

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Alameda County Environmental Health Department (County)	Address: 1131 Harbor Bay Parkway, Alameda, CA 94502
Agency Caseworker: Dilan Roe	Case No.: RO0000456

Case Information

USTCF Claim No.: 5518	Global ID: T0600100908
Site Name: BP Station #11102	Site Address: 100 MacArthur Blvd., Oakland, CA 94610
Responsible Party 1: Conoco Phillips C/O Terry Grayson	Address: 76 Broadway Street, Sacramento, CA 95818
Responsible Party 2: H & Song Son Myong	Address: 100 MacArthur Blvd., Oakland, CA 94610
Responsible Party 3: BP/ARCO C/O Paul Supple	Address: PO Box 1257, San Ramon, CA 94583
Responsible Party 4: ExxonMobil C/O Jennifer Sedlachek	Address: 4096 Piedmont Avenue #194, Oakland, CA 94611
USTCF Expenditures to Date: \$193,619	Number of Years Case Open: 24

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600100908

Summary

The Low-Threat Underground Storage Tank (UST) Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Policy. This case meets all of the required criteria of the Policy. A summary evaluation of compliance with the Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Case Information (Conceptual Site Model)**. Highlights of the case follow:

An unauthorized leak was reported in October 1988 following the removal of an underground storage tank (UST). Approximately 15 yards of waste oil impacted soil were removed during the UST replacement activity in 1988. Five USTs were removed between 1988 and 1990. There are currently four USTs at this active commercial fueling facility. An unknown amount of contaminated soil was excavated in 1994 during the replacement of USTs. A total of 4 wells have been installed and monitored regularly since 1989. According to groundwater data, water quality objectives (WQOs) have been achieved for all constituents except for methyl tert-butyl ether (MTBE), and tert-butyl alcohol (TBA).

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there are no California Department of Public Health regulated supply wells or surface water bodies within 1,000 feet of the defined plume boundary. No other water supply wells have been identified within 1,000 feet of the defined plume boundary in files reviewed.

Water is provided to water users near the Site by the East Bay Municipal Utilities District. The affected groundwater is not currently being used as a source of drinking water, and it is highly unlikely that the affected groundwater will be used as a source of drinking water in the foreseeable future. Other designated beneficial uses of impacted groundwater are not threatened and it is highly unlikely that they will be considering these factors in the context of the site setting. Remaining petroleum hydrocarbon constituents are limited, stable and concentrations are decreasing. Corrective actions have been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- **General Criteria:** The case meets all eight Policy general criteria.
- **Groundwater Specific Criteria:** The case meets Policy Criterion 1 by Class 5. The Site would have met the Class 4 criteria except for one well having MTBE concentrations in excess of 1,000 µg/L. The regulatory agency determines that, based on an analysis of site specific conditions under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and WQO will be achieved within a reasonable time frame. The groundwater plume is less than 1,000 feet in length, and no municipal wells have been identified near the Site.
- **Vapor Intrusion to Indoor Air:** The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because Site is an active commercial petroleum fueling facility. In addition, the residual dissolved petroleum hydrocarbon plume is under a freeway exchange.
- **Direct Contact and Outdoor Air Exposure:** The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial land use. The concentration limits for a Utility Worker are not exceeded. There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

Objections to Closure and Responses

The County objects to case closure in its response to the Fund's Third 5-Year Review Recommendation (February 13, 2013) because:

- Based on the recurring concentration spikes in the historic groundwater data, the County is concerned that the source area(s) have not been adequately characterized and the cause(s), date(s), and type of release(s) not adequately addressed and has requested additional investigation.

RESPONSE: The extent of contamination is defined by the current monitoring well network. The Case meets the Policy criteria.

July 2013

- MTBE plume is undefined.
RESPONSE: The concentrations of MTBE in well MW-4 demonstrate a downward trend and water quality objectives will be reached within an acceptable time frame. In addition, it is impossible to determine if the source for the MTBE reported in MW-4 is from the subject site or from runoff from the extensive Interstate Highway exchange that surrounds the well.
- Preferential pathways are undefined.
RESPONSE: The extent of the contamination is adequately defined and meets the Policy criteria. In addition, multiple sources of MTBE may be present due to numerous highway lanes and subsequent run off.

Determination

Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

Recommendation for Closure

Based on available information, residual petroleum hydrocarbons at the Site do not pose a significant risk to human health, safety, or the environment, and the case meets the requirements of the Policy. Accordingly, the Fund Manager recommends that the case be closed. The State Water Board is conducting public notification as required by the Policy. Alameda County has the regulatory responsibility to supervise the abandonment of monitoring wells.

Lisa Babcock

Lisa Babcock, P.G. 3939, C.E.G. 1235

7/16/13

Date

Prepared by: Abdul Karim Yusufzai

ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW

The case complies with the State Water Resources Control Board policies and state law. Section 25296.10 of the Health and Safety Code requires that sites be cleaned up to protect human health, safety, and the environment. Based on available information, any residual petroleum constituents at the site do not pose significant risk to human health, safety, or the environment.

The case complies with the requirements of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.¹

<p>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations? The corrective action provisions contained in Chapter 6.7 of the Health and Safety Code and the implementing regulations govern the entire corrective action process at leaking UST sites. If it is determined, at any stage in the corrective action process, that UST site closure is appropriate, further compliance with corrective action requirements is not necessary. Corrective action at this site has been consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations and, since this case meets applicable case-closure requirements, further corrective action is not necessary, unless the activity is necessary for case closure.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>If so, was the corrective action performed consistent with any order?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p>General Criteria General criteria that must be satisfied by all candidate sites:</p> <p>Is the unauthorized release located within the service area of a public water system?</p> <p>Does the unauthorized release consist only of petroleum?</p> <p>Has the unauthorized (“primary”) release from the UST system been stopped?</p> <p>Has free product been removed to the maximum extent practicable?</p> <p>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

¹ Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.
http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf

<p>Has secondary source been removed to the extent practicable?</p> <p>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</p> <p>Nuisance as defined by Water Code section 13050 does not exist at the site?</p> <p>Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria:</p> <p>1. Groundwater: To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:</p> <p>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</p> <p>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?</p> <p>If YES, check applicable class: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 5</p> <p>For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p>2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies.</p> <p>Is the site an active commercial petroleum fueling facility? Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.</p> <p>a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4? If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

<p>b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?</p> <p>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p>3. Direct Contact and Outdoor Air Exposure: The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c).</p> <p>a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?</p> <p>b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?</p> <p>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

ATTACHMENT 2: SUMMARY OF BASIC CASE INFORMATION (Conceptual Site Model)

Site Location/History

- This Site is located 100 MacArthur Boulevard in Oakland and is an active commercial petroleum fueling facility.
- The Site is bounded by residences to the north and east, Oakland Avenue to the southeast, and MacArthur Boulevard and Interstate 580 with associated on and off ramps (13 lanes of traffic in the downgradient groundwater flow direction) to the south and west. The area surrounding the Site is mixed commercial and residential.
- Site map showing the location of the current and former USTs, monitoring wells and groundwater level contours is provided at the end of this closure review summary (Arcadis, 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: October 1988.
- Status of Release: USTs replaced.
- Free Product: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	280/550	Waste Oil	Removed	September 1988
2	6,000	Gasoline	Removed	1990
3	10,000	Gasoline	Removed	1990
4	12,000	Gasoline	Removed	1990
5	1,000	Waste Oil	Removed	1990
6	6,000	Gasoline	Active	--
7	10,000	Gasoline	Active	--
8	12,000	Gasoline	Active	--
9	1,000	Waste Oil	Active	--

Receptors

- GW Basin: Santa Clara Valley – East Bay Plain.
- Beneficial Uses: The Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) Basin plan lists: Municipal and Domestic Supply.
- Land Use Designation: Aerial photograph available on GeoTracker show the land use is mixed commercial and residential upgradient of the Site and an extensive freeway exchange downgradient.
- Public Water System: East Bay Municipal Utilities District.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by the California Department of Public Health within 1,000 feet of the defined plume. No other water supply wells were identified within 1,000 feet of the defined plume in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 1,000 feet of the defined plume.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed gravel, sand, silt and clay.
- Maximum Sample Depth: 36 feet below ground surface (bgs) in borehole SB-4A.
- Minimum Groundwater Depth: 8.57 feet bgs at monitoring well MW-1.
- Maximum Groundwater Depth: 15.50 feet bgs at monitoring well MW-3.
- Current Average Depth to Groundwater: Approximately 12 feet bgs.
- Saturated Zones(s) Studied: Approximately 9 - 32 feet bgs.
- Groundwater Flow Direction: Predominantly west to southwest with an average gradient of 0.04 feet/foot (August 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (08/15/2012)
MW-1	Oct 1989	12-32	12.88
MW-2	Oct 1989	12-32	12.93
MW-3	Oct 1989	12-32	11.68
MW-4	Nov 2010	4-20	12.51

Remediation Summary

- Free Product: None reported in GeoTracker.
- Soil Excavation: Approximately 15 yards of waste oil impacted soil were removed during the UST replacement activity in 1988. An unknown amount of petroleum contaminated soil was excavated in 1994 during the replacement of USTs.
- In-Situ Soil/Groundwater Remediation: None reported.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg and (date)]	Maximum 5-10 feet bgs [mg/kg and (date)]
Benzene	0.006 (10/25/89)	0.008 (10/25/89)
Ethylbenzene	3.0 (07/14/05)	2.4 (07/14/05)
Naphthalene	NA	NA
PAHs	NA	NA

NA: Not Analyzed, Not Applicable or Data Not Available
 mg/kg: milligrams per kilogram, parts per million
 <: Not detected at or above stated reporting limit
 PAHs: Polycyclic aromatic hydrocarbons

Most Recent Concentrations of Petroleum Constituents in Groundwater

Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	08/15/2012	<50	<0.5	<0.5	<0.5	<1	10	8.6
MW-2	08/15/2012	<250	<2.5	<2.5	<2.5	<5	450	4,400
MW-3	08/15/2012	<1,000	<10	<10	<10	<20	3,500	420
MW-4	08/15/2012	<50	<0.5	<0.5	<0.5	<1	44	6.2
WQOs	-	-- ^a	1	150	700	1,750	5 ^b	1,200 ^c

NA: Not Analyzed, Not Applicable or Data Not Available

µg/L: micrograms per liter, parts per billion

<: Not detected at or above stated reporting limit

TPHg: Total petroleum hydrocarbons as gasoline

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Regional Water Board Basin Plan

^a: The Regional Water Board does not have numeric values for water quality objectives for TPHg

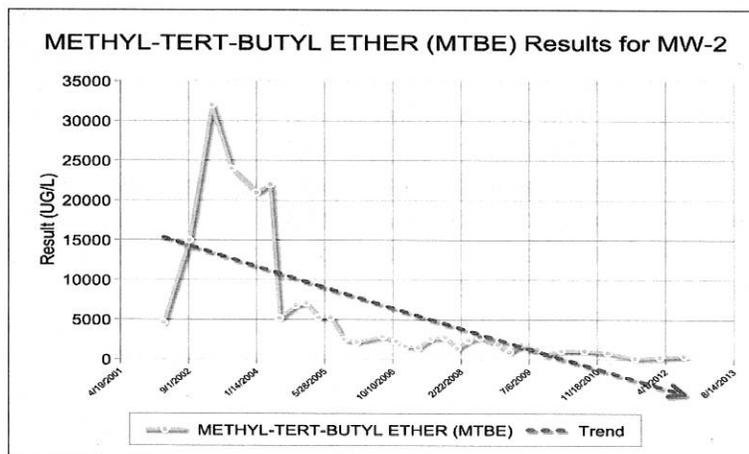
^b: Secondary maximum contaminant level (MCL)

^c: California Department of Public Health, Response Level

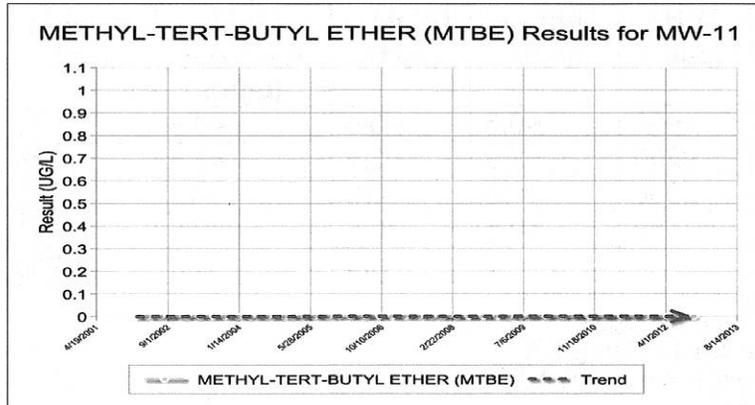
Groundwater Trends

There are 23 years of regular groundwater monitoring data for this case. MTBE trends are shown below: Source Area (MW-2), Near Downgradient (MW-4), and Far Downgradient (MW-11 [Unocal #1871]). Unocal well MW-11 is located approximately 400 feet southwest of MW-2.

Source Area Well



Downgradient Well (Adjacent UST Site Well, not shown on figure)



2

Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <1,000 feet long.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: Groundwater Specific Criteria: The case meets Policy Criterion 1 by Class 5. The Site would have met the Class 4 criteria except for one well having MTBE concentrations in excess of 1,000 µg/L. The regulatory agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and WQO will be achieved within a reasonable time frame. The groundwater plume is less than 1,000 feet in length; no municipal wells have been identified near the Site.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because Site is an active commercial petroleum fueling facility. In addition, the residual dissolved petroleum hydrocarbon plume is under a freeway exchange.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial land use. The concentration limits for a Utility Worker are not exceeded. There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

**State Water Resources Control Board
Underground Storage Tank Cleanup Fund
BUDGET EXPENDITURES SUMMARY**

Revised 11/08/2011

Priority Class: B Claim No: 8383
 Claimant Name: BANNER PUBLISHING CORP, ASSIGNEE

Region: 4
 Site Address: 1222 ANAHEIM ST E, WILMINGTON

Budget Information		
Fiscal Year	Category	Amt. Approved
12/13	CAP/REM	175,000.00

Work Phases	Previous Expenditures	Current Expenditures	YTD Expenditures
Project Management	1,170.00	3,212.50	4,382.50
Site Assessment	0.00	0.00	0.00
Groundwater Monitoring	0.00	0.00	0.00
Interim Remedial Action	0.00	0.00	0.00
Remedy Selection	0.00	0.00	0.00
Remedial Implementation	0.00	0.00	0.00
Remedial System O & M	13,460.96	26,504.70	39,965.66
Post Remediation Site Closure	0.00	0.00	0.00
TOTAL	14,630.96	29,717.20	44,348.16
	Remaining Budget		130,651.84

Reimbursement Request Information	
Payment No	36
Date Received	03/05/13
Amt. Requested	33,351.00
Costs Incurred	
Final Payment	N

CONTACT INFORMATION	
Reviewer Name	William Wong
eMail Address	wwong@waterboards.ca.gov
Telephone No	(916) 341-5812
Review Cmpd.	

NOTE: Review the Payment Summary and Footnotes for information regarding this payment and any other specific information about the claim.

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