UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: Alameda County Health Care Services (Alameda County)	Address: 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577
Agency Caseworker: Barbara Jakub	Case No.: RO0000279

Case Information

USTCF Claim Nos.: 7039, 8250	Global ID: T0600100672
Site Name: Telegraph Business Properties	Site Address: 5427 Telegraph Avenue Oakland, CA 94609 (Site)
Petitioner: Telegraph Business Properties Attention: Jon Legallet	Address: 1401 Griffith Street San Francisco, CA 94214
USTCF Expenditures to Date: $238,467	Number of Years Case Open: 21

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600100672

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 Low-Threat Policy. This Site does **NOT** satisfy **GENERAL CRITERIA b** of the Policy, which requires the unauthorized release to consist only of petroleum. This Site meets all of the required criteria of the State Water Resources Control Board Resolution 92-49. A summary evaluation of compliance with the Resolution 92-49 is shown in **Attachment 1: Compliance with State Water Board Policies and State Law.** The Conceptual Site Model (CSM) upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Site Information.** Highlights of the CSM upon which the evaluation of the Case has been made are as follows:

The release at this Site was discovered when the underground storage tanks (USTs) were removed in May 1992. The Site was formerly a large scale dry cleaning establishment. No USTs are currently on-Site. Current businesses operating include furniture refinishing and sales, auto detailing, dry cleaning with actual cleaning done at another location, and other retail and service establishments.

Methyl tert-butyl ether (MTBE) has never been detected in the groundwater in any monitoring well. Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX), and Stoddard solvent have never been detected in off-Site downgradient wells MW-4 and MW-5. Groundwater concentration trends for benzene and Stoddard solvent have been decreasing in both well MW-1 and the on-Site downgradient well MW-3. The most current groundwater data from the

December 2010 sampling event indicated that chlorinated volatile organic compounds (CVOCs), specifically perchloroethylene (PCE) and trichloroethylene (TCE), were not detected in any of the monitoring wells.

The primary source has been removed and the secondary source has been removed to the extent practicable through excavation at the time of UST removal. Soil and groundwater have been evaluated to determine the extent and mobility of the release. Minimal residual mass remains beneath the Site. Remaining petroleum constituents and CVOCs are limited, stable, and declining. Residual CVOCs in soil have not resulted in a measurable plume in shallow groundwater. Remedial actions have been implemented and further remediation would be unnecessary and costly. Additional assessment/monitoring will not likely change the CSM. Remaining petroleum constituents and CVOCs do not pose significant risk to human health, safety, or the environment.

Objections to Closure

Alameda County staff objected to UST case closure because:

1. The secondary source in soil has not been removed and the risk to human health due to CVOCs at the Site has not been appropriately evaluated.
   RESPONSE: Soil analytical data indicated that the remaining mass of petroleum constituents and CVOCs in fine-grained soil with low permeability is limited to the immediate vicinity of the former USTs. PCE was detected in sub-slab vapor samples collected in April 2010. These sample concentrations were well below San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Environmental Screening Levels (ESLs) for vapor intrusion concerns. PCE and TCE were not detected in any groundwater samples collected in December 2010. Stoddard solvent has never been detected in off-Site down gradient wells MW-4 and MW-5. MTBE has never been detected in the groundwater in any monitoring well. TPHg, BTEX, and Stoddard solvent have never been detected in off-Site down-gradient wells MW-4 and MW-5. Groundwater concentration trend for Stoddard solvent and benzene have been decreasing in well MW-1 and the on-Site downgradient well MW-3, which indicate that the plume of residual petroleum constituents and CVOCs emanating from the UST excavations is naturally attenuating.

   Based on this evidence, the residual petroleum constituents and CVOCs that remain are a low threat to human health, safety, and the environment and will not adversely affect the beneficial use of the groundwater in the area.

2. Vertical and horizontal extent of CVOCs has not been defined in groundwater. Phase I investigation needs to be conducted.
   RESPONSE: Contamination migration has been investigated and adequately assessed. Analytical data from groundwater samples indicate that CVOCs in the groundwater have been reduced through processes of adsorption, dispersion, dilution, volatilization, and biological degradation. Also, recent groundwater sampling conducted in December 2010 indicated that PCE and TCE were non-detect in all monitoring wells.

3. An assessment that includes more than two sub-slab vapor samples is necessary.
   RESPONSE: PCE was detected in sub-slab vapor samples collected in April 2010. However, the concentrations were well below the Regional Water Board ESLs for vapor intrusion concerns. In addition, recent groundwater analytical data from December 2010 indicated that PCE and TCE were not detected in any monitoring well.

The groundwater elevation at this Site is very shallow. Because of the shallow groundwater, any significant source of PCE vapor in soil would also create a groundwater plume. Because no PCE plume is present, we can infer that no significant PCE soil vapor is present. No further investigation is necessary to assess the risk posed by residual contaminants at the Site.

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: Trinh Pham 9/18/2013
Trinh Pham Date
Water Resource Control Engineer

Reviewed By: 9/18/2013
George Lockwood, PE No. 59556 Date
Senior Water Resource Control Engineer

ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW
The Site complies with State Water 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 Resolution 92-49 as described below.

Will corrective action performed ensure the protection of human health, safety, and the environment? The information included in this UST Case Closure Summary supports a determination that corrective action performed at this Site will ensure the protection of human health, safety, and the environment.	☒ Yes ☐ No
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 Site 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
Are corrective action and UST case closure consistent with State Water Board Resolution 92-49?	☒ Yes ☐ No
Is achieving background water quality feasible? To remove all traces of residual petroleum constituents at the Site would require significant effort and cost. Removal of all traces of residual petroleum hydrocarbon constituents (if present) that contribute to detectable concentrations in shallow groundwater can be accomplished, but would require excavation of additional soil as well as additional remediation of shallow groundwater. If complete removal of all detectable traces of petroleum constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous. Because of the high costs involved and minimal benefit of attaining further reductions in concentrations of petroleum constituents at this Site, and the fact that beneficial uses are not threatened, attaining background water quality at this Site is not feasible.	☐ Yes ☒ No

If achieving background water quality is not feasible: **Is the alternative cleanup level consistent with the maximum benefit to the people of the State?** It is impossible to determine the precise level of water quality that will be attained given the uncertainties about the rates of dissolution and degradation. In light of all the factors discussed above and the fact that the residual petroleum constituents will not unreasonably affect present and anticipated beneficial uses of groundwater, an acceptable level of water quality will be attained that is consistent with the maximum benefit to the people of the state.	☒ Yes ☐ No
Will the alternative cleanup level unreasonably affect present and anticipated beneficial uses of water? The aquifer beneath the Site is at or near WQOs and the surrounding aquifer is below WQOs. Groundwater concentrations will continue to reduce through natural attenuation.	☐ Yes ☒ No
Will the alternative level of water quality result in water quality less than that prescribed in applicable Basin Plan? The final step in determining whether cleanup to a level of water quality less stringent than background is appropriate for this Site requires a determination that the alternative level of water quality will not result in water quality less than that prescribed in the relevant basin plan. Pursuant to State Water Board Resolution 92-49, a site may be closed if the basin plan requirements will be met within a reasonable time frame. Natural attenuation will continue to reduce groundwater concentrations.	☐ Yes ☒ No
Have factors contained in title 23 of the California Code of Regulations, section 2550.4 been considered? In approving an alternative level of water quality less stringent than background, the State Water Board considers the factors contained in California Code of Regulations, title 23, section 2550.4, subdivision (d). The adverse effect on shallow groundwater will be minimal and localized, and there will be little adverse effect on the groundwater contained in deeper aquifers, given the physical and chemical characteristics of petroleum constituents, the hydrogeological characteristics of the Site and surrounding land. In addition, the potential for adverse effects on beneficial uses of groundwater is low, in light of the proximity of the groundwater supply wells, the current and potential future uses of groundwater in the area, the existing quality of groundwater, the potential for health risks caused by human exposure, the potential damage to wildlife, crops, vegetation, and physical structures, and the persistence and permanence of potential effects. Finally, a level of water quality less stringent than background is unlikely to have any impact on surface water quality, in light of the volume and physical and chemical characteristics of petroleum constituents; the hydrogeological characteristics of the Site and surrounding land; the quantity and quality of groundwater and direction of groundwater flow, the patterns of precipitation in the region, and the proximity of residual petroleum to surface waters.	☒ Yes ☐ No

Will the requisite level of water quality be met within a reasonable time? Although WQOs may not have been met at the Site, the approximate time period in which the requisite level of water quality will be met for constituents of concern is decades to hundreds of years. This is a reasonable period in which to meet the requisite level of water quality because current and future beneficial uses are not impaired. Impacted groundwater is not currently being used as a source of drinking water and it is highly unlikely that impacted groundwater will be used as a source of drinking water in the future. Residential and commercial water users are currently connected to the municipal drinking water supply. Public supply wells are constructed with competent sanitary seals and intake screens that are in deeper more protected aquifers. The site conditions do not represent a substantial threat to human health, safety, or the environment, and case closure is appropriate.	☒ Yes ☐ No

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

Site Location/ History

- Location: The Site is located on the southwest corner of the intersection of 55th Street and Telegraph Avenue in Oakland. The Site was formerly a large scale dry cleaning establishment. No USTs are currently on-Site. Current businesses operating include furniture refinishing and sales, auto detailing, dry cleaning with actual cleaning done at another location, and other retail and service establishments.
- Nature of Contaminants of Concern: Petroleum constituents and CVOCs.
- Primary Source of Release: UST system.
- Discovery Date: 1992.
- Release Type: Petroleum[1] and CVOCs.
- Free Product: Not reported.

Table A: USTs

Tank	Size in Gallons	Contents	Status	Date
10 USTs	5,000	Stoddard Solvent	Removed	May 1992
1 UST	10,000	Gasoline	Removed	May 1992
1 UST	1,000	Stoddard Solvent Waste	Removed	May 1992
1 UST	1,500	Stoddard Solvent Waste	Removed	May 1992
3 USTs	550	Stoddard Solvent Waste	Removed	May 1992
1 UST	2,500	Diesel	Removed	May 1992

Receptors

- Groundwater Basin: Santa Clara Valley – East Bay Plain.
- Groundwater Beneficial Uses: Municipal (MUN), Agricultural Supply (AGR), Industrial Supply (IND), and Industrial Process Supply (PRO).
- Designated Land Use: Commercial, Residential.
- Public Water System: East Bay Municipal Utility District.
- Distance to Nearest Supply Wells: More than 1,000 feet from the Site.
- Distance to Nearest Surface Waters: More than 1,000 feet from the Site.

Geology/ Hydrogeology

- Average Groundwater Depth: ~ 7 feet.
- Minimum Groundwater Depth: ~ 5 feet.
- Geology: The Site is underlain by weakly consolidated, slightly weathered, poorly sorted, irregular interbedded clay, silt, sand, and gravel.
- Hydrology: The groundwater flow direction is predominantly to the southwest. Occasionally, groundwater flow direction is to the southeast.

[1] "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

- 17 USTs were removed from the Site in May 1992. The amount of impacted soil removed from the Site during the UST removal was not reported.
- 5 monitoring wells and 31 soil borings have been constructed at the Site.

Table B: Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 ft. bgs (mg/kg)	Maximum 5-10 ft. bgs (mg/kg)
Benzene	<0.015	<0.94
Ethylbenzene	<0.015	<0.94
Naphthalene	Not Analyzed	Not Analyzed
PAHs*	Not Analyzed	Not Analyzed

*Poly-aromatic hydrocarbons as benzo(a)pyrene toxicity equivalent

Table C: December 2010 Groundwater Sampling Results

Well No.	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)	Stoddard Solvent (µg/L)	PCE (µg/L)	TCE (µg/L)
MW-1	**610**[1]	<2.2	<2.2	<100	<2.2	<2.2
MW-2	**1,600**[2]	**13**	<2.2	**12,000**	<2.2	<2.2
MW-3	**2,000**[1]	**4.4**	<4.4	**330**[3]	<4.4	<4.4
MW-4	<50	<0.5	<0.5	<100	<0.5	<0.5
MW-5	<50	<0.5	<0.5	<100	<0.5	<0.5
WQOs	**5**[4]	**1**[5]	**5**[5]	**--**	**5**[5]	**5**[5]

1	Hydrocarbons within C5-C12 range quantified as gasoline but pattern does not match reference gasoline standard (possibly heavily aged gasoline)
2	Results not typical of gasoline standard pattern. Result reported as gasoline but pattern best matches Mineral Spirits/Stoddard solvent.
3	Not typical of Stoddard standard pattern (possibly aged Stoddard)
4	Taste and odor threshold (McKee and Wolf)
5	WQOs included in the San Francisco Bay Regional Water Quality Control Board's Basin Plan
--	Not available

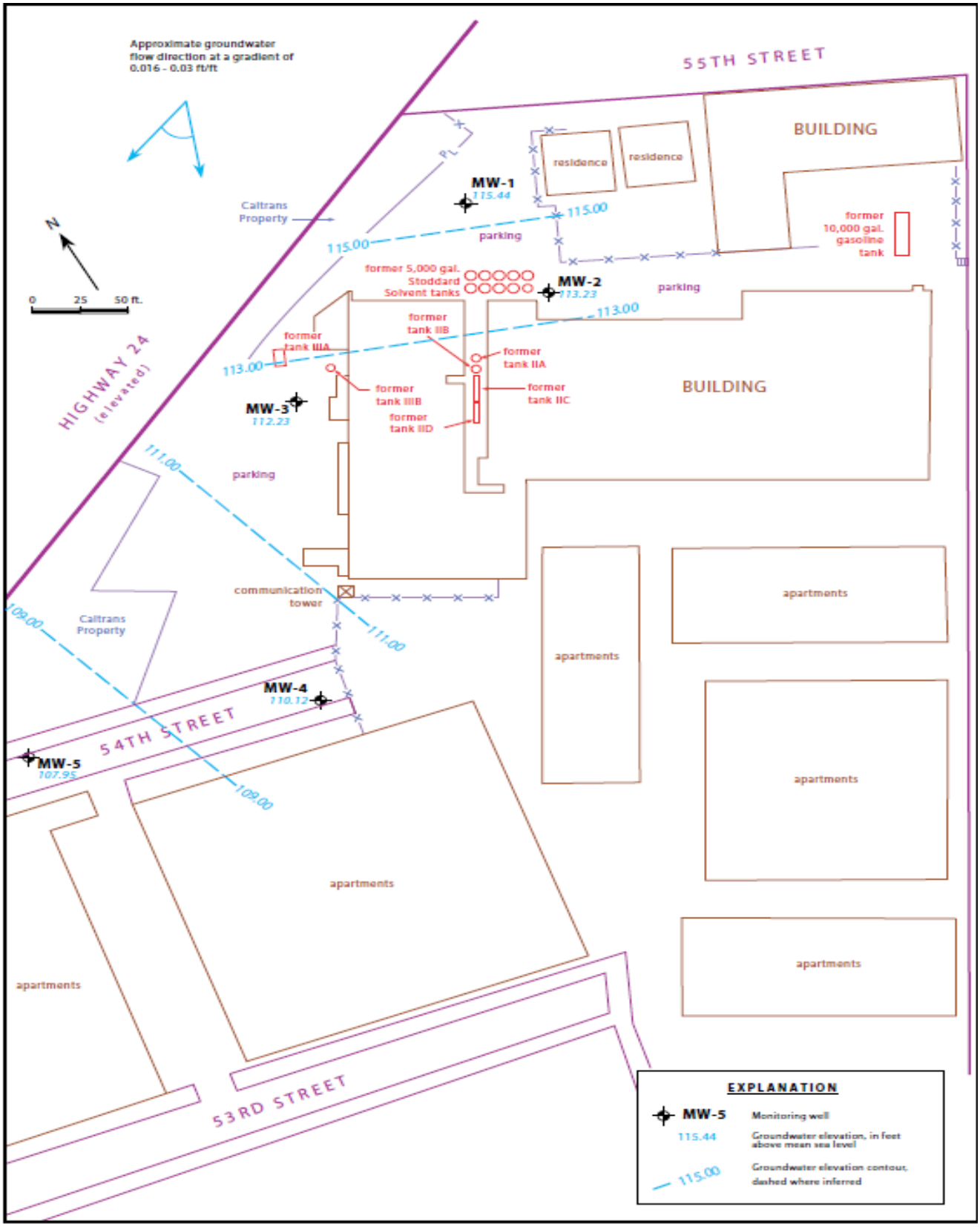
Groundwater Trends
Reported concentrations of benzene at the Site have demonstrated stable or decreasing trends over time. Stoddard solvent has never been detected in off-Site downgradient wells MW-4 and MW-5 and has been decreasing in well MW-1 and the on-Site downgradient well MW-3. The most current groundwater data from the December 2010 sampling event indicated that PCE and TCE were not detected in any of the monitoring wells.

Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: TPHg groundwater plume is approximately 280 feet, benzene groundwater plume is approximately 100 feet.
- 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. Petroleum constituents most likely to pose a threat for vapor intrusion were removed during soil excavation and over-excavation. Site conditions demonstrate that the residual petroleum constituents in soil and groundwater are protective of human health.
- Residual Petroleum Constituents Pose a Nuisance[2] at the Site: No.
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No. Site-specific conditions satisfy all of the applicable characteristics and criteria for petroleum vapor intrusion to indoor-air under Class a, Scenario 4.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No. There are no soil samples 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 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.

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

PLOT PLAN


Approximate groundwater flow direction at a gradient of 0.016 - 0.03 ft/ft
55TH STREET
BUILDING
residence
residence
MW-1
115.44
Caltrans Property
115.00
parking
former 10,000 gal. gasoline tank
former 5,000 gal. Stoddard Solvent tanks
MW-2
113.23
parking
113.00
former tank IIIA
former tank IIIB
former tank IIA
former tank IIC
former tank IIID
MW-3
112.23
BUILDING
HIGHWAY 24 (elevated)
111.00
parking
communication tower
apartments
apartments
apartments
apartments
apartments
apartments
109.00
Caltrans Property
MW-4
110.12
54TH STREET
MW-5
107.95
53RD STREET
N
0 25 50 ft.
EXPLANATION
MW-5 Monitoring well
115.44 Groundwater elevation, in feet above mean sea level
115.00 Groundwater elevation contour, dashed where inferred

STODDARD SOLVENT CONCENTRATIONS IN GROUNWATER - DECEMBER 2010

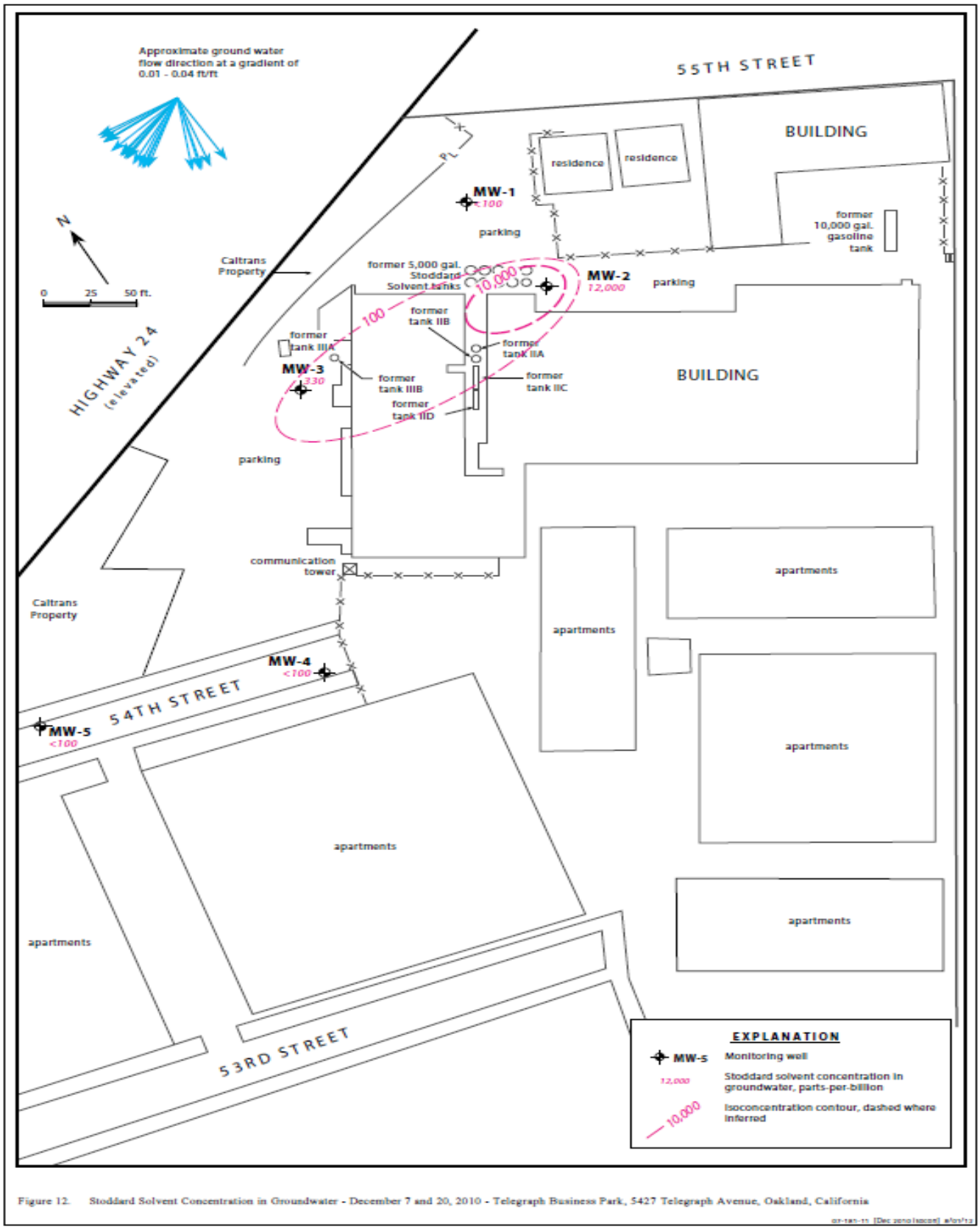


Figure 12. Stoddard Solvent Concentration in Groundwater - December 7 and 20, 2010 - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California