UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: Los Angeles Regional Water Quality Control Board	Address: 320 West 4th Street, Suite 200 Los Angeles, CA 90013
Agency Caseworker: Noman Chowdhury	Case No.: R-20497

Case Information

USTCF Claim No.: 15629	Global ID: T0603705309
Site Name: Burgess Transportation	Site Address: 20825 Currier Rd Walnut , CA 91789 (Site)
Petitioner: Lee Nelson	Address: Po Box 10067 Fullerton, CA 92838
USTCF Expenditures to Date: $720,320	Number of Years Case Open: 18

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603705309

Summary

The Low-Threat Underground Storage Tank 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 Site 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 Site Information.** Highlights of the Conceptual Site Model of the case follow:

The unauthorized release was discovered following the removal of four Underground Storage Tanks (USTs) in August of 1994. No known USTs remain at the site. Three remedial pilot studies were conducted and a full scale High Vacuum Dual Phase Extraction (HVDPE) was selected and implemented. Results of the HVDPE indicated that extraction technologies were ineffective due to lithology with low permeability resulting in limited contaminant and groundwater mobility in the subsurface. The soil and groundwater plumes are located within the Site boundaries and are well defined horizontally and vertically by samples identified below detection limits. Soil and groundwater analytical data demonstrate that residual contamination is stable and remains in a very localized area within 100 feet of the release.

The petroleum release is limited to the shallow soil and groundwater. The affected groundwater is not currently being used as a source of drinking water or for any other designated beneficial use, and it is highly unlikely that the affected groundwater will be used as a source of drinking water or for any other beneficial use in the foreseeable future. Public supply wells are usually constructed with competent sanitary seals and screens that are in deeper more protected aquifers. Remaining petroleum constituents are limited, stable and declining. Remedial actions have been implemented and further

remediation would be ineffective and expensive. Additional assessment/monitoring will not likely change the conceptual model. Any remaining petroleum constituents do not pose significant risk to human health, safety, or the environment.

Rationale for Closure under the Policy

- General Criteria – Site **MEETS ALL EIGHT GENERAL CRITERIA** under the Policy.

- Groundwater Media-Specific Criteria. Site meets the criterion in **CLASS 5**. – 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 water quality objectives (WQOs) will be achieved within a reasonable period of time.

- Petroleum vapor Intrusion to Indoor Air –Site meets **CRITERIA (2) a. SCENARIO 4.** Site-specific conditions satisfy Scenario 4. Direct soil gas measurements oxygen data were collected and are less than or equal to those listed in the Scenario 4 Table.

- Direct Contact and Outdoor Air Exposure – Site meets **CRITERIA (3) a**. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1. The estimated naphthalene concentrations in soil meet the thresholds in Table1 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

Los Angeles Regional Water Quality Control Board (Regional Water Board) staff objected to UST case closure because:

1. 0.29 feet of free product was observed on January 14, 2011.
   RESPONSE: Free product has been observed five times in eleven years and only twice has the thickness of the free product been identified greater than a sheen. Given that geology at the site is not conducive to extraction technologies, and the intermittent nature of the free product observances, further free product removal would not be practical.

2. Dissolved hydrocarbon concentrations in three of the groundwater monitoring wells have shown increasing trends.
   RESPONSE: Recently, dissolved petroleum hydrocarbons increased in the source area wells. The increase was likely a result of remobilization of petroleum hydrocarbons trapped in soil driven by the unusually high precipitation and the associated increased groundwater table observed during the winter of 2009/2010. Therefore, excluding the recent increase, dissolved hydrocarbon trends observed in source area wells appear to be stable/decreasing. The wells on the outer edge of the plume (non-detect ring) were unaffected by the recent increase indicating the plume laterally stable.

3. The dissolved hydrocarbon fluctuations are too large to identify a stable/decreasing trend.
   RESPONSE: The release was identified 18 years ago and the plume is ringed by non-detect monitoring wells therefore, the historic data for the outer wells indicates that the contaminant mass has expanded to its maximum extent where attenuation exceeds migration and is laterally stable. Given that the plume has been laterally stable, the very localized concentration fluctuations do not threaten human health and do not warrant further concern.

4. The Regional Water Board contends that the above information indicates the potential source contributing to the identified groundwater contamination has not been successfully removed.
   RESPONSE: The primary source has been removed. No other sources are on the site. Remediation utilizing extraction technologies has proven ineffective. The recommended remedial option included deep soil excavation (35 feet bgs) and groundwater extraction via 45 foot deep extensive subsurface drains. However, this option would require significant effort and cost and may compromise structures on the Site to remediate the plume. There are no significant human health, safety, or environment threats from this plume.

Recommendation for Closure

The corrective action performed at this Site ensures the protection of human health, safety, the environment and is consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations, applicable state policies for water quality control and the applicable water quality control plan, and case closure is recommended.

Prepared By: _____ 4-15-2013
Matthew Cohen — Date
Engineering Geologist

Reviewed By: _____ 4/15/2013
George Lockwood, PE No. 59556 — Date
Senior Water Resource Control Engineer

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

The site complies with 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 site 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 case 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 site?	☐ 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.

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 (WQOs) 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 WQOs stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds WQOs 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 of the Policy 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 INFORMATION (Conceptual Site Model)

Site Location/ History

- The Site is located at 20825 Currier Road, Walnut. The Site is an operating Commercial trucking facility.
- The Site is bounded by commercial properties.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Primary Source of Release: UST system.
- Discovery Date: 1994.
- Release Type: Petroleum[2].
- Twelve monitoring wells have been installed.
- Free Product: Periodically reported (five times in eleven years) and has only been thicker than a sheen twice.

Table A: USTs

Tank No.	Size	Contents	Status	Date
1	12,000	Diesel	Removed	1994
2	12,000	Diesel	Removed	1994
3	10,000	Gasoline	Removed	1994
4	280	Waste Oil	Removed	1994

Receptors

- Groundwater Basin: San Gabriel Valley.
- Groundwater Beneficial Uses: Municipal (MUN), Industrial (IND), Industrial Process Supply (PROC), and Agricultural Supply (AGR).
- Designated Land Use: Industrial.
- Public Water System: Walnut Valley Water District.
- Distance to Nearest Supply Wells: Greater than 1,000 feet.
- Distance to Nearest Surface Waters: Concrete lined San Jose Creek ~ 400 feet northwest.

Geology/ Hydrogeology

- Average Groundwater Depth: ~23 feet.
- Minimum Groundwater Depth: ~15.5 feet.
- Groundwater Flow Direction: Southwesterly.
- Geology: Low permeability silts and clays to approximately 19 ft. bgs over siltstone/sandstone bedrock.
- Hydrology: Regional groundwater flow is largely controlled by engineered recharge along the San Gabriel, the Rio Hondo, and the Santa Ana Rivers, and by ground water pumping from the wells in the area.

[2] "Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute.
(Health & Safety Code, § 25299.2)

Corrective Actions

- 1994 August – Removal of four USTs and adjacent soil.
- 2003 May – Soil vapor extraction / air sparging pilot study.
- 2004 June/July– Soil vapor extraction pilot study.
- 2005 June/July – High vacuum dual phase extraction (HVDPE) pilot study.
- 2006 July through 2007 February – Full Scale HVDPE.

Table B: Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 ft. bgs (mg/kg)	Maximum 5-10 ft. bgs (mg/kg)
Benzene	<0.005	<0.005
Ethylbenzene	<0.005	<0.005
Naphthalene	NA	NA
PAHs	NA	NA

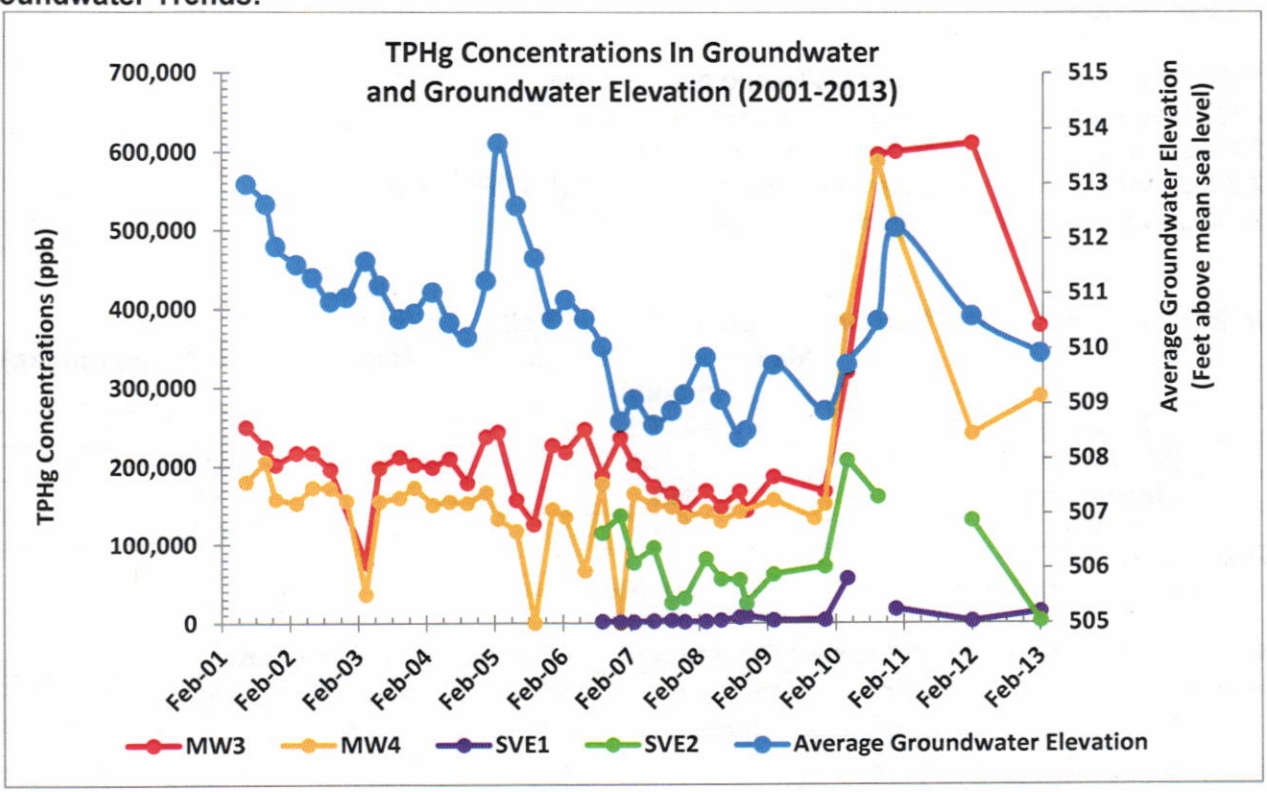
NA = Not analyzed
PAH = Poly-aromatic hydrocarbons as benzo(a)pyrene toxicity equivalent

Table C: Concentrations of Petroleum Constituents of Concern in Groundwater

Sample	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW1	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
MW2	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
MW3	2/27/2013	**379,961**	**55,672**	**71,785**	**3,466**	**22,737**	<50
MW4	2/27/2013	**289,683**	**41,643**	**66,605**	**3,569**	**16,375**	<50
MW5	2/27/2012	<100	<0.5	<0.5	<0.5	<0.5	<1.0
MW6	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
MW7	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
MW8	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
MW9	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
MW10	2/27/2013	<100	<0.5	<0.5	<0.5	<0.5	<1
SVE1	2/27/2013	**14,467**	**1,569**	**87**	**99**	**57**	<5
SVE2	2/27/2013	**3,182**	**1,111**	**8.3**	**<0.5**	**74**	<1
WQOs	-	-	1	150	300	1750	5

WQOs - Water Quality Objectives
* California Notification Level

Groundwater Trends:



Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: TPHg plume is less than 100 feet in length from the source.
- Petroleum Constituent Plume Determined Stable or Decreasing: Yes.
- Soil/Groundwater Sampled for MTBE: Yes, see Table C above.
- Residual Petroleum Constituents Pose Significant Risk to the Environment: No.
- Residual Petroleum Constituents Pose Significant Vapor Intrusion Risk to Human Health: No – soil vapor samples demonstrate that there is no significant risk form vapor intrusion.
- Residual Petroleum Constituents Pose a Nuisance[3] at the Site: No.
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No – the site meets the Low-Threat Closure Policy Criteria.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No – 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% benzene and 0.25% naphthalene. Therefore, benzene concentrations can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Table 1 of the policy. Therefore, estimated naphthalene concentrations meet the thresholds in Table1 of 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.

[3] Nuisance as defined in California Water Code, section 13050, subdivision (m).

Burgess Transportation
20825 Currier Road, Walnut, Los Angeles County