CITY OF EMERYVILLE
INCORPORATED 1896
1333 PARK AVENUE
EMERYVILLE, CALIFORNIA 94608-3517
TEL: (510) 596-4300 FAX: (510) 658-8095

RECEIVED
By Alameda County Environmental Health 8:58 am, Feb 08, 2016

February 4, 2016

Mr. Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Data Gap Investigation Work Plan & Focused Site Conceptual Model for City of Emeryville Former Fire Station UST Site

Reference: Alameda County Fuel Leak Case No. RO0000068
GeoTracker Global ID T0600101848

Dear Mr. Detterman:

The City of Emeryville is pleased to submit the attached *Data Gap Investigation Work Plan and Focused Site Conceptual Model* for the City formerly owned fire station site. The work plan was prepared by OTG EnviroEngineering Solutions, Inc. (OTG) under a consultant service contract with the City of Emeryville.

Certification

I certify under penalty of law that this document and all attachments are prepared by OTG under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact Mr. Xinggang Tong at (510) 465-8982 or me at (510) 596-3728 if you have questions or comments.

Sincerely,
City of Emeryville

Nancy Humphrey
Environmental Programs Supervisor

OTG EnviroEngineering Solutions, Inc.

February 4, 2016

Mr. Mark Detterman, PG, CEG
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Reference: Alameda County Fuel Leak Case No. RO0000068
GeoTracker Global ID T0600101848

Dear Mr. Detterman:

Enclosed is a Data Gap Investigation Work Plan and Focused Site Conceptual Model for the City of Emeryville formerly owned fire station site, which is prepared in response to a 22nd July 2015 directive letter from Alameda County Environmental Health (ACEH).

Certification

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please call Xinggang Tong at (510) 465-8982 or Nancy Humphrey at (510) 596-3728 if you have questions or comments.

Sincerely,
OTG EnviroEngineering Solutions, Inc.

Xinggang Tong, PhD, PE
Project Manager

Attachment

Table 1 – Data Gap Investigation Work Plan and Focused Site Conceptual Model
City of Emeryville Former Fire Station – GeoTracker ID T0600101848, ACEH Case #RO68

SITE DESCRIPTION

This City of Emeryville owned former fire station used to have the street address of 4331 San Pablo Avenue, Emeryville, CA and occupied a rectangle area of 125 ft by 148 ft. However, the fire station does not exist today. As part of the "Emery village Center" redevelopment area in the early 2000, its parcel was combined with adjacent parcels and then subdivided into three parcels as existing today: Parcel #49-1027-39, Parcel #49-1027-38, and Parcel #49-1027-37-1, as shown on Figure 5. The former fire station parcel is now part of outdoor parking area of the Emery Village Center, as shown on Figure 2.

SITE HISTORY

The City of Emeryville operated a fire station at 4331 San Pablo Avenue from the early 1910s to around 1995 based on a Phase I report by Lowney Associates (1999). A 500-gallon underground fuel storage tank (UST) provided fueling services to the station's fire engines. A sump pit also existed in the concrete-paved backyard that once collected waste engine and transmission oil from fire engine maintenance activities. Their locations are shown on Figure 3.

SITE ENVIRONMENTAL INVESTIGATION AND REMEDIATION HISTORY

The UST and associated equipment and underground piping were removed on July 26, 1994 under the supervision of ACEH (SEACOR, 1994a & 1994b). Approximately 20 cubic yards of petroleum hydrocarbon impacted soil was also removed from the excavation pit and disposed of offsite. A soil sample was collected from each of the four sidewalls of the UST excavation pit at the depth of seven (7) feet below ground surface (bgs). A fifth soil sample was collected from the base of the excavation pit at the fuel dispenser island at 3 feet bgs. The five soil samples were analyzed for TPH-gas, TPH-diesel, and BTEX. TPH gas ranged from 3 to 190 mg/kg, TPH-diesel from ND (10) to 260 mg/kg, and benzene from ND (0.005) to 0.38 mg/kg.

A 2"-diameter groundwater monitoring well (MW-1) was installed approximately 10 feet down gradient of the former UST to a depth of 23 feet bgs, with screen from 6 to 21 feet bgs, on February 21, 1995 (SEACOR, 1995). The well was monitored quarterly in 1995 for TPH-gas, TPH-diesel, and BTEX. At the fourth and the last documented monitoring event conducted on December 11, 1995, TPH-gas was measured at 8.7 mg/L, TPH-diesel at 98 mg/L, and benzene at 230 ug/L (SEACOR, 1996). Groundwater levels varied from approximately 5 feet to 12 feet below top of well casing. The well was destroyed during the site redevelopment in the early 2000. However, well destruction records could not be located. Also, documents related to remedial activities during the site redevelopment could not be found.

Table 1 – Data Gap Investigation Work Plan and Focused Site Conceptual Model
City of Emeryville Former Fire Station – GeoTracker ID T0600101848, ACEH Case #RO68

Task	Data Gap Item	Proposed Investigation	Rationale	Analyses
Task 1: LTCP General Criteria B – The unauthorized release consists only of petroleum				
1a	The existence of a sump pit that collected waste oil may potentially disqualify the site as a petroleum only impacted site.	Advance 2 borings down-gradient of the former UST and the sump pit to approximately 15 ft bgs, as shown on Figure 3. Soil samples from 0-5 ft and 5-10 ft bgs intervals and a grab groundwater samples will be collected from each borehole.	The unauthorized release should be considered consisting only of petroleum for the following reasons: • The fire crew did only limited on-site maintenance consisting mainly of oil changes for fire trucks. Hence, TPH-mo will be included in analysis. • The fuel UST was a documented source of unauthorized release of petroleum. • Chlorinated VOCs (CVOCs) were reported in adjacent sites – former fuel depot, standard brands paint, Pepsi canning & truck maintenance, ARCO station, all within the same Emery Village redevelopment area. These sites had much more likely contributed to CVOCs impact in the area. CVOCs were not reported before at the fire station site and are not recommended for analysis in the proposed investigation.	Soil and grab groundwater samples will be analyzed for TPH-g, TPH-d, TPH-mo, BTEX, MTBE, and naphthalene by EPA Method 8015 and 8260
Task 2: LTCP General Criteria D – Free product has been removed to the maximum extent practicable				

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2a	Sheen was reported in the last monitoring event of the former well MW-1 on 12/11/95. No removal activities were reported.	No actions are proposed presently.	Well MW-1 was destroyed during the site redevelopment in the early 2000. Pending results from the proposed two borings under Task 1a above, new well(s) could be installed for groundwater monitoring and/or removal actions.	
Task 3: LTCP General Criteria E – A conceptual site model that assesses the nature, extent, and mobility of the release has been developed				
3a	A site conceptual model has not been developed	No actions are proposed presently.	This table presents a partial site conceptual model. It will be updated as additional investigation and/or remediation data becomes available.	
Task 4: LTCP General Criteria F – Secondary source has been removed to the extent practicable				
4a	No documented removal actions.	No actions are proposed presently.	The available data is over 20 years old and does not represent current site conditions. Depending on results from the additional sampling proposed under Task 1a above, appropriate removal actions could be proposed later.	
Task 5: LTCP General Criteria G – Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15				
5a	MTBE has not been tested for soil and groundwater.	MTBE analysis is proposed under Task 1a	All soil and groundwater samples to be collected under Task 1a will be analyzed for MTBE.	MTB will be included in analysis

Table 1 – Data Gap Investigation Work Plan and Focused Site Conceptual Model
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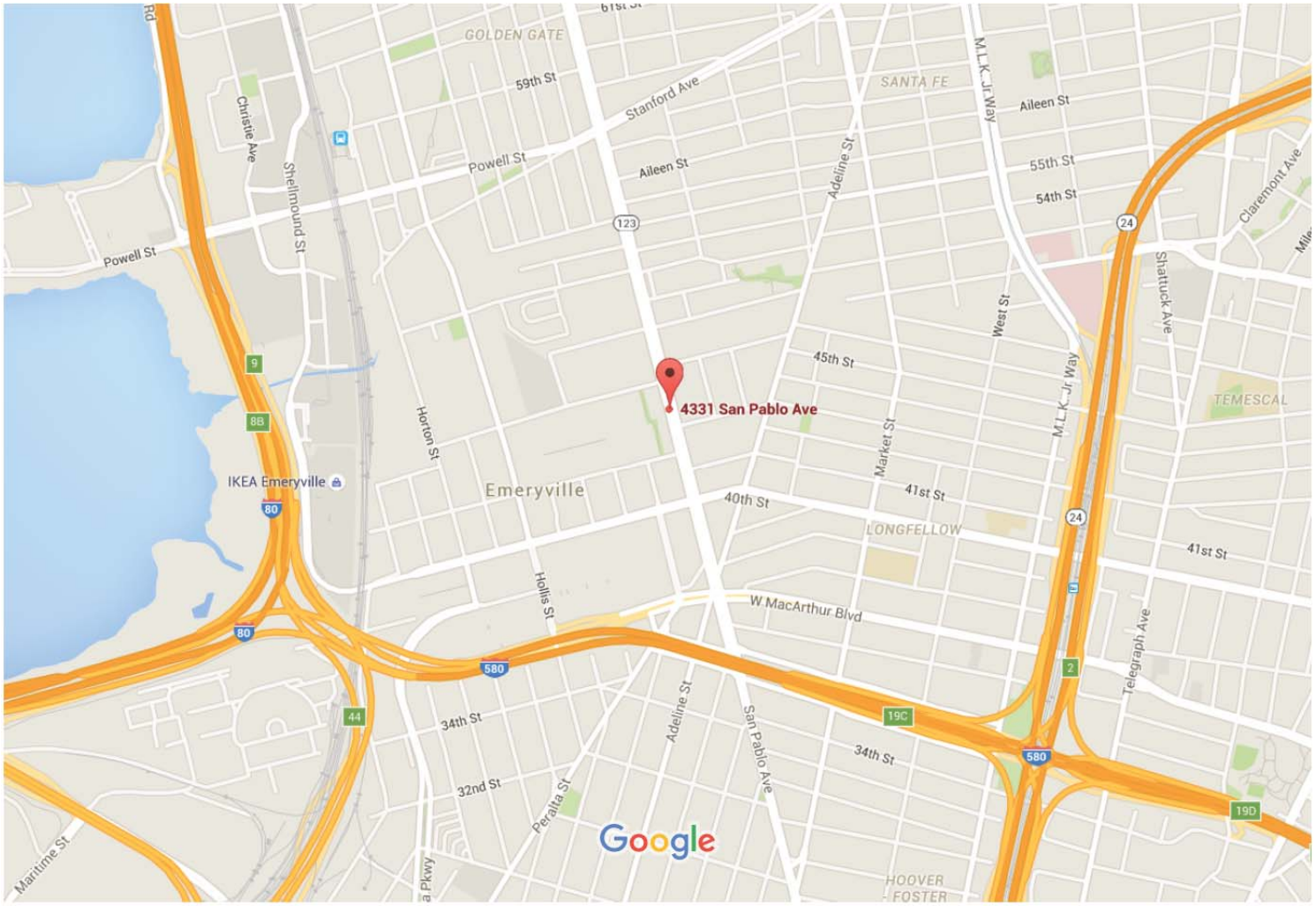
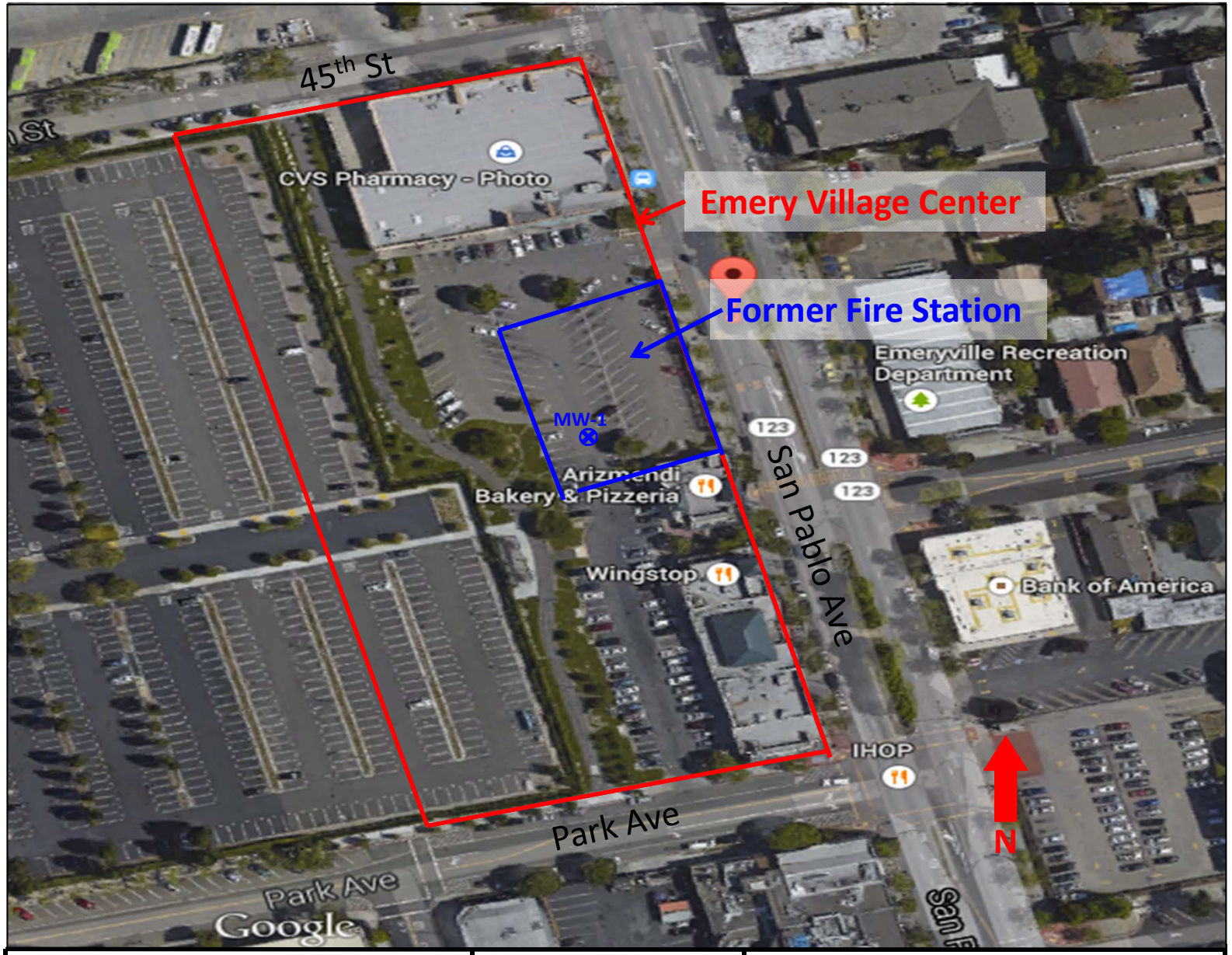
Task 6: LTCP Media Specific Criteria for Groundwater				
6a	Plume length and lateral extent not defined, nor groundwater flow direction.	No actions are proposed presently.	• Pending results from the proposed two borings under Task 1a above, additional investigations could be proposed later to define plume length and lateral extent. • A review of groundwater elevation data from nearby sites (Berkeley Farms, RO#2452; OakWalk, RO#2733; & Celis, RO#453) indicates that the shallow groundwater flows in a westerly to southwesterly direction.	
6b	Limited data available to assess plume stability	No actions are proposed presently.	Pending results from the proposed two borings under Task 1a above, additional investigations, including installation of monitoring well(s), could be proposed later.	
6c	Distance to closest water supply well or surface water is undetermined	A well and surface water body survey will be conducted within ¼ radius of the site.		
Task 7: LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air				
7a	Limited data available to allow assessment of vapor intrusion to indoor air	No actions are proposed.	• The site is part of an outdoor parking lot for the foreseeable future. It is either parking space or park within 500 ft downgradient of the UST. • The closest building is a commercial shop	

Table 1 – Data Gap Investigation Work Plan and Focused Site Conceptual Model
City of Emeryville Former Fire Station – GeoTracker ID T0600101848, ACEH Case #RO68

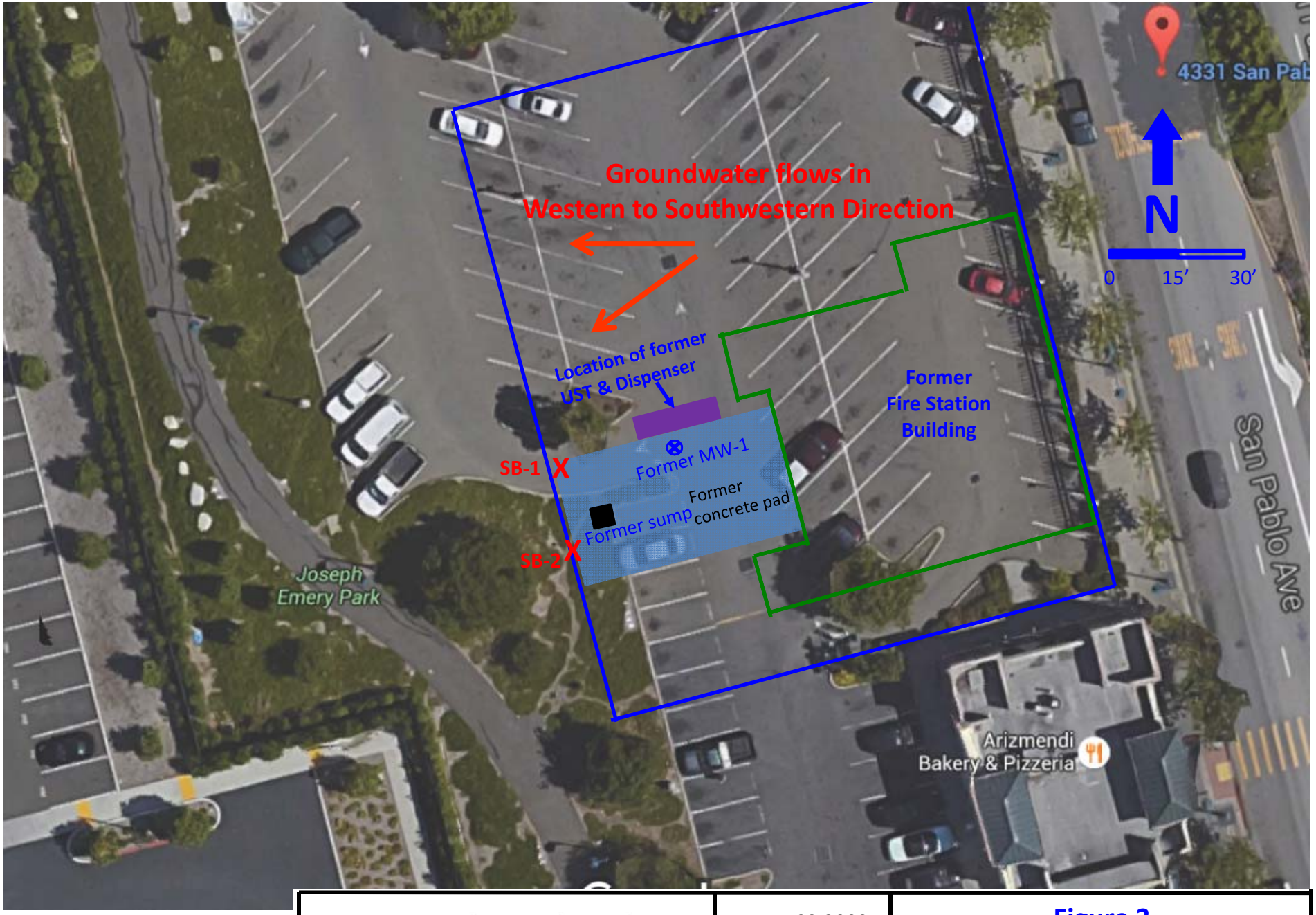
			located upgradient of the UST and is unlikely impacted by the UST release. • There are many other cases in the area that could impact the commercial shop. Figure 4 is a GeoTracker printout that shows cases surrounding the area.	
Task 8: LTCP Media Specific Criteria for Direct Contact and Outdoor Air Exposure				
8a	Limited data available to allow assessment of direct contact and outdoor air exposure	No actions are proposed presently.	This task will be evaluated pending results from the proposed two borings under Task 1a above.	



EnviroEngineering Solutions, Inc.	14EMV03.3000	Figure 1 - Location of City of Emeryville Former Fire Station 4331 San Pablo Avenue, Emeryville, CA
	January, 2016	

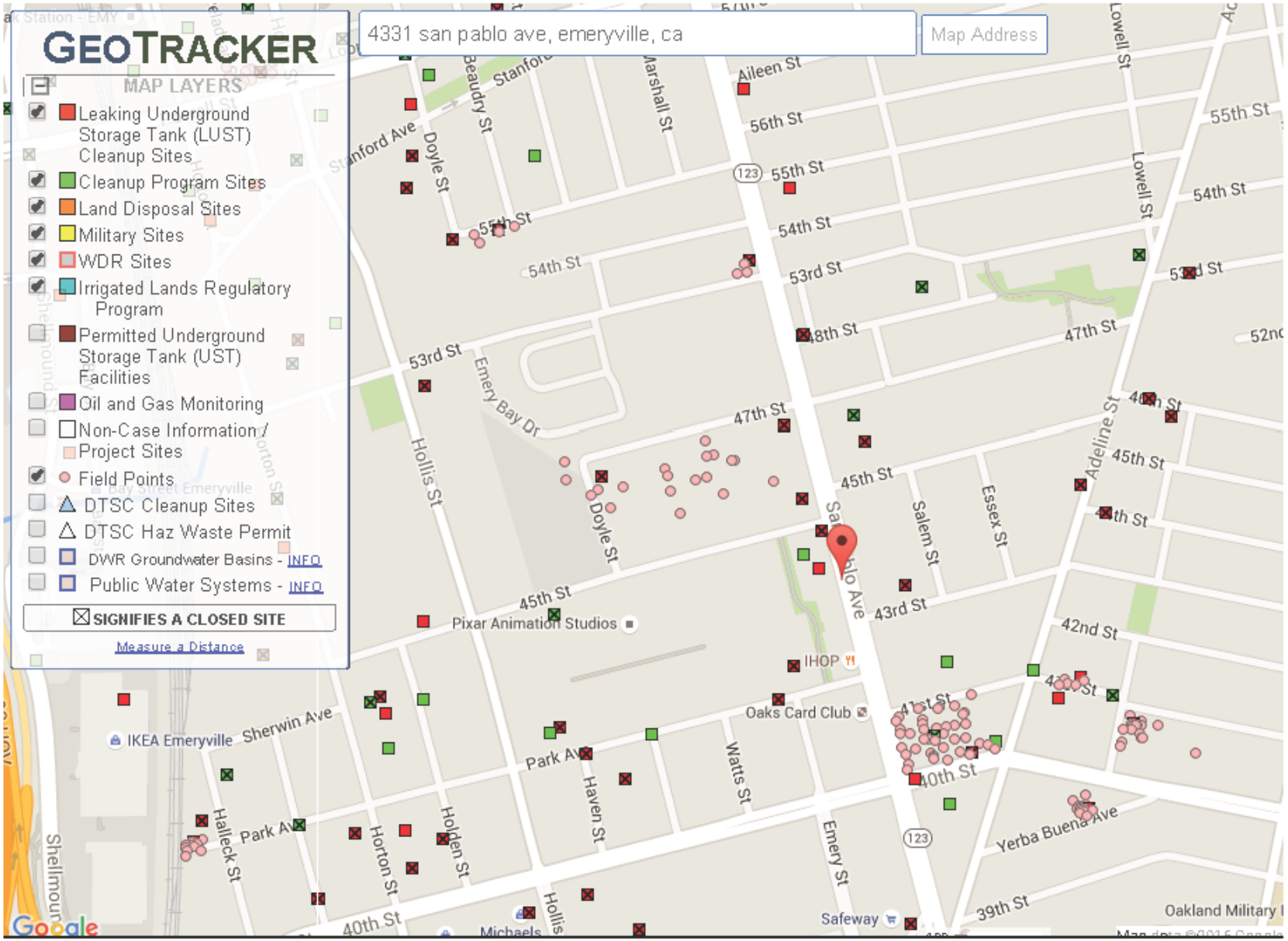


EnviroEngineering Solutions, Inc.	14EMV03.3000	Figure 2 - Location of City of Emeryville Former Fire Station
	January, 2016	4331 San Pablo Avenue, Emeryville, CA



X Proposed boring location

OTG EnviroEngineering Solutions, Inc.	14EMV03.3000	**Figure 3** **Proposed Boring Location** 4331 San Pablo Avenue, Emeryville, CA
	January 2016	



EnviroEngineering Solutions, Inc.	14EMV03.3000	Figure 4 – Active & Closed Sites Near City of Emeryville Former Fire Station
	January, 2016	4331 San Pablo Avenue, Emeryville, CA

OTG EnviroEngineering Solutions, Inc.	14EMV03.3000	Figure 5
	January, 2016	Current Parcel Map, Emery Village Center