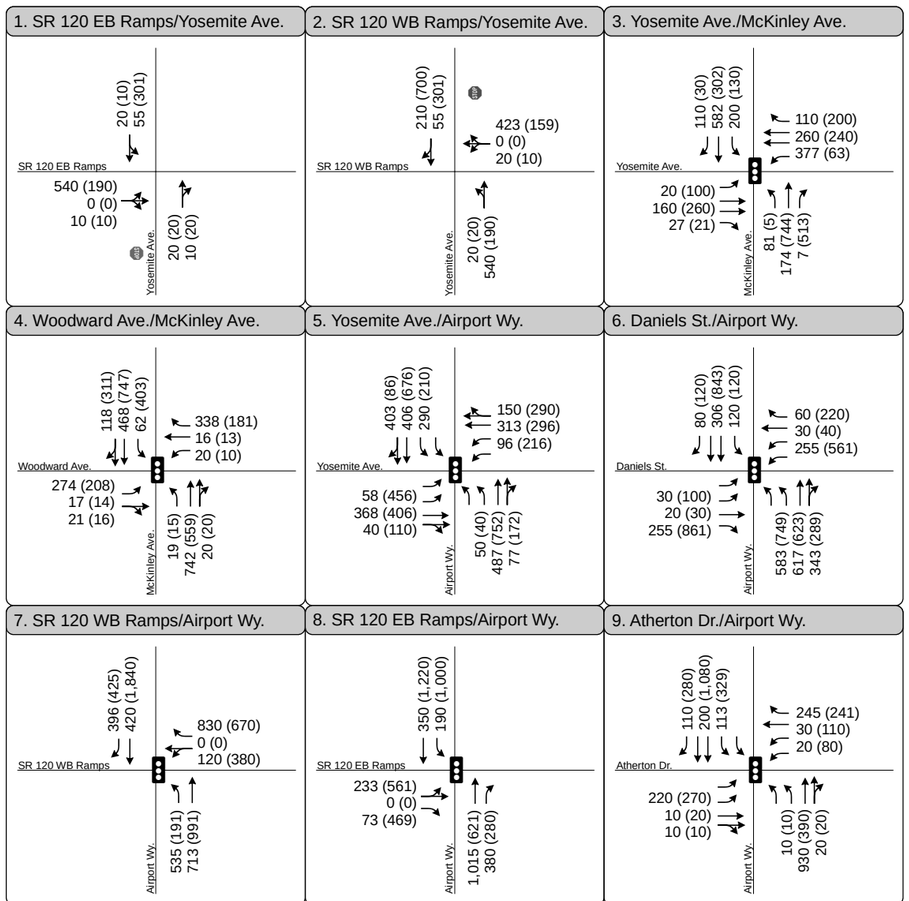
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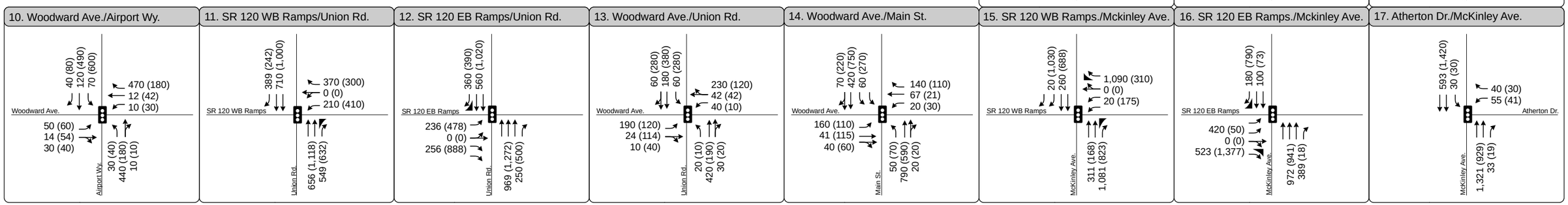
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CUMULATIVE ROADWAY SYSTEM

FIGURE 7





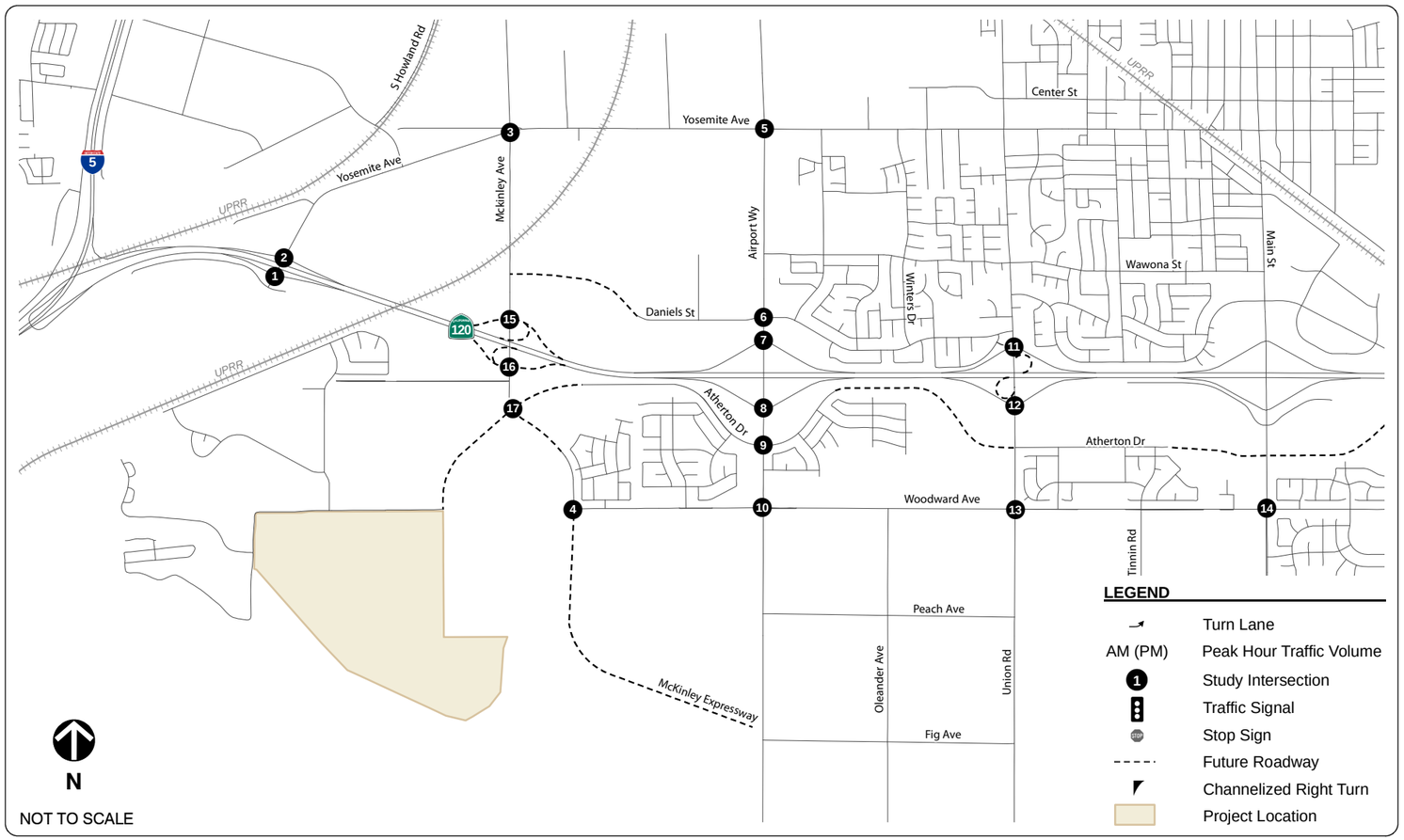


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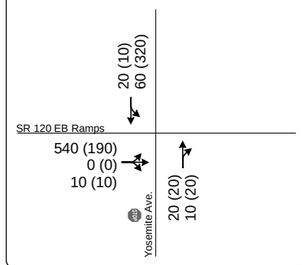
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PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - CUMULATIVE NO PROJECT CONDITIONS

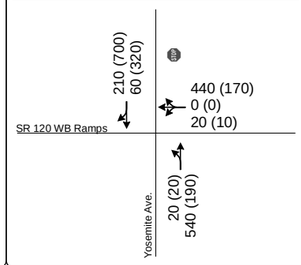
FIGURE 8



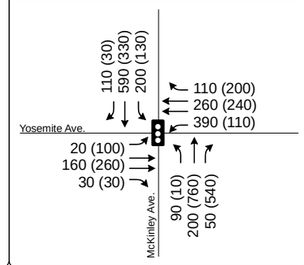
1. SR 120 EB Ramps/Yosemite Ave.



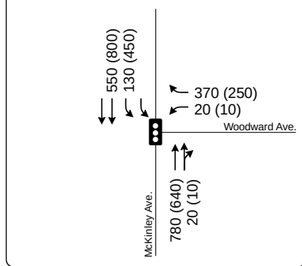
2. SR 120 WB Ramps/Yosemite Ave.



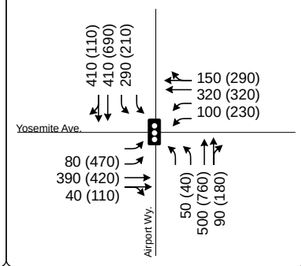
3. Yosemite Ave./McKinley Ave.



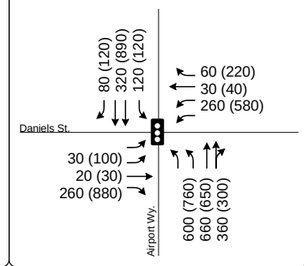
4. Woodward Ave./McKinley Ave.



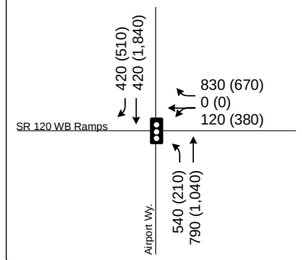
5. Yosemite Ave./Airport Wy.



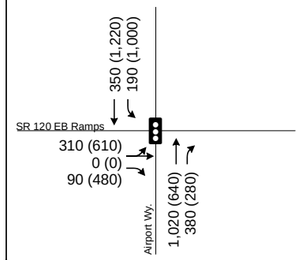
6. Daniels St./Airport Wy.



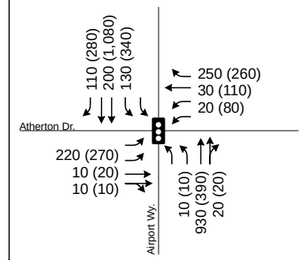
7. SR 120 WB Ramps/Airport Wy.



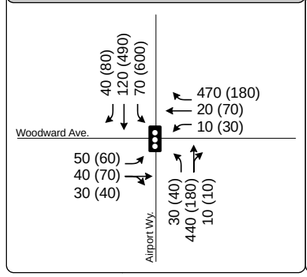
8. SR 120 EB Ramps/Airport Wy.



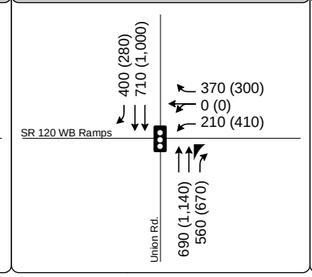
9. Atherton Dr./Airport Wy.



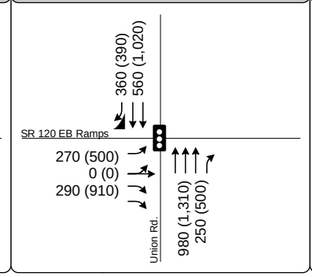
10. Woodward Ave./Airport Wy.



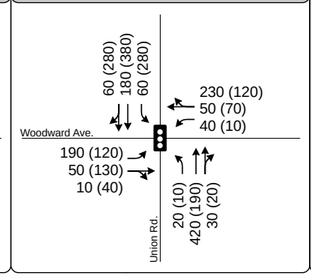
11. SR 120 WB Ramps/Union Rd.



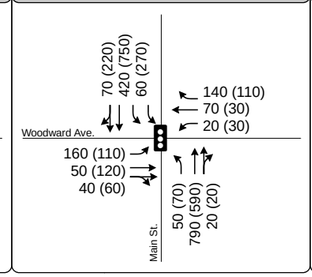
12. SR 120 EB Ramps/Union Rd.



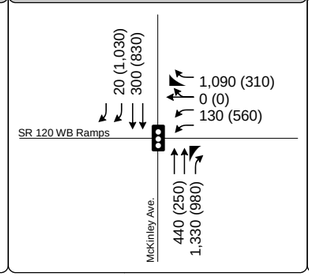
13. Woodward Ave./Union Rd.



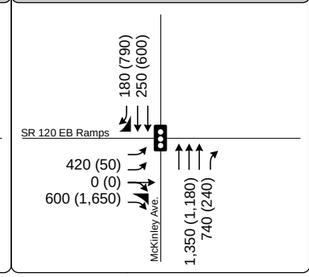
14. Woodward Ave./Main St.



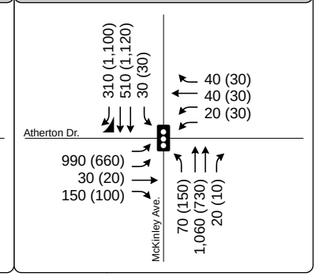
15. SR 120 WB Ramps./Mckinley Ave.



16. SR 120 EB Ramps./Mckinley Ave.



17. Atherton Dr./McKinley Ave.

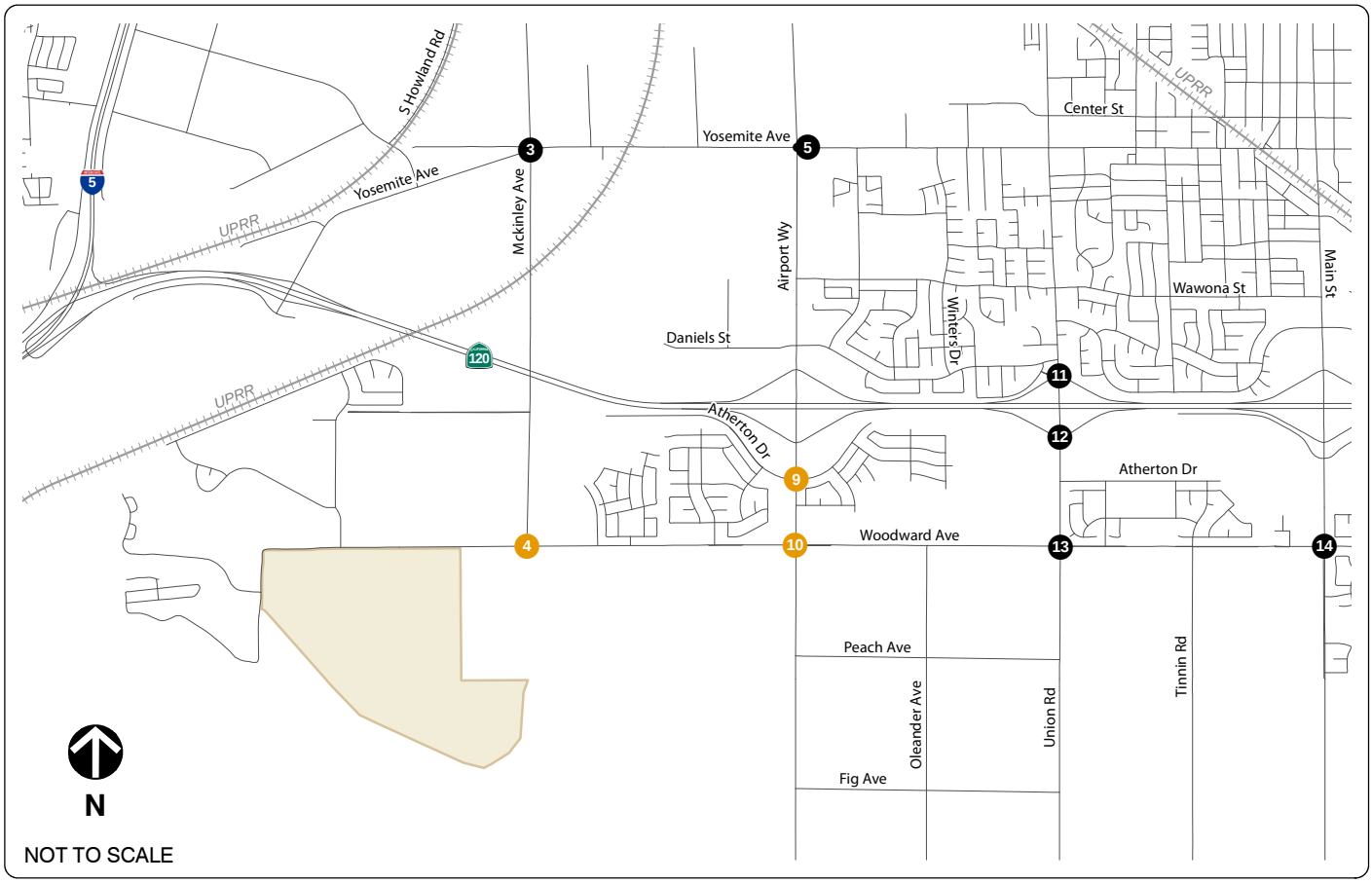


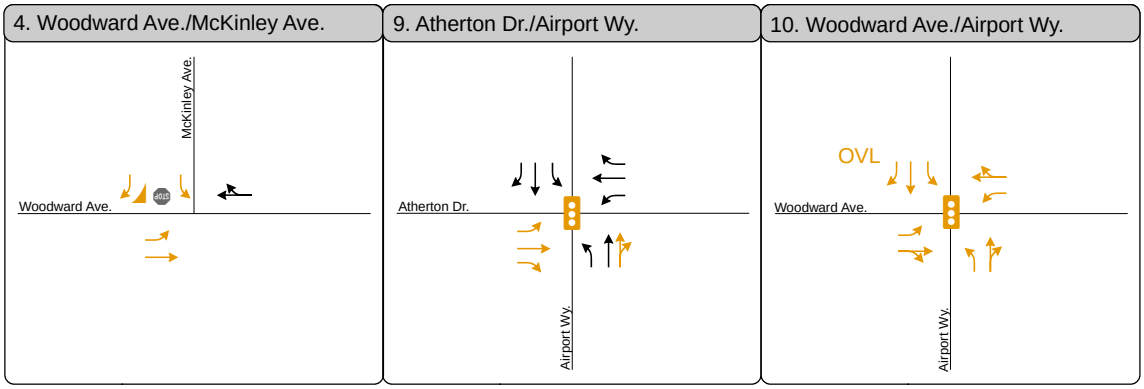
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PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS - CUMULATIVE PLUS PROJECT CONDITIONS

FIGURE 9





LEGEND

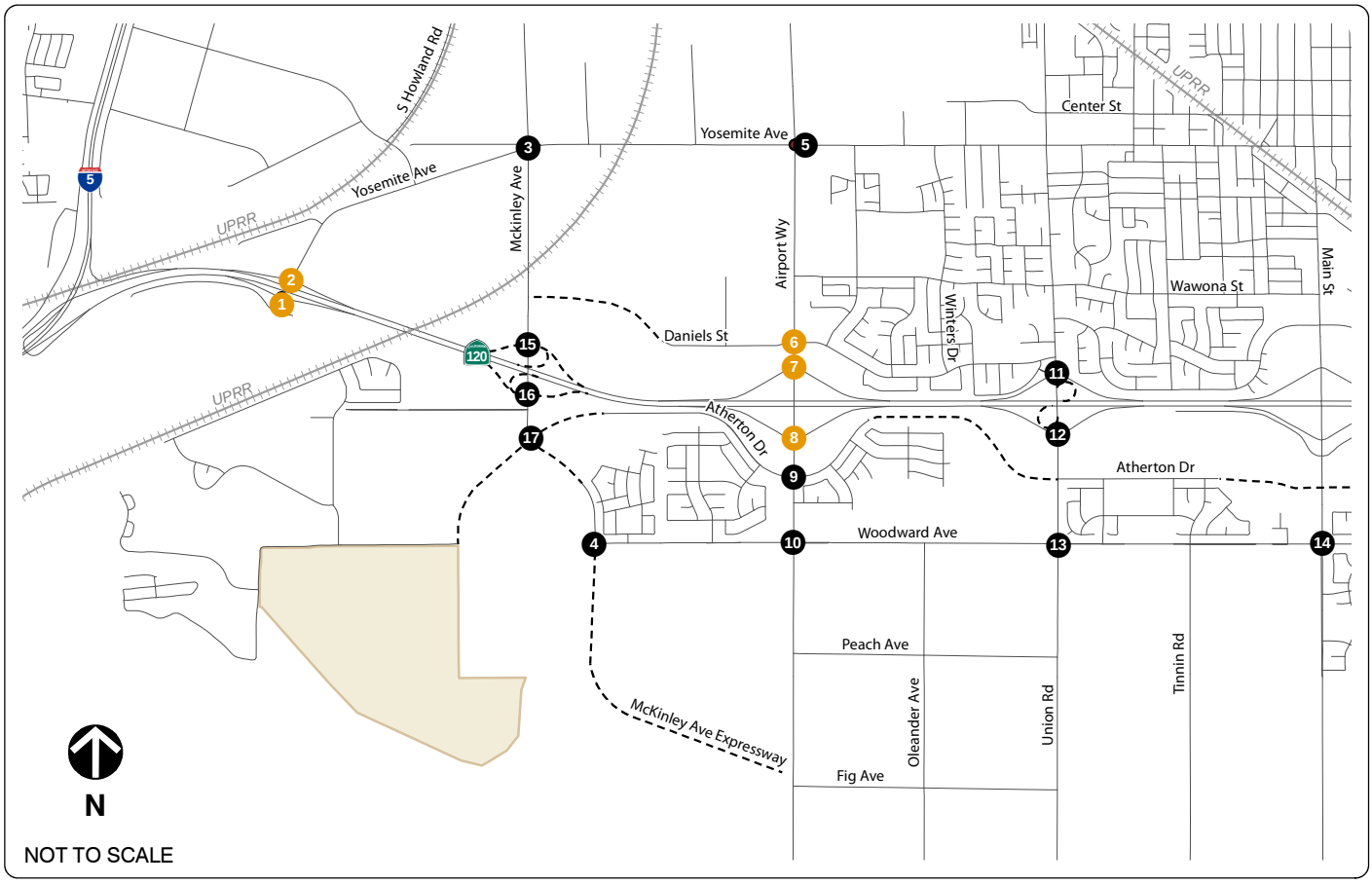
- Mitigated Intersection
- Mitigation Measure
- Study Intersection, No Mitigation Needed
- Future Roadway
- OVL — Right-Turn Overlap Arrow
- Turn Lane
- Traffic Signal
- Stop Sign
- Channelized Right Turn
- Project Location

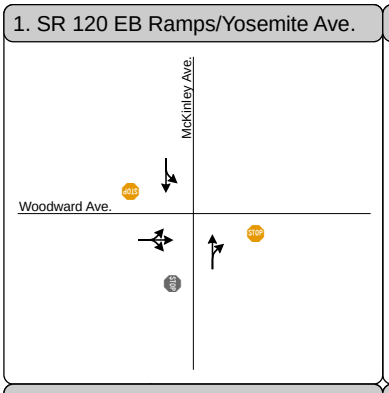
Notes:
1. Project specific mitigation at intersection 4 is the project's responsibility.
2. Project-specific mitigation at intersections 9 and 10 may consist either of applicant payment of PFIP fee and/or construction of required improvements by applicant.

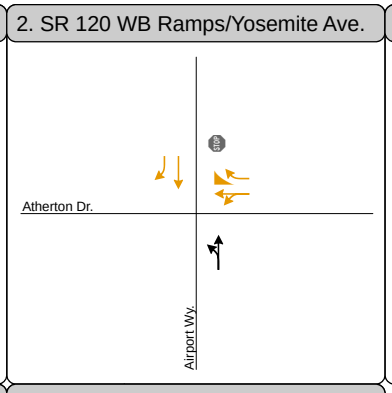
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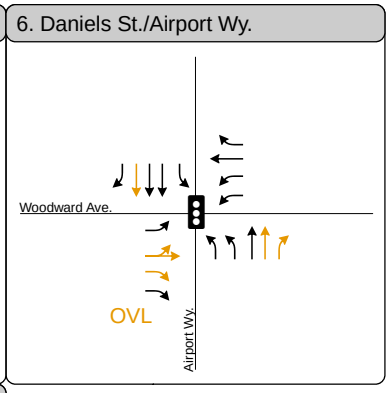
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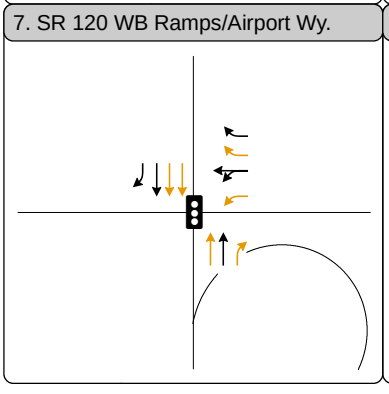
PROJECT-SPECIFIC INTERSECTION MITIGATIONS - FIGURE 10

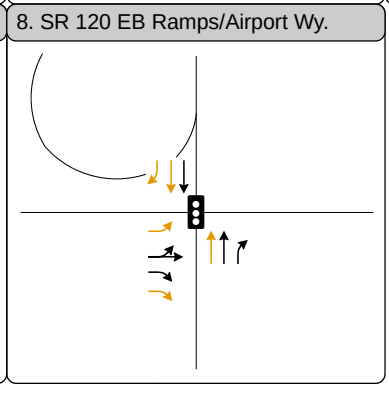












LEGEND

- Mitigated Intersection
- Mitigation Measure
- Study Intersection, No Mitigation Needed
- Future Roadway
- OVL — Right-Turn Overlap Arrow
- Turn Lane
- Traffic Signal
- Stop Sign
- Channelized Right Turn
- Project Location

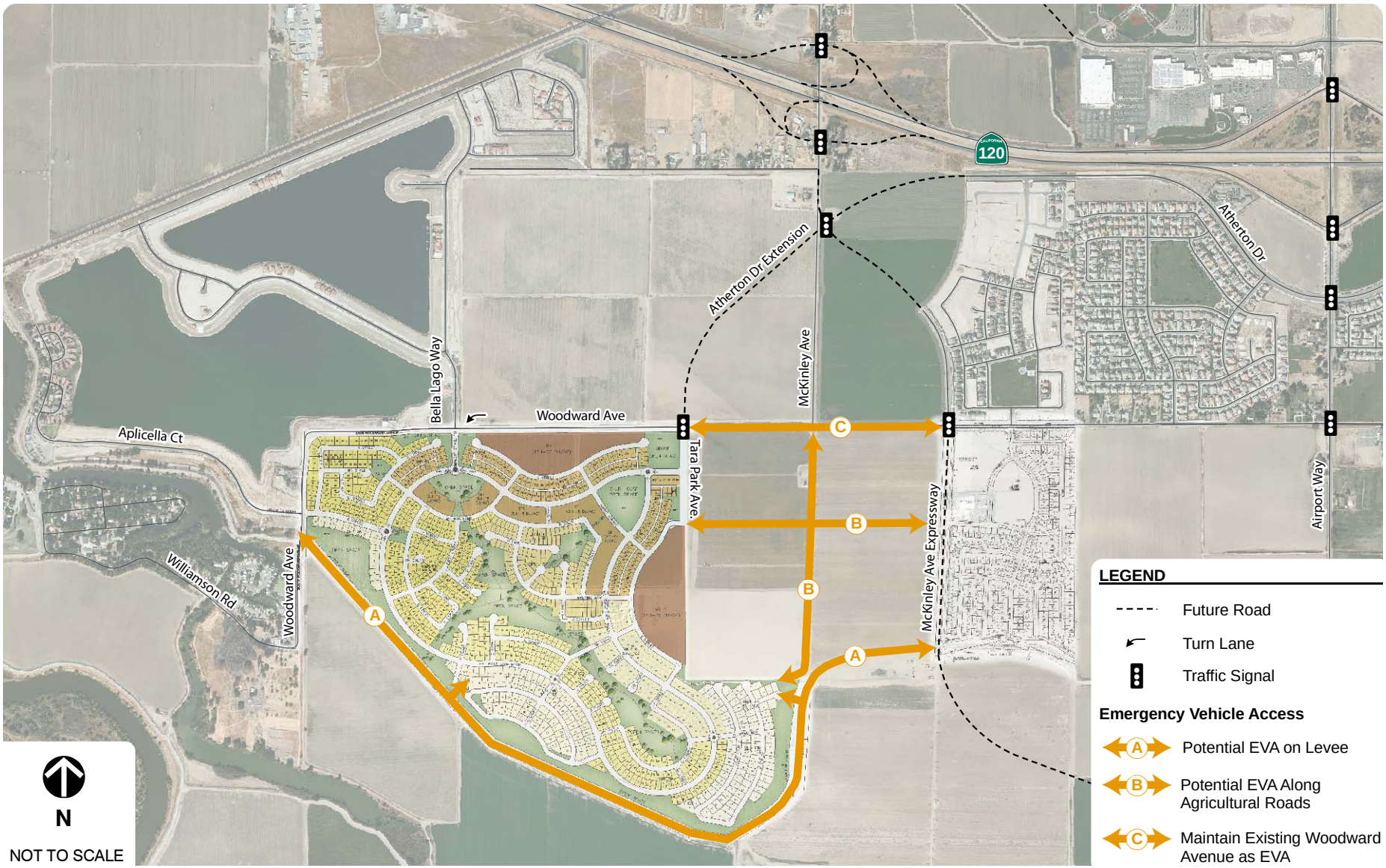
Note:
Cumulative mitigation consists of fair-share payment for needed improvements.

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CUMULATIVE PROJECT INTERSECTION MITIGATIONS

FIGURE 11



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PROJECT ACCESS CONSIDERATIONS

FIGURE 12