CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

December 23, 2013

Ms. Dilan Roe
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94602

**PRELIMINARY REVIEW SUMMARY REPORT FOR CLAIM NUMBER 5641;
BP #11109, 4280 FOOTHILL BLVD, OAKLAND, CA**

The UST Cleanup Fund (Fund) has completed our review of Alameda County Environmental Health Department case number RO0000426. The Review Summary Report for this case is enclosed for your information and comment. Please note that the Fund's recommendations are based on review of information contained in the Fund's case files, data currently in the GeoTracker database and any other sources of information that were readily available to Fund staff at the time the review was conducted. Consequently, they may not reflect historical information that has not been uploaded to the GeoTracker database or available in the Fund's case files and any data that has been recently submitted to your office.

The Fund requests that the County staff notify the Fund within 45 days from the date of this letter as to whether you agree or disagree with our recommendations for this case. If you agree with our recommendation, we request that you provide the Fund with an estimated timeframe to either implement the recommendations for additional corrective action or for closing this case. If you do not agree with our recommendations, we request that you provide the Fund with a summary of the reasons for disagreeing and/or impediments to implementing the recommendations for additional corrective action or closing this case. Responses to the Fund may be provided by e-mail, letter or a copy of correspondence to the claimant, if the correspondence addresses all the information requested by the Fund.

Fund staff will be sending copies of all completed Review Summary Reports to claimants 45 days from the date of this letter unless the County notifies the Fund that they wish to discuss this case prior to transmittal to the claimant. If you or your staff has any questions or concerns on specific reports that you would like to discuss with the Fund prior to transmittal of the report to the claimant, please contact us within this period. The Fund reviewer name and telephone number are included on the last page of the summary Report.

Sincerely,

Robert Trommer
Senior Engineering Geologist
Chief, Technical Review Unit
Underground Storage Tank Cleanup Fund

Encl.: Claim 5641 – 3rd Review
cc: Karel Detterman, County via email

State Water Resources Control Board

REVIEW SUMMARY REPORT – ADDITIONAL WORK
THIRD REVIEW – DECEMBER 2013

Agency Information

Agency Name: Alameda County Environmental Health (County)	Address: 1131 Harbor Bay Parkway Alameda, CA 94602
Agency Caseworker: Karel Detterman	Case No.: RO0000426

Case Information

USTCF Claim No.: 5641	GeoTracker Global ID: T0600100217
Site Name: BP #11109	Site Address: 4280 Foothill Oakland, CA 94601
Responsible Party 1: ConocoPhillips Attn: Terry Grayson	Address: 76 Broadway Street Sacramento, CA 95818
Responsible Party 2: Khalid and Ramona Usman	Address: 3670 Ralston Avenue Hillsborough, CA 94010
Responsible Party 3: Paul Supple	Address: PO Box 1257 San Ramon, CA 94583
USTCF Expenditures to Date: $589,052	Number of Years Case Open: 23

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600100217

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)** and **Attachment 3: Historic Recommendations.** Highlights of the case follow:

This case is an active commercial petroleum fueling facility. An unauthorized release was reported in July 1990 following a site investigation. In 1986 a waste oil UST was removed and in 1990 three gasoline USTs were removed and replaced. A total of 1,950 cubic yards of impacted soil were removed and disposed offsite during the UST removal process. Groundwater extraction and treatment operated between 1994 and 1995 treating approximately 344,000 gallons of impacted groundwater. Dual phase extraction was tested in 2012 however was found not viable. Free product recovery has been conducted since 1991 recovering 315 pounds of product and water. Since 1990, twelve groundwater monitoring wells have been installed and regularly monitored. According to groundwater data, water quality objectives has not been achieved for all constituents and measurable free product is currently present in three monitoring wells.

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there are no supply wells regulated by the California Department of Public Health

or surface water bodies within 250 feet of the defined plume boundary. No other water supply wells have been identified within 250 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 and stable and concentrations are decreasing. Free product remains in three monitoring wells that appear to be recoverable.

Rationale for Closure under the Policy

- General Criteria: The case does not meet all eight Policy general criteria. Free product remains in three monitoring wells that appear to be recoverable.
- Groundwater Specific Criteria: The case fails, because recoverable free product is present
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility and the release characteristics do not pose an unacceptable health risk.
- 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 use, and 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.

Recommendation

The Fund recommends that the County direct the Responsible Party to continue to recover free product. Additionally, perform monitoring of all monitoring wells (except those with measurable free product) and analyze the samples for TPHg, benzene, toluene, ethylbenzene, xylene and the fuel oxygenates.

Pat G. Cullen 12/23/13

Pat G. Cullen, P.G. Date
Senior Geologist
Technical Review Unit
(916) 341-5735

Robert Trommer 12/23/13

Robert Trommer, C.H.G. Date
Senior Engineering Geologist
Chief, Technical Review Unit
(916) 341-5684

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]

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.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?	☒ Yes ☐ No
If so, was the corrective action performed consistent with any order?	☐ Yes ☐ No ☒ NA
General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☐ Yes ☒ No ☐ NA
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No

[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

Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Nuisance as defined by Water Code section 13050 does not exist at the Site?	☒ Yes ☐ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
Media-Specific Criteria Candidate sites must satisfy all three of these media-specific criteria: **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:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: ☐ **1** ☐ **2** ☒ **3** ☐ **4** ☐ **5**	☒ Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA
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.	
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.	☒ Yes ☐ No
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: ☐ **1** ☐ **2** ☐ **3** ☐ **4**	☐Yes ☐ No ☒ NA

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?	☐ Yes ☐ No ☒ NA
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?	☐ Yes ☐ No ☒ NA
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).	
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)?	☒ Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA
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?	☐ Yes ☐ No ☒ NA

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

Site Location/History

- This Site is located on the north corner of the intersection of Foothill Boulevard and High Street, which are at approximately 45 degrees angles to north, and is an active commercial petroleum fueling facility.
- The Site is bounded on the north by a church and a residential building, to the east a high school football field, on the south and west are active commercial fueling facilities.
- Site maps showing the location of the USTs, monitoring wells, and groundwater level contours are provided at the end of this review summary (Arcadis, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: July 1990.
- Status of Release: USTs removed and replaced.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	550	Waste Oil	Removed	July 1986
2	6,000	Gasoline	Removed	September 1990
3	8,000	Gasoline	Removed	September 1990
4	10,000	Gasoline	Removed	September 1990
5-7	10,000	Gasoline	Active	--
8	1,000	Waste Oil	Active	--

Receptors

- GW Basin: Santa Clara Valley – East Bay Plain.
- Beneficial Uses: The San Francisco Bay, Regional Water Quality Control Board (Regional Water Board) Basin Plan lists agricultural, municipal, domestic, industrial service and process supply.
- Land Use Designation: Aerial photograph available on GeoTracker indicates mixed residential and commercial land use in the vicinity of the Site.
- Public Water System: East Bay Municipal Utility 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 boundary. No other water supply wells were identified within 1,000 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 1,000 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded fine grained soils consisting of predominantly clay with varying amounts of sand, silt, and gravel.
- Maximum Sample Depth: 29 feet below ground surface (bgs).
- Minimum Groundwater Depth: 2.32 feet bgs at monitoring well MW-2.
- Maximum Groundwater Depth: 18.58 feet bgs at monitoring well MW-2.
- Current Average Depth to Groundwater: Approximately 11 feet bgs.
- Saturated Zones(s) Studied: Approximately 7-40 feet bgs.

- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Southwest at a gradient of 0.03 feet per foot (March 2013).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (9/20/2013)
MW-1	Destroyed September 1990		
MW-2	April 1989	20-35	Dry
MW-3	April 1989	20-35	11.40
MW-4	January 1990	20-30	15.69
MW-5	October 1991	20-35	10.26
MW-6	October 1991	25-40	16.02
MW-7	October 1991	22-37	11.50
MW-8	October 1991	22-37	13.88
MW-9	October 1991	22-32	10.91
MW-10	March 2009	7-20	10.50
MW-11	March 2009	7-20	10.55
MW-12	March 2009	7-20	10.92

Remediation Summary

- Free Product: Historically, wells MW-5, MW-10 and MW-12 had free product recovery between 1991 through 1993. In March 2013, free product was observed in wells MW-5, MW-10 and MW-12 at thicknesses of 0.02, 0.01 and 0.04 feet, respectively, after several months of focused product recovery. Currently absorbent socks are in monitoring wells MW-5, MW-10 and MW-12 to remove free product. (Arcadis, October 2013)
- Soil Excavation: In September 1990, approximately 1,950 cubic yards of affected soil was excavated and removed from the Site. The over excavation was extended to a depth of 16 feet and back filled with imported material.
- In-Situ Soil /Groundwater Remediation: Groundwater extraction and treatment occurred between 1994 and 1995 extracting 344,650 gallons of impacted water.
  A seven day dual phase extraction pilot test was conducted in July 2012. Approximately 7,200 gallons of water and 238 pounds of petroleum hydrocarbons recovered.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg (date) sample location/depth]	Maximum 5-10 feet bgs [mg/kg and (date) sample location/depth]
Benzene	0.0010 (10/16/90) D5/4'	0.054 (10/16/90) D4/6'
Ethylbenzene	0.045 (10/16/90) D5/4'	0.046 (10/16/90) D4/6'
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

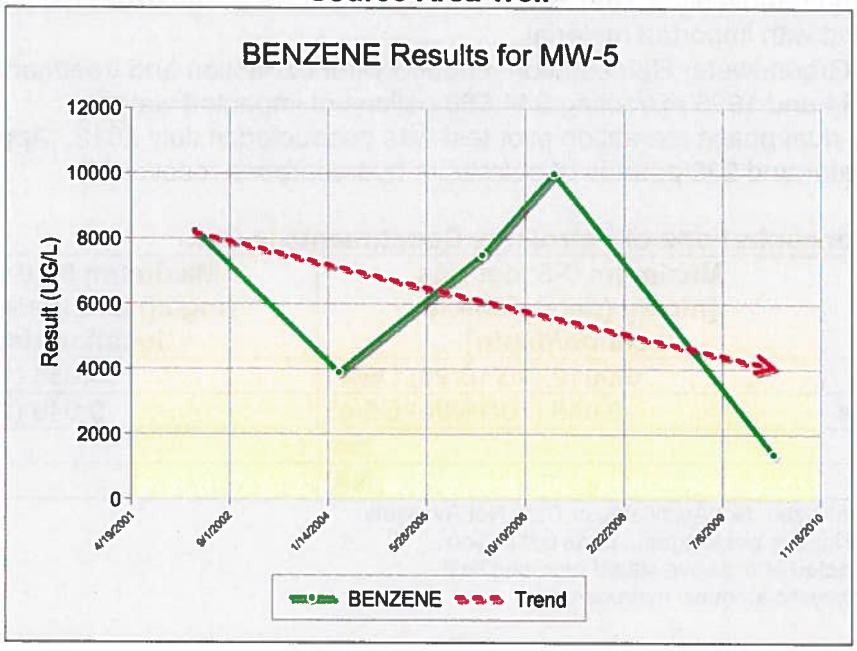
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-3	9/16/2010	<50	<0.5	<0.5	<0.5	<1	4.1 [c]	<4
MW-4	9/5/2012	830 [c]	<0.5	<0.5	<0.5	<1	21 [c]	18
MW-5	3/23/2010	67,000	**1,400**	**380**	620	1,800	<5	<40
MW-6	3/20/2013	<50 [c]	<0.5 [c]	<0.5 [c]	<0.5 [c]	<1 [c]	2.4 [c]	<4 [c]
MW-7	9/20/2013	580 [c]	<0.5 [c]	<0.5 [c]	<0.5 [c]	<1 [c]	2.3 [c]	<10 [c]
MW-8	9/16/2010	<50	<0.5	<0.5	<0.5	<1	<0.5	<4
MW-9	9/7/2012	830	16	1.3	0.66	1.4	3	4
MW-10	3/23/2010	61,000	**7,000**	**5,300**	**2,800**	**12,000**	**<800**	<100
MW-11	9/20/2013	10,000 [c]	**120** [c]	130 [c]	320 [c]	720 [c]	<10 [c]	<200 [c]
MW-12	3/23/2010	39,000	**4,800**	**1,000**	**3,100**	**6,400**	**<25**	<200
WQOs		--	**1**	**150**	**700**	**1,750**	**5** [a]	**1,200** [b]

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
--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg
[a]: Secondary maximum contaminant level (MCL)
[b]: California Department of Public Health, Response Level
[c]: A partial suite of constituents were reported and only select wells were sampled during the 9/20/2013 event.

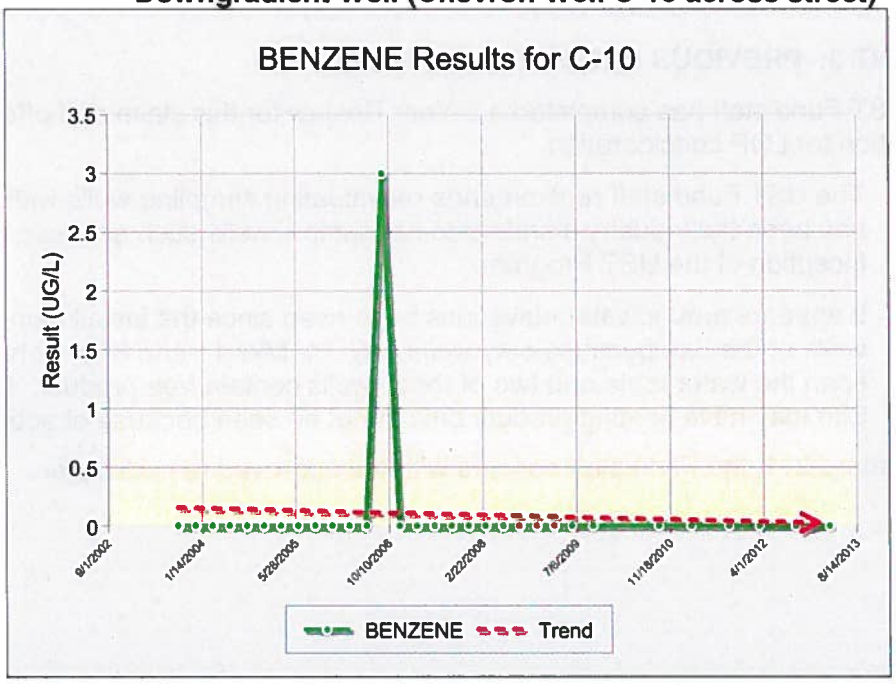
Groundwater Trends

- Since 1989, twelve groundwater monitoring wells have been installed and regularly monitored. Benzene trends of select wells are shown below:

Source Area Well



Downgradient Well (Chevron Well C-10 across street)



Evaluation of Current Risk

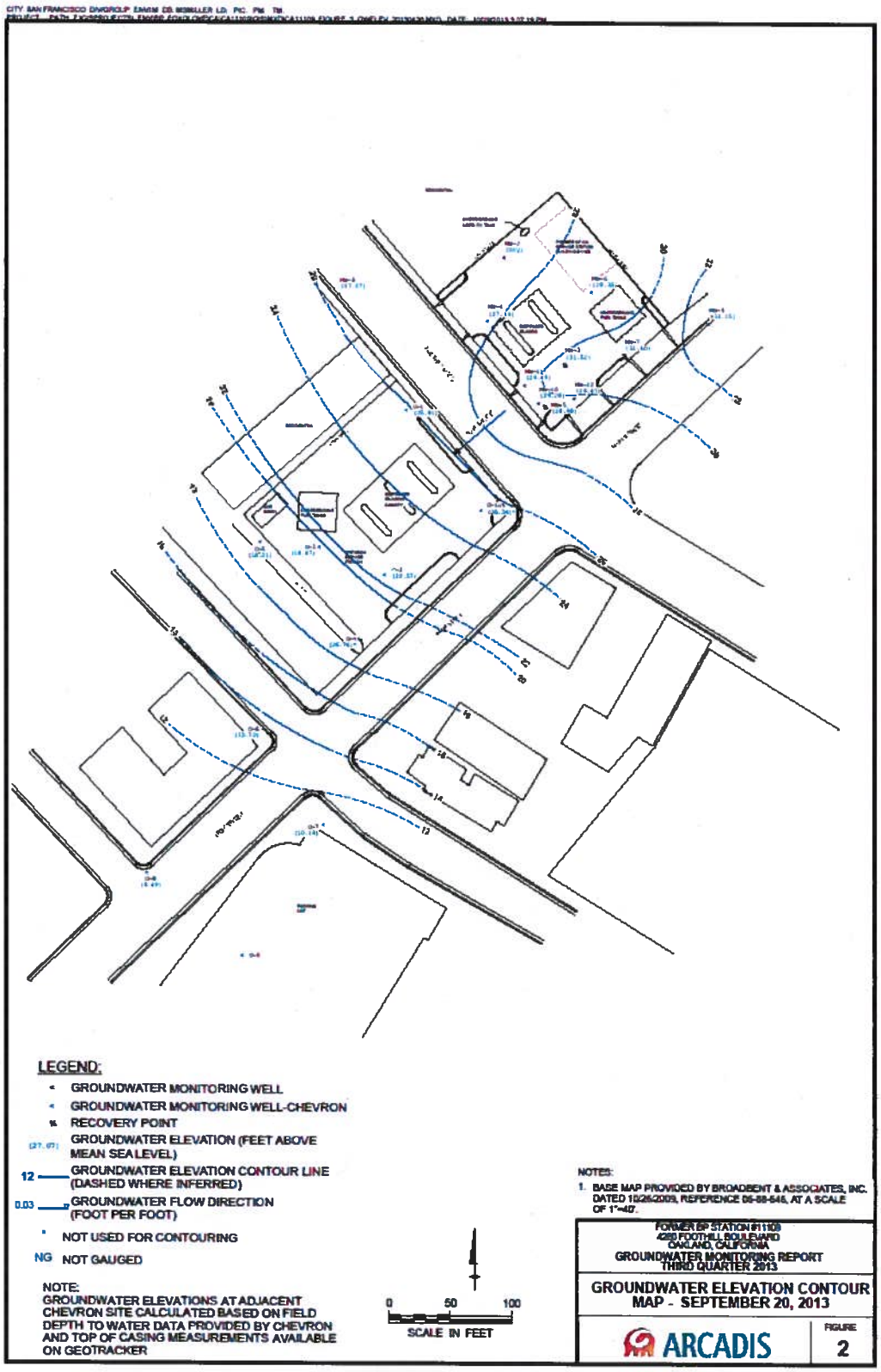
- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 feet.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Specific Criteria: The case fails, because recoverable free product is present
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility and the release characteristics do not pose an unacceptable health risk.
- 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 use, and 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.

ATTACHMENT 3: PREVIOUS RECOMMENDATIONS

2010 The UST Fund staff has completed a 5-Year Review for this claim and offer the following recommendation for LOP consideration.

- The UST Fund staff recommends reevaluating sampling wells with free product. It has been the industry standard to not sample wells such as these since the inception of the UST Program..
- It appears groundwater elevations have risen since the installation of the monitoring wells at the Site because only wells MW-10, MW-11 and MW-12 have screens that span the water table and two of these wells contain free product. Other wells at the Site may have floating product but cannot be seen because of submerged screens.

Updated October 2011, the Fund staff concurs with the approved remedial plan.


LEGEND:
GROUNDWATER MONITORING WELL
GROUNDWATER MONITORING WELL-CHEVRON
RECOVERY POINT
GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
12 GROUNDWATER ELEVATION CONTOUR LINE (DASHED WHERE INFERRED)
0.03 GROUNDWATER FLOW DIRECTION (FOOT PER FOOT)
NOT USED FOR CONTOURING
NG NOT GAUGED
NOTE:
GROUNDWATER ELEVATIONS AT ADJACENT CHEVRON SITE CALCULATED BASED ON FIELD DEPTH TO WATER DATA PROVIDED BY CHEVRON AND TOP OF CASING MEASUREMENTS AVAILABLE ON GEOTRACKER
0 50 100
SCALE IN FEET
NOTES:
1. BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC. DATED 10/26/2009, REFERENCE 06-88-646, AT A SCALE OF 1"=40'.
FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA
GROUNDWATER MONITORING REPORT
THIRD QUARTER 2013
GROUNDWATER ELEVATION CONTOUR MAP - SEPTEMBER 20, 2013
ARCADIS
FIGURE
2