

EAST BAY ASIAN LOCAL DEVELOPMENT CORPORATION

BUILDING HEALTHY AND VIBRANT NEIGHBORHOODS SINCE 1975



By Alameda County Environmental Health 11:51 am, Feb 16, 201t

Board of Directors	February 11, 2016			
Emily Lin Chair				
Korin Crawford Vice Chair	Ms. Dilan Roe, P.E., Program Manager Ms. Karel Detterman, P.G., Hazardous Materials Specialist Alameda County Health Care Services Agency Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250			
Jim Govert Secretary				
John Benson Treasurer	Alameda, California 94502			
Christine Carr	RE: Revised Work Plan for Further Subsurface Investigation, Properties at 760			
Debra Chester	22 nd Street and 2201 Brush Street, Oakland, California 94612. Evel Look Case No. BOOOO3153			
Dianne Rush Woods	Geotracker Global ID T1000006348			
Felicia Scruggs-Wright				
Hydeh Ghaffari	Dear Alameda County Environmental Health:			
Joanne Tornatore-Pili	Please find attached for your review the following document:			
K.M. Tan	 Revised Work Plan for Eurther Subsurface Investigation, Properties at 760 22nd 			
Leslie Francis	Street and 2201 Brush Street, Oakland, California 94612. (ACEH Document No. RO3153 WP R 2016-01-31)			
Natalia F. Lawrence				
Rosalyn Tonai	I declare, under penalty of perjury, that the information and/or recommendations			
Roy Ikeda	contained in the attached document or report is true and correct to the best of my knowledge.			
Ted Dang				
Thai-An Ngo	Please call me at (510) 287-5353 ext. 339 if you have any questions.			
Thomas Mishima				
Executive Director Joshua Simon	Sincerely,			
	Evett Chy Jr.			
	Everett Cleveland Jr.			
	Senior Project Manager			



January 31, 2016

Ms. Dilan Roe, P.E., Program Manager Ms. Karel Detterman, P. G., Hazardous Materials Specialist Alameda County Health Care Services Agency Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502

RE: Revised Work Plan for Further Subsurface Investigation, Properties at 760 22nd Street and 2201 Brush Street, Oakland, California 94612. Fuel Leak Case No. RO0003153 GeoTracker Global ID T10000006348

1.0 INTRODUCTION

East Bay Asian Local Development Corporation (EBALDC) has requested that Essel Environmental Consulting (Essel) prepare this revised work plan proposing further subsurface investigation at the properties located at 760 22nd Street and 2201 Brush Street in Oakland, California. The further investigation is designed to address data gaps/concerns identified by Alameda County Environmental Health (ACEH) in a December 30, 2015 meeting between ACEH, EBALDC, and Essel. These data gaps/concerns are related, in part, to unexpected contaminants and features discovered during a subsurface investigation performed by Essel in September and October 2015 and, in part, to limited access to a former oil-changing pit located at the site. The additional information gathered during the further investigation will aid in developing a Site Development Review package and associated conceptual Remedial Action Plan (RAP). Elements of the further investigation will include collecting additional soil vapor and soil chemical and physical properties data at and around former gasoline and diesel underground storage tanks (USTs) and fuel dispenser locations; performing a focused health risk assessment in the area of the former USTs; investigating potential contaminant impact to soil directly beneath the oil-changing pit; and investigating the extent of petroleum-hydrocarbon impact to soil and ground water at the west-central edge of the properties around a location of anomalously low density soil and a suspected tank vent pipe.

1.1 Site Location, Description, and Planned Development

The two properties are located at the addresses of 760 22nd Street and 2201 Brush Street in Oakland, California and are located a short distance to the southwest of the intersection of West Grand Avenue, San Pablo Avenue, and Interstate Highway 980. The adjacent and abutting properties are on the west side of Brush Street between West Grand Avenue on the north and 22nd Street on the south.

At present, the northernmost property at 760 22nd Street is occupied by a metal frame/metal siding building, contains two mobile trailers and a number of parked buses, and is paved with concrete. A below grade pit, reportedly used for servicing large vehicles (trucks and buses) and referred to as the oil-changing pit, is located in the northern portion of the on-site building. This pit was recently uncovered and noted to be constructed of concrete with dimensions of 3½ feet wide by 15½ feet long by 4½ feet deep. The south-adjacent and abutting property at 2201 Brush Street is unpaved and also used to park buses. A 7,000-gallon diesel UST and a 2,000-gallon gasoline UST formerly were located at and next to (off-site, beneath the city sidewalk) the northeastern corner of the site, respectively. A small, raised concrete pedestal located at the



east-central edge of the property is the location of a former fuel dispenser. The current site features and locations of the former USTs and fuel dispenser are shown on Plate 1.

East Bay Asian Local Development Corporation plans to redevelop the 760 22nd Street/2201 Brush Street properties with a multistory residential structure containing 59 residential living units. Preliminary architectural plans show that the building will cover the entire property. The building will include a podium garage with parking at ground level and below ground level. Two, 3-high puzzle lifts will be constructed near the center of the property for below ground parking (total of 45 parking spaces). Below grade parking will involve excavation of soil beneath this central portion of the property to an approximate depth of 12 feet below the ground surface. Two elevators and two stairwells are proposed to be located at the northeastern corner of the building, which will overlie the location of the former diesel UST. One elevator and two stairwells are proposed to be located in the southeastern portion of the building in an area straddling the line between the two properties. Architectural drawings are, at present, preliminary; however elevator shafts may extend to a depth of 7 feet below the ground surface. Essel understands that the stairwells will not extend below grade.

The ground floor of the proposed structure will contain offices, lobbies, an employee break room, conference room, and child-care reception area, which will be located along the northern and eastern sides of the building. The entire second floor is planned as a child day-care center and higher floors will be used for residential living. The elevators will extend to all floors. Plate 2 shows the site features and the planned ground floor development.

1.2 Previous Work

Previous environmental work included underground storage tank (UST) removal; Phase I Environmental Site Assessments; subsurface investigations related to the USTs, fuel dispenser, and oil-changing pit; and geophysical surveys. These activities, performed by others, took place between 1986 and 2012 and are described in previous documents submitted by Essel (2015a).

Essel (2015b) performed additional subsurface investigation in September and October 2015 to characterize the nature and extent of petroleum hydrocarbons in soil, ground water, and soil vapor at the site and off-site in relation to the criteria of the Low-Threat Underground Storage Tank Case Closure Policy of the State Water Resources Control Board. The findings of the investigation showed:

- A geophysical anomaly, suggesting unusually low density soil, or a possible void, and a nearby standpipe indicative of a UST vent pipe located at the west-central edge of the site;
- Relatively high concentrations of total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd), and as motor oil (TPHmo) in soil (potential secondary source material) within a relatively narrow zone (13 to 16 feet) at and below the ground-water surface beneath the area of the former gasoline and diesel USTs and in the vicinity of the geophysical anomaly;
- Moderately high concentrations of TPHg in soil between 8 and 15 feet below the ground surface under the former fuel dispenser;
- The absence of detectable volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbon (PAH) compounds in soil;
- The absence of free-phase petroleum product on the ground water;



- The virtual absence of VOCs (particularly benzene, methyl tertiary butyl ether, and naphthalene) and PAHs in ground water;
- Vinyl chloride in one ground-water sample from the former gasoline UST area at a concentration slightly greater than the maximum contaminant level (i.e., drinking water standard);
- Chlorinated hydrocarbons tetrachloroethene and *cis*-1,2-dichloroethene in soil vapor; and
- Vinyl chloride in soil vapor at the former USTs location at a concentration higher than the applicable default environmental screening level for vapor intrusion.

The findings of the subsurface investigation showed that the site appears to meet most of the general and media-specific criteria of the low-threat UST closure policy. Secondary source soil is present within a narrow vertical zone at the ground-water surface and is inferred to be local in lateral extent at the locations of the former USTs, fuel dispenser, and west-central edge of the site. The depth of the significant contamination and the absence of health-risk indicator petroleum constituents in either soil or ground water indicate little potential for risks to human health or the environment. Essel concluded that investigation of the potential presence of a UST and the extent of subsurface contaminants in the area of the geophysical anomaly was warranted and that focused remedial action in the areas of elevated petroleum concentrations may be warranted.

2.0 PROPOSED WORK

The proposed work will include sampling and analyzing soil, ground water, and soil vapor at select locations at the site and assessing risk in the local area of the former USTs. The work tasks proposed are described as follows.

2.1 Soil Vapor and Soil Physical Properties

As indicated previously, elevator shafts may extend as deep as 7 feet below the ground surface. Vinyl chloride was detected in soil vapor at a depth of 10 feet and in ground water at a depth of approximately 14 feet below the ground surface in vapor well SV-1 and boring ECB-4, located in the former UST excavation. Tetrachloroethene was also detected in soil vapor in vapor well SV-2, located next to the former fuel dispenser. The ACEH expressed concern about the presence and potential health risks of these non-petroleum chlorinated hydrocarbons and wants further investigation to identify source(s) of these chlorinated hydrocarbons.

Essel proposes; therefore, to collect a second round of soil vapor samples from existing vapor wells SV-1 and SV-2 and install five additional soil vapor wells at step-out locations from 15 to 20 feet to the north, west, and south of wells SV-1 and SV-2. The existing and proposed vapor well locations are shown on Plate 1 and Plates 3 and 4 are cross sections that show the surface and subsurface features at the locations of wells SV-1 and SV-2. Borings advanced during Essel's September 2015 investigation in this area encountered silty clay from the ground surface to 8 feet below grade; silt, silty sand, and sand in a zone from approximately 8 to 12 feet below grade; and silty clay below 12 feet in depth. Ground water was encountered at a depth of 14 feet in September 2015 and is likely at a shallower depth at present. The five proposed vapor wells will be installed below the shallow clay and within permeable sediments. The minimum depth of wells will be 5 feet. Nested wells may be installed if two permeable zones and a sufficiently thick intervening impermeable unit are encountered. The borings advanced for the vapor wells



will be field screened for volatile contaminants and logged as described in Section 2.4.2 and select soil samples will be collected for possible laboratory analysis based on field indications of volatile contaminants.

Wells SV-1 and SV-2 will be purged and sampled using the procedures performed during the October 8, 2015 sampling event. These wells will be re-sampled to assess any seasonal variation in contaminant concentrations and the data will be used to evaluate the stability of the detected concentrations through time. Purge volumes of the new vapor wells will depend on the time of sampling after vapor well installation. The soil-vapor well purging and sampling system will consist of a 6-liter purging Summa canister; 1-liter sampling Summa canisters; and a manifold containing vacuum gauges, a flow controller, and moisture filter. The sampling procedure will substantially conform to the California Department of Toxic Substances Control's (DTSC's) vapor intrusion guidance and will include both shut-in testing and leak testing using isopropyl alcohol as a tracer gas. The sampling system will be contained under a box shroud and the tracer gas will be placed inside the shroud to check for leaks in fittings.

Soil vapor and soil samples will be submitted to accredited testing laboratories using Chain-of-Custody procedures. The soil vapor samples will be analyzed for total petroleum hydrocarbons-gasoline range using United States Environmental Protection Agency (USEPA) Method TO-3, VOCs using USEPA Method TO-15, and methane, oxygen, nitrogen, and carbon dioxide using American Society for Testing and Materials Method D-1946. Laboratory analytical results will be compared to the October 2015 results to assess differences and trends in contaminant concentrations and for use in a focused health-risk assessment. Soil samples will be analyzed for total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd), and as motor oil (TPHmo), using USEPA Method 8015, and VOCs using USEPA Method 8260.

To aid in evaluating human health risk, Essel proposes to advance two borings adjacent to vapor wells SV-1 and SV-2 and collect soil samples for laboratory testing for physical properties. Plate 1 shows the locations of the proposed borings. The DTSC's vapor intrusion guidance recommends collecting a minimum of three soil samples at locations distributed laterally across a site. Soil will be collected at two laterally separated locations for this investigation because of the focused area of the health risk assessment. The borings will be advanced to an approximate depth 10 feet below grade using a direct push drill rig. Two soil samples will be collected from each boring; one at the approximate depths at which the vapor wells are set (9 to 10 feet below the ground surface) and one from the overlying silty clay at a depth between 4 and 5 feet below grade. The soil samples will be collected and submitted to a laboratory using procedures described in Section 2.4.3.

The samples will be analyzed for the following physical properties:

- Bulk density and grain density;
- Total porosity;
- Moisture content;
- Volumetric moisture and air content;
- Total organic content;
- Fraction of organic carbon; and
- Grain-size distribution to evaluate percent clay, silt, and sand.

The physical properties data will be input into calculations evaluating migration of contaminant vapors in soil.



2.2 Human Health Risk Assessment

A focused human health risk assessment will be performed for the area of the former USTs using soil vapor and soil physical property data collected pursuant to Section 2.1. The proposed building will include elevators and stairwells overlying the area of the former tanks. The elevator shafts, which might extend from a maximum 7 feet below the ground surface into the building, are presumed to present a potential exposure pathway for subsurface contaminants. The assessment, performed by a toxicologist, will evaluate health risks from intrusion of VOCs detected in the soil vapor and include evaluating vapor intrusion risk without engineering controls at the elevator shafts.

2.3 Investigation Beneath the Oil-Changing Pit

Alameda County Environmental Health expressed concern about potential impact to soil beneath the oilchanging pit; therefore, Essel proposes to collect soil samples at depths beneath the floor of the pit and submit the samples for laboratory analysis. Up to a maximum of four locations will be sampled as shown on Plate 1. The sample locations generally will be equally spaced along the centerline of the pit, but may be selected based on the presence of heavy oil staining, cracks in the concrete floor, and the presence of a floor drain(s). The intent of sampling will be to identify the maximum potential impact, to assess the depth of impact beneath the concrete pit, and evaluate whether health-risk indicator petroleum constituents are present that would suggest a health risk.

The concrete floor will be cored at the selected sample locations and a hand auger and slide-hammer sampling tool will be used to advance borings and collect soil samples. Samples of native soil are proposed to be collected at approximate depths of 1 foot and 5 feet below the base of the concrete floor at each location contingent on the actual impact observed in the borings. Attempts will be made to collect samples at greater depth where field evidence indicates impact is present at the 5-foot depth. If fill materials are encountered, the shallow sample will be collected at or a few inches below the base of the fill. Essel will hand auger to the top of the sample depth and use the slide-hammer tool to collect samples. The slidehammer tool will be fitted with a 2-inch-diameter by 6-inch-long clean stainless steel or brass sleeve and will be advanced through the sampling interval to fill the sleeve with soil. After collecting the 1-foot-depth sample, the hand auger will be used to advance to the 5-foot depth and the slide-hammer tool, fitted with a new clean sleeve, will be used to collect the soil sample at this depth. Deeper samples will be collected in the same manner. On retrieval, sleeves will be removed from the hammer tool and sealed with Teflon sheets, plastic end caps, and tape and will be labeled and place on ice in a closed cooler. The hand auger and hammer sampling tool will be cleaned in a detergent solution and rinsed in tap water before collecting each sample. Hand auger cuttings will be field screened for volatile contaminants and logged as described in Section 2.4.2.

Soil samples will be submitted to a state-certified testing laboratory using Chain-of-Custody procedures. Essel proposes to analyze the samples (maximum of eight) for TPHg, TPHd, TPHmo (USEPA Method 8015), and VOCs (USEPA Method 8260). Select samples that exhibit field evidence of impact will also be variously analyzed for polynuclear aromatic hydrocarbons PAHs (USEPA Method 8270-selective ion monitoring [SIM]), polychlorinated biphenyls-aroclors (PCBs; USEPA Method 8082), and the metals cadmium, chromium, lead, nickel, and zinc (USEPA Method 6020).



2.4 Investigation at the Geophysical Anomaly

Significant concentrations of TPHg, TPHd, and particularly TPHmo were detected in soil at the groundwater surface in boring ECB-10 during Essel's subsurface investigation in September 2015. This boring, located at the west-central edge of the site, was advanced at a location less than 10 feet to the north of a small area of unusually low density soil discovered during the geophysical survey to clear boring locations. This anomaly was reported by the geophysical equipment operator to start at a depth of 3 to 5 feet below the ground surface. Essel (2015b) indicated that additional investigation of this anomaly and the extent of petroleum impact to soil and ground water in the area was warranted and ACEH has agreed with this conclusion. Following are descriptions of the work elements for this portion of work.

2.4.1 Permit, Utility Clearance, and Health and Safety

Essel will submit an application to advance the borings to the Alameda County Public Works Agency (ACPWA) and will notify the ACPWA a minimum of 5 working days before the start of on-site activities. Essel will mark the proposed boring locations and notify Underground Services Alert of Northern California and Nevada a minimum of 48 hours before the date of planned drilling. Essel will also subcontract with a private utility locator to clear boring locations with respect to potential on-site underground utilities. The private utility locator will be used to further define the approximate surface dimensions of the anomaly.

Essel will update the existing site-specific Health and Safety Plan (Plan) before conducting fieldwork and this Plan will be available at the site during field activities. Essel and subcontractor personnel will be apprised of potential on-site hazards during a field orientation meeting that will be conducted before field work begins.

2.4.2 Borings

Up to seven small-diameter soil borings are proposed to be advanced at the location of the anomaly and to the north, east, south, and west of the anomaly to delineate, as is practical, the vertical and lateral extent of impact. Further definition of the anomaly will be made during utility clearance and three borings will be placed at locations from 10 to 15 feet from the edge of the anomaly. A second group of three step-out borings will be advanced at locations at estimated distances of 10 to 15 feet (or other distances dictated by field observations and site constraints) to the north of boring ECB-10 and to the east and south of the first group of borings. Plate 1 shows the proposed boring locations.

A licensed drilling contractor will advance borings using a direct-push drill rig equipped with a 2¹/₂-inchoutside-diameter, hollow steel rod. Based on observation of discolored soil in boring ECB-10 between 14 and 17 feet below grade, borings are anticipated to be advanced to a maximum depth of 20 feet below the ground surface. Continuous soil cores will be collected from the borings in clear plastic sleeves that will be contained inside the steel rod. Each sleeve will be removed from the core barrel after each sampling interval and replaced with a clean plastic sleeve for the next lower sampling interval. Soil cores retrieved from the borings will be screened in the field for evidence of contaminants. A photoionization detector (PID) will be used to check for volatile organic vapor concentrations. Field screening will also include visual observation of the soil for discoloration and noting any odors. Soil encountered during drilling will be described and classified using the Unified Soil Classification System.



Drilling equipment will be decontaminated between boring locations. After drilling and sampling (described below), each borehole will be backfilled with neat cement slurry from the total depth of the boring to the ground surface. A representative of the ACPWA will witness backfilling of the boreholes per requirements of the drilling permit.

2.4.3 Sampling Soil and Ground Water

Soil samples selected for laboratory analyses will be collected from the borings with the intent of defining the upper and lower limits of impact and the potential maximum concentrations in each boring using field indicators (PID readings, odor, discoloration) and meeting the low-threat UST closure policy criteria for vapor intrusion. The number of samples colleted for analyses may range from two to four based on what is encountered in the borings. One sample each will be collected in the 0- to 5-foot and 5- to 10-foot-depth interval from the boring advanced through the center of the geophysical anomaly for laboratory analysis to address the direct exposure and outdoor air criteria of the low-threat closure policy criteria. Additional soil samples will be collected at depths where discoloration or odors are observed/noted, near the air/water interface, and below the depth of impact noted in the soil core. Soil samples selected for laboratory analysis will be retained in the plastic sleeves. A minimum 6-inch-long section of the plastic sleeve will be cut at the selected sample depth and the ends of each sleeve will be covered with Teflon sheets, sealed with plastic caps, and wrapped with duct tape. Each sample will then be labeled with a unique identifying number and placed on ice in a cooler pending delivery to the laboratory.

Ground-water samples will be collected from the borings through ³/₄-inch-diameter polyvinyl chloride (PVC) casings that will be placed in each borehole. After placement, each temporary well will be checked for free-phase petroleum product using an electronic oil-water interface probe. Water samples will be collected using ¹/₄-inch-diameter polyethylene tubing, which will be inserted into the PVC casings and attached to a peristaltic pump, or by bailing. Water samples will be placed into laboratory-supplied containers that will be of appropriate size and contain the appropriate preservative for the laboratory analyses requested. Sample containers will be filled completely to eliminate air bubbles, sealed with the container caps, labeled with a unique identifying number, and placed on ice in a closed cooler.

Essel will complete Chain-of-Custody forms for both soil and ground-water samples. These forms will accompany the samples to the laboratory.

2.4.4 Laboratory Testing

Soil and ground-water samples will be analyzed by a state of California certified testing laboratory. Soil and ground-water samples will be submitted for analysis for TPHg, TPHd, and TPHmo (USEPA Method 8015), and VOCs (USEPA Method 8260). Selected soil and ground-water samples will be analyzed for PAHs (USEPA Method 8270-SIM) and PCBs (USEPA Method 8082) and cadmium, chromium, lead, nickel, and zinc (USEPA 6020).

2.5 Meeting and Technical Report

On receipt of the investigation results, Essel will schedule a meeting with ACEH and EBALDC to review findings. A technical report will be prepared for the investigation and will present the results of field and



laboratory work, interpretations of the data collected, conclusions and recommendations, and updated conceptual site model and data gap summary tables. This report, along with the human health risk assessment and a conceptual remedial action plan, will be incorporated into a Site Development Review package. The report will be signed and stamped by appropriately licensed persons.

3.0 REFERENCES CITED

Essel Environmental Consulting, 2015a, Work plan, additional subsurface investigation, properties at 760 22nd Street and 2201 Brush Street, Oakland, California 94612. Project No. 15166, April 8.

____, 2015b, Soil and ground-water investigation report, properties at 760 22nd Street and 2201 Brush Street, Oakland, California 94612. Project No. 15166, November 6.

ESSEL ENVIRONMENTAL CONSULTING

lger C. Witham

Rodger C. Witham Senior Geologist

Nik Lahiri

Nik Lahiri Principal

Attachments:

- nts: Plate 1 Site Plan and Proposed Investigation Locations Plate 2 – Site Plan and Future Ground Floor
 - Plate 2 Site Plan and Future Ground Flo
 - Plate 3 Cross Section D-D'
 - Plate 4 Detail of Cross Section C-C'











EXPLANATION

	APPROXIMATE PROPERTY BOUNDARY
٠	SOIL BORING LOCATION (PES ENVIRONNMENTAL, INC., 2005)
•	SOIL BORING LOCATION (PES ENVIRONNMENTAL, INC., 2011)
•	SOIL BORING LOCATION (ESSEL, 2015)
×	SOIL VAPOR PROBE LOCATION (ESSEL, 2015)
	FORMER UNDERGROUND STORAGE TANK
D	DIESEL
G	GASOLINE
7	BUILDING FOOTPRINT
	LANDSCAPING

NOTES: UNDERGROUND STORAGE TANK LOCATIONS FROM HAGEMAN-SCHANK, INC. (1987)

> ECB-7 ADVANCED 30 DEGREES FROM VERTICAL. DASHED LINE SHOWS TRACE OF BORING.





EXPLANATION

930

D

G

SAMPLE LOCATION

< LESS THAN

-- NOT ANALYZED

- ▼ WATER LEVEL

SEE PLATE 1 FOR LOCATION OF CROSS SECTION

200 TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

- 310 TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL 7,000-GALLON DIESEL UST (ESTIMATED FORMER LOCATION) 2,000-GALLON GASOLINE UST (ESTIMATED FORMER LOCATION)

PROJECT NO.	DRAWN BY	REPORT DATE
15166	EC	January 2016
Essel Enviro 564 Market Street San Francisca, California (415) 938-7002	Consulting	







0

0

PROJECT NO.	DRAWN BY	REPORT DATE	
15166	EC	January 2	2016
Essel Enviro 564 Market Street San Francisco, California (415) 938-7002	Consulting		

SAMPLE LOCATION

АL	PETROLEUM	HYDROCARBONS	AS	GASOLIN	١E
ΑL	PETROLEUM	HYDROCARBONS	AS	DIESEL	
AI	PFTROI FUM	HYDROCARBONS	AS	MOTOR	OII

SEE PLATE 1 FOR LOCATION OF CROSS SECTION



