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Sent: Saturday, October 15, 2016 4:52 PM
To: Jurek, Anne, Env. Health
Cc: Roe, Dilan, Env. Health; Ash Zaki; Mark Youngkin
Subject: Draft Work Plan_Mercedes-Benz of Oakland_344-29th Street, Oakland (RO0003220)
Attachments: RO0003220_Draft Work Plan_344-29th Street, Oakland_10-14-2016.pdf

Anne,

On behalf of Mercedes-Benz of Oakland, Wheeler Group Environmental, LLC is pleased to attach the PDF copy of our Draft Work Plan for Proposed Soil and Groundwater Investigation Activities at the subject property in Oakland, CA. The Work Plan was requested in the Alameda County Department of Environmental Health Letter dated July 15, 2016.

The July 15, 2016 Letter also requests upload of GGTR's November 11, 2013 UST Closure Report to the State GeoTracker Database. Please confirm that the document file name to be used for uploading is RO3218_TNK_R_2016_10_14 and not RO3220_TNK_R_2016_10_14. Please contact us with any questions or concerns.

Respectfully Submitted,

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DRAFT
WORK PLAN



Mercedes-Benz of Oakland
344-29th Street, Oakland, California

October 14, 2016

Project No. 2016102
ACDEH-LOP Fuel Leak Case No. RO0003220
GeoTracker Global ID No. T1000009111

Prepared For:

Mercedes-Benz of Oakland
Attention: Mr. Ash Zaki
2915 Broadway, Oakland, California

Prepared By:



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Wheeler Group Environmental, LLC

DRAFT

WORK PLAN

**Mercedes-Benz of Oakland
344-29th Street, Oakland, CA**

October 14, 2016

INTRODUCTION

On behalf of Mercedes-Benz of Oakland, Wheeler Group Environmental, LLC (Wheeler Group) is pleased to submit this Work Plan concerning the proposed investigation activities at the subject commercial property located at 344-29th Street in Oakland, California (called Site or subject property in this work plan). Wheeler Group reviewed the *Underground Storage Tank Closure Report* dated November 11, 2013, prepared by Golden Gate Tank Removal, Inc. The Alameda County Department of Environmental Health (ACDEH) is the lead regulatory agency for the case at the Site. The ACDEH manages the site as Fuel Leak Case No. RO0003220. The work plan was prepared in response to the July 15, 2016, letter issued by the ACDEH. The letter stated “we request a draft work plan that presents a scope of work to further delineate the lateral extent of the leak at soil and groundwater at the site.” for the contamination apparently associated with one 600-gallon waste oil underground storage tank (UST) removed from the Site by Golden Gate Tank Removal, Inc. on September 23, 2013.

Figure 1 is a *Site Location Map* showing the general location of the subject property in Oakland. Figure 2 is a *Site Vicinity Map* showing land use of the surrounding neighborhood. Figure 3 is a *Site Plan* showing the property and former/existing features and the approximate location of the former UST and confirmation samples. Figure 4 shows a compilation of groundwater flow direction information. Figures 5 through 8 are potential plume radius maps with sensitive receptors. Figure 9 titled Proposed Work shows the location of the newly proposed soil borings for collection of soil, soil gas, and grab groundwater samples. In general accordance with the aforementioned letter, the purpose of this work plan is to describe the procedures and methods used to define the extent of the waste oil-impacted soil and groundwater at the Site.

SITE LOCATION

The Mercedes-Benz of Oakland facility is located at the southwest corner of Broadway and 29th Street between Broadway and Webster Street, in the Auto Row District of Oakland, California; see Figure 1 *Site Location Map*. The irregular-shaped lot is improved with various co-joined commercial structures and parking lot used for an automobile dealership. The topographic elevation of the Site is estimated at approximately 40 feet above mean sea level. The Site and immediate surrounding properties slope towards the southeast and nearby Glen Echo Creek. As shown on Figure 1, the nearest surface water is Glen Echo Creek located about 650 feet east of the Site that flows southward towards Lake Merritt. Glen Echo Creek flows on the surface between 29th and 30th Streets then enters a culvert at 29th Street and flows underground from there to Lake Merritt. Commercial properties surround the Site consisting of hospital and medical related buildings to the north and west. Automobile sales and service buildings are found to the south and southeast. To the east is a large parking lot and grocery store facility. See Figure 2 *Site Vicinity Map* that shows land use of the surrounding neighborhood.

SITE DESCRIPTION & USE

Site Address:	344-29 th Street (posted as 2915 Broadway) Oakland, California
Site Location:	Auto Row District
County:	Alameda
General Setting:	Commercial neighborhood
Parcel Number:	9-701-7, 8, 9, 10
Property Type:	Commercial
Elevation:	Approximately 40 feet above mean sea level
Building Type:	Multi-level automobile sales building
Basement:	Multi-level on sloping lot
Foundation:	Concrete Slab on Grade
HVAC:	Natural gas
Source of Water:	Municipal
Sewage Disposal:	Municipal
Solid Waste Disposal:	Municipal
Utilities:	Municipal water, electricity, natural gas and sewer infrastructure is provided to the area by utility district
Primary Access:	Broadway and Webster Street
Number of Occupants:	One
Name:	Mercedes-Benz of Oakland

Figure 3 *Site Plan* shows a sketch of the current configuration of the Site with the location of the former underground storage tank (UST).

ENVIRONMENTAL SITE HISTORY

One underground storage tank (UST) was located beneath the sidewalk on Webster Street at property address of 344-29th Street (or shown as 2928 Webster Street on Google Maps 2016). A “Leak Alert” monitoring system panel is located on the interior building wall adjacent to the former location of the UST. One UST fill port was present in the sidewalk above the UST. The UST was a used oil tank connected to an adjacent remote fill within the former service shop of the Mercedes-Benz automobile dealership facility. A two-inch diameter observation monitoring well to a total depth of 10 feet below grade was located at the northwest corner of the tank pit. The disposition of the UST is documented in the Golden Gate Tank Removal, Inc. report titled “Underground Storage Tank Closure Report” dated November 11, 2013, as summarized below.

Closure of Underground Storage Tank

On September 18, 2013, Golden Gate Tank Removal, Inc. (GGTR) mobilized its equipment to the Site. GGTR pumped the residual product from the tank and piping into ten 55-gallon steel drums (approximately 500 gallons of residual product). The concrete sidewalk covering the tank was removed and the overburden soil covering the tank was excavated and temporarily stockpiled. The bottom of the tank was measured at 10 feet below grade (fbg). The exposed remote fill piping was drained, cut, removed and plugged at the east corner of the excavation sidewall along the building foundation. The cylindrical tank had a capacity of approximately 600 gallons, measuring approximately 6 feet in length by 4 feet in diameter, and was constructed of single wall bare steel. The UST was located approximately three feet from the building foundation. GGTR washed the interior of the tank with 180-degree water using a 3,000-psi pressure washer. On September 23, 2016, GGTR removed the tank sections from the excavation. After a visual inspection, the tank and piping were loaded onto a truck and transported as scrap metal to Circosta Iron & Metal, Inc. in San Francisco, California.

The tank was found to be in good condition with no visible hole. Discoloration and obvious hydrocarbon odor was observed in the soil underlying the former tank location. Soil observed surrounding the UST was predominantly moist to wet, dark greenish gray, silty clay with rock fragments. The bottom of the tank pit was 10.5 feet below sidewalk grade and consisted of pea gravel base layer. Water was observed recharging the excavation during the tank removal activities and approximately 300 gallons of water was in the bottom of the tank pit with a “heavy film of oil.” The depth to groundwater measured in the observation well on September 23, 2013 was 6 feet below grade. The water stabilized in the excavation at approximately 7 feet below grade (fbg; referenced to sidewalk surface). Because of the obvious soil contamination beneath the UST, the Oakland Fire Department inspector stated that an Underground Storage Tank Unauthorized Release (Leak) / Contamination Site Report was required for the observed contamination.

On September 23, 2016, under the direction of the SFDPH inspector, GGTR collected two four-point composite soil samples from the stockpiled overburden soil, two discrete confirmation soil samples from the former tank excavation, two grab water sample from the former UST cavity, and one remote fill soil sample. Soil samples 9378-N-6 and 9378-S-6 were collected from the excavation sidewalls at

the north and south ends of the excavation at approximately 6 fbg, respectively. Each soil sample was collected in relatively undisturbed soil from the previously measured groundwater interface level. The water accumulated in the tank pit was pumped out prior to recharge and water sampling. Water sample 9378-GW-7 was collected from the excavation bottom at approximately 7 fbg and water sample 9378-OW-6 was collected from the observation well. All samples were transported to Accutest Northern California, Inc. (State ELAP Certification #2910) under formal chain-of-custody protocol for the required analyses. Figure 3 *Site Plan* depicts the approximate soil and water sample locations.

All UST removal samples were analyzed for Total Petroleum Hydrocarbons (TPH) as diesel (C10-C28) and TPH as motor oil (>C28-C40) by EPA Method SW846 8015B M, TPH as gasoline range organics (GRO), Volatile Organic Compounds (VOCs) by EPA Method SW846 8260B and Poly Aromatic Hydrocarbons (PAHs) by EPA Method SW846 8270C. Additionally, sample 9378-OW-6 and soil samples were analyzed for Cadmium, Chromium, Lead, Nickel and Zinc by EPA Method SW846 6010B. A summary of the analytical results is presented in the following tables:

Table 1 - Soil Sampling & Laboratory Analysis Results for Petroleum Hydrocarbons

Table 2 - Water Sampling & Laboratory Analysis Results for Petroleum Hydrocarbons

Table 3 – Soil Sampling & Laboratory Analysis Results for Metals

Table 4 – Water Sampling & Laboratory Analysis Results for Metals

Table 5 – Soil Sampling & Laboratory Analysis Results for VOC

Table 6 – Water Sampling & Laboratory Analysis Results for VOC

A copy of the laboratory certificate of analysis and chain of custody form is included as an attachment to the GGTR Tank Closure Report dated November 11, 2013.

Over-Excavation and Confirmation Sampling

Based on the elevated concentrations reported in the confirmation samples collected during UST removal, GGTR on October 16, 2013, performed additional over-excavation of contaminated soil and additional confirmation sampling. GGTR removed approximately 24.52 tons of hydrocarbon-impacted soil surrounding the UST cavity to a total depth of 13 feet below sidewalk grade. The excavated soil was transferred directly to a dump truck for off-site disposal. The observation well located adjacent to the north end of the UST (and well casing extending to a total depth of 10 fbg) was completely removed during the over excavation activities. GGTR collected two additional discrete confirmation soil samples. Soil sample 9378-EX-N-13 was recovered beneath the north tank bottom at approximately 13 fbg and 9378-EX-S-13 was collected beneath the south tank bottom at approximately 13 fbg. GGTR observed groundwater recharging the bottom of the excavation. NRC Environmental Services pumped approximately 250 gallons of water from the excavation. Following adequate groundwater recharge, GGTR collected a grab water sample 9378-GW-11.5 from the excavation at 11.5 fbg. On October 17 and 18, 2013, GGTR backfilled the excavation with clean import material and replaced the concrete sidewalk. A summary of the analytical results is presented in the attached tables and a copy of the laboratory certificate of analysis and chain of custody form is included as an attachment to the GGTR Tank Closure Report dated November 11, 2013.

Findings of UST Removal and Over-Excavation

The former 600-gallon waste oil UST was removed from the subject property on September 23, 2013. There were no visible holes observed in the tank. However, soil discoloration and hydrocarbon odors were observed in the underlying soil during the tank removal activities. The results of laboratory analysis of confirmation soil samples revealed elevated concentrations of petroleum hydrocarbons in the tank bottom soil samples and stockpiled overburden soil samples. Additional over-excavation of soil followed with two confirmation soil samples at 13 feet below sidewalk grade. The laboratory reported petroleum hydrocarbons above Tier 1 Environmental Screening Levels in both soil samples at 302 and 626 mg/kg. A confirmation water sample from the tank excavation at 1860 µg/L also exceeded Tier 1 petroleum hydrocarbon screening levels. On July 15, 2016, the Alameda County Department of Environmental Health (ACDEH) issued its letter requesting a work plan be prepared for further investigation of the extent of petroleum contamination. The letter indicated that “we request a draft work plan that presents a scope of work to further delineate the lateral extent of the leak at soil and groundwater at the site” for the contamination apparently associated with one 600-gallon waste oil underground storage tank (UST) removed from the Site by Golden Gate Tank Removal on September 23, 2013.

FORMER LUST CASE AT SITE

The subject property has a main posted address of 2915 Broadway currently used by Mercedes-Benz of Oakland. Alameda County records indicate that the 2915 Broadway address was formerly associated with European Motors LTD and Leaking Underground Storage Tank (LUST) case number RO0000702. On May 27, 1992, Alameda County UST Oversight Program issued a Remedial Action Completion Certificate (Without Regional Board Concurrence) that required no further action for the LUST case at the Site. The closure of the case was based on documents submitted by Miller Environmental Company (Miller). The document titled *Report on Limited Subsurface Environmental Investigation and Remediation of Contaminated Soil, Site Location: 2915 Broadway, Oakland, California* dated April 2, 1990, provides information on the historic LUST case. The following is a summary of the findings presented in the Miller report.

On November 20, 1989, the Robert J. Miller Co. removed three underground storage tanks (UST), and associated product piping and dispenser from the subject property with address of 2915 Broadway. The USTs consisted of a 1000-gallon diesel fuel tank, a 550-gallon gasoline tank, and a 4000-gallon gasoline tank. The Site has a significant topographic slope and two of the tanks were located in the lower parking area and the 4000-gallon gasoline tank was located in the upper parking area. Upon removal, all three tanks were observed to be in intact condition. However, the water present in the lower excavation was observed to have possible petroleum product floating on the water surface. A water sample from the lower tank pit contained significant concentrations of petroleum hydrocarbons. Approximately 23 cubic yards of contaminated soil was removed for offsite disposal. Confirmation soil samples collected from the upper excavation (4000-gallon tank)

contained non-detectable petroleum hydrocarbons. Confirmation soil samples recovered from the lower excavation had a maximum concentration of 60 mg/kg.

Because of the observed petroleum contamination on the water in the lower UST excavation, the Alameda County Local Oversight Program (LOP) opened a fuel leak case for the subject property. To address the LUST case resulting from the UST removal, Miller in 1990, drilled three exploratory borings surrounding the lower tank excavation and installed three groundwater monitoring wells. Each well was bored to a depth of 30 feet below ground level and slotted casing installed from 15 to 30 feet. Lithology encountered during the drilling consisted of silty to sandy clay from 7 to 30 feet. The clay was brown to olive green. During drilling, surface water flowed into the borehole from shallow fill materials above seven feet in depth. Water stabilized in the three monitor wells at depths of 10.4 to 12.4 feet with a groundwater flow direction to the southeast consistent with the topographic slope. Miller described the shallow groundwater aquifer as semi-confined due to the rise in groundwater elevation following the completion of drilling. No soil contamination was observed in the borings or soil samples. Groundwater samples recovered from the wells contained non-detectable to insignificant concentrations of petroleum hydrocarbons (maximum 0.06 mg/L TPH as Diesel).

The monitor wells were sampled for four consecutive quarters as presented in the Miller report dated January 13, 1992. The water sampling revealed non-detectable or insignificant concentrations of petroleum hydrocarbons in all three wells. Groundwater flow direction was consistently measured to the southeast towards Glen Echo Creek. From March 1990 through December 1991, the depth to groundwater ranged from 10.4 feet in well MW3 to 14.5 feet in well MW1. After four quarters of groundwater monitoring with favorable results, Miller recommended case closure for the LUST case at the Site.

REGIONAL & LOCAL GEOLOGY

The U.S. Geological Survey open-file report titled *Quaternary Geology of Alameda County and Surrounding Areas, California: Derived from the Digital Database Open-File 97-97* by E.J. Helley and R.W. Graymer dated 1997 provides information concerning the geology beneath the Auto Row District of Oakland. The geologic map provides a description of the generalized geologic conditions at the subject property. As shown on the map, the Site's vicinity is mainly underlain by three map units: Qhaf – alluvial fan and fluvial deposits of Holocene age, Qpaf – alluvial fan deposits of older Pleistocene age, and Qhb – basin deposits of Holocene age. The Site is shown on the border of the area of basin deposits and alluvial fan deposits. The basin deposits (Qhb) consist of very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to the bay mud (Qhbm). The younger alluvial fan and fluvial deposits (Qhaf) are brown or tan, medium dense to dense, gravely sand or sandy gravel that generally grades upward, to sandy or silty clay. The older alluvial fan and fluvial deposits (Qpaf) are brown dense gravely and clayey sand or clayey gravel that fines upward to sandy clay. These deposits display various sorting and are located along most stream channels. All Qpaf deposits can be related to modern stream courses.

Soil observed surrounding the underground storage tank (UST) at the Site was predominantly moist to wet, dark greenish gray, silty clay with rock fragments. The rock fragments observed at the Site suggest Artificial fill occurs in shallow surface soils. Previous borings drilled at the Site in 1990 encountered fill materials to six feet and silty to sandy clay from a depth of 7 to 30 feet below grade. The description of soils encountered during the UST removal and previous investigation appears consistent with the basin deposits of Holocene age (Qhb) shown on the geologic map.

The document titled Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, CA by Norfleet Consultants dated June 15, 1998 contains a plate titled “Structural Contour Map on Top of Bedrock” indicates an exploratory boring was drilled near to the subject property and this boring encountered hard bedrock at a depth of -339 feet below surface grade. The nearest surface exposures of bedrock are located about one mile northeast of the subject property. The U.S. Geological Survey open-file report titled Preliminary Geologic Map Emphasizing Bedrock Formations in Alameda County, California: Derived from the Digital Database Open-File 96-252 by R.W. Graymer, D.L. Jones, and E.E. Brabb dated 1996 provides a description of the bedrock. Three map units occur within the bedrock outcrop northeast of the Site Kfn - consisting of Franciscan Formation sandstone (graywacke) and shale; Kfgm – an intrusion of fine-grained quartz diorite into the sandstone; and Kjfm – Franciscan melange of sheared argillite, graywacke sandstone, chrt, shale, metachert, serpentinite, greenstone, amphibolite, tuff, eclogite, quartz schist, greenschist, basalt, marble, conglomerate, and glaucophane schist. At a depth of approximately 339 feet below surface grade at the Site may occur hard and sheared bedrock containing predominantly marine sandstone and shale of the Mesozoic Franciscan Complex.

GROUNDWATER CONDITIONS

Water was measured during the UST removal activities at the Site during September 2013 to be approximately six feet below surface grade in the UST observation well. During the 1990 monitoring well installations at the Site, surface water was observed flowing from a fill / gravel layer at a depth of 6-7 feet below grade whereas groundwater stabilized in the monitor wells at 10-12 feet below grade. Four quarters of groundwater monitoring from 1990 through 1991 consistently measured a groundwater flow direction towards the southeast and Glen Echo Creek. The shallow groundwater was described as semi-confined in the previous investigation as stabilized water elevation was higher than water encountered during drilling. During the field reconnaissance in September 2016, it was noted that topographic slope is pronounced at the Site with the slope directed towards the southeast and Glen Echo Creek. Wheeler Group assumes that the current flow direction is in the topographic down-slope direction consistent with the groundwater flow measurements from 1990-1991. Groundwater measurements from other nearby properties as shown on Figure 4 show possible influence by the major utility corridor along Broadway Avenue. Commonly, sanitary sewer lines are located at 12 feet below grade in major utility corridors.

Figure 4, *Groundwater Flow Direction Map*, summarizes groundwater flow information for the Site vicinity. Arcadis provided a description of the subsurface soil and groundwater conditions in its June 17, 2014 report titled *Conceptual Site Model and Low-Threat Closure Request, Volkswagen*

Automobile Dealership, 2740 Broadway Avenue, Oakland, California (available on GeoTracker website). The Volkswagen Automobile facility is located about two blocks south of the subject property. Soil borings drilled to depths of approximately 30 feet fbg encountered inter-bedded clay, silty clay, sandy clay, silt and sandy silt, and sand with the finer grained soils, silt and clay, being the predominant soil type. A sand layer was present between 11 and 21 feet below grade sloping in a northwesterly direction. Beneath the sand layer was lower permeability clay to a depth of approximately 22 to 23 feet below grade where sandy clay with semi-confined groundwater was observed. Shallow groundwater flows in a west to northwesterly direction as determined from eight monitoring wells. On December 10, 2013, groundwater elevations ranged from 21 to 25 feet above Mean Seal Level (msl).

The Geotracker website shows three cases located within a 1000-foot radius of the subject site as shown on Figure 4, Groundwater Flow Direction Map. Two other cases are located further out to the southwest of the Site. The nearest case is the Volkswagen Automobile case discussed above at 2740 Broadway. The data from eight monitoring wells shows a flow direction towards the west and northwest which his flowing uphill and towards the major utility corridor within Broadway Avenue. The next closest case is the Robert & Ruth Burrows Trust at 260-30th Street. The groundwater flow direction during this study was estimated from the topographic slope as towards the southeast and Glen Echo Creek. Another case is the Chevron #9-2506 located at 2630 Broadway. Studies of groundwater flow direction at this site produced variable results with flow directions towards the north, west and south. Influence by the major utility corridor along Broadway may have resulted in the high variability at this site. Two more distant cases at 488-25th Street and 2800 Telegraph Avenue show flow directions to the south towards San Francisco Bay and Lake Merritt.

Wheeler Group requested a well search on a two-mile radius from the Alameda County Public Works Agency, Water Resources Section. The agency provided a spreadsheet with 2637 listings of various types of wells. There does not appear to be any domestic or irrigation water wells listed within the 1855-foot radius for the plume buffer zone. The California Department of Water Resources provided a compact disc with 1,280 redacted multi-page PDF images of well logs. Well logs were discovered for the former LUST case at the subject property. Numerous well logs were observed from shallow borings and monitor wells from surrounding fuel leak cases. No obvious well logs for domestic drinking wells were found in the immediate vicinity of the subject property.

SENSITIVE RECEPTOR SURVEY

Wheeler Group prepared maps with representative plume lengths based on the constituents of benzene, MTBE and TPH as Gasoline according to the LTCP Technical Justification for Groundwater Media-Specific Criteria as shown on figures 5, 6, 7 and 8. Figure 5 shows the plume map for benzene with a radius of 554 feet. The topographic slope and previously determined groundwater flow direction are both to the southeast. A hospital facility is located up-slope across Webster Street to the west. Because of the southeast flow direction and slope, it is unlikely that the hospital is threatened by any groundwater plume originating from the subject property. To the southeast down-gradient direction is the Auto Row District of Oakland with numerous auto repair

shops and auto dealership facilities. Directly down-slope and southeast of the Site is the large parking lot for the Grocery Outlet market and commercial buildings housing Broadway Liquors and auto-related service businesses. No sensitive receptors were observed within the potential benzene plume to the southeast of the Site.

Figures 6, 7 and 8 show the plume maps for total petroleum hydrocarbons (TPH) as Gasoline, MTBE and TPH buffer zone with a radius of 855 feet, 1045 feet and 1855 feet, respectively. These potential plumes are very conservative because the release at the subject site involves a used oil tank and the technical guidance does not consider TPH as diesel or motor oil to be a key indicator of plume length. The hydrocarbons in the TPH as diesel and motor oil range are of low solubility and therefore create plumes which are usually shorter than those associated with gasoline releases. The plume maps show that Glen Echo Creek is a potential sensitive receptor in the down-gradient direction. Wheeler Group observed Glen Echo Creek during September 2016 to be an open channel east of the Site (Photograph No. 6) and within a subsurface conduit to the southeast of the Site (Photograph No. 7). Also observed were approximately ten (10) monitor well utility boxes in 29th Street that overly the Glen Echo Creek conduit (Photograph No. 8 shows one of the covers). Wheeler Group was unable to locate corresponding well logs in the DWR repository and the monitor wells (or other purpose) are apparently not listed in Alameda County well database.

SITE CHARACTERIZATION

Wheeler Group is proposing site investigation in the form of soil, soil gas and grab groundwater sampling to further assess the extent of contamination identified during the UST removal. The results will be utilized to delineate the lateral and vertical limits of residual waste oil-contaminated soil and groundwater in the vicinity of the former UST. The proposed site characterization boring/sampling locations are shown on Figure 9, *Proposed Work*. The following sections describe the procedures for the investigation work.

Scope/Sequence of Proposed Work Activities

The general scope of work and sequence of activities described and recommended in this work plan is outlined as follows:

- Obtain applicable permits as required from Alameda County Public Works Agency and City of Oakland
- Outline the proposed work area and boring locations in white surface paint and notify Underground Service Alert to clear for subsurface public utilities extending through the designated work area(s)
- Prepare the Site Health & Safety Plan for all proposed field work; schedule and notify all parties of confirmed field drilling/sampling date(s)
- Core drill and remove 6"-Diameter sections of concrete at each proposed boring location to facilitate access for drilling/sampling equipment

-
- Using limited-access, hydraulic GeoProbe drilling equipment, advance exploratory borings (B1 thru B5) to approximately 15 fbg at the proposed locations surrounding the former UST location as shown on Figure 9 titled *Proposed Work*. Borings B1 thru B4 will be located within ten feet of the former UST excavation limits as above ground and underground utility infrastructure allows. Boring B5 will be located within 10 feet down-gradient of the former remote fill location within the interior of the adjoining building. The remote fill was located down-gradient of the former UST location.
 - Collect continuous soil cuttings in each exterior borehole between 0.5 and 15 fbg for inspection, description and logging; recover continuous soil samples in each borehole by hydraulically pushing 4-foot sections of acetate plastic-lined steel drill tubes into relatively undisturbed soil
 - Recover discrete soil samples in each borehole at approximately 5, 10 and the groundwater interface from the drill tubes; appropriately seal, cap and label each soil sample for chilled storage and subsequent delivery to the analytical laboratory under proper chain of custody command. Recover additional discrete soil samples as needed where obvious evidence of contamination is observed.
 - Monitor in the field and record all recovered soil samples for total VOCs using a calibrated photo ionization detector (PID)
 - In a separate borhole adjacent to the boring B4 location, install soil gas vapor probe B4-SG from 6-6½ feet below grade (5 feet plus 1½ for building foundation depth) and recover a soil gas sample for the laboratory analysis of methane gas and other constituents of concern as needed
 - To facilitate groundwater monitoring/sampling, install temporary 0.75"-Diameter, screened PVC piezometer casing to the total depth of 15 feet in boreholes B1 thru B5
 - Periodically monitor and record the depth to groundwater in each borehole using an electronic water level indicator
 - Collect a grab groundwater sample in boreholes B1 thru B5 for laboratory analysis
 - Allow groundwater to stabilize in Borings B1, B2, B3, B5 for at least two hours, and subsequently survey and record the top of the PVC piezometer casing of each boring to allow for calculation of a preliminary groundwater gradient and flow direction
 - Backfill all boreholes with neat Portland cement; tremie grout directly through the piezometer casing to at least 1 foot above the measured groundwater table level; remove and properly dispose of all used casing
 - Store all drill soil cuttings and equipment wash/rinse water in secured temporary storage containers pending off-site disposal at a State-licensed landfill/recycling facility
 - Transport and submit selected soil and groundwater samples under chain-of-custody command to a State-certified stationary laboratory for laboratory analyses
 - Upload all investigative analytical data and required documentation to the State GeoTracker Database System
 - Profile and transport all solid (auger soil cuttings) and liquid waste to respective State-licensed disposal facilities

- Interpret all data and prepare a report summarizing the field activities, findings, and conclusions of the site characterization activities; provide recommendations of additional work scope if warranted or provide a recommendation for case closure submittal

The following sections provide further discussion of the proposed work at the Site.

Health And Safety Plan

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., tit. 8, section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., tit. 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements.

In addition, California OSHA's Construction Safety Orders (especially Cal. Code Regs., tit. 8, sections 1539 and 1541) will be followed as appropriate. Specific requirements are identified below:

- At least 72 hours prior to initiating field work, Wheeler Group will surface mark all proposed work area(s) in white marking paint and notify Underground Service Alert (USA). All subsurface utility agencies must mark out all underground utility locations within public right of way extending through general work area(s), and if high priority subsurface utilities are present within 10 feet of proposed excavation(s), Wheeler Group will meet with specific utility agencies to identify exact locations (Title 8, Section 1541)
- Site work traffic controls and warning sign placement must conform to the requirements of the State Department of Transportation's California Manual on Uniform Traffic Control Devices for Streets and Highways, September 26, 2006 (Title 8, Sections 1598 & 1599).

Wheeler Group will prepare a site-specific Health & Safety Plan (HASP) for the Site in accordance with current health and safety standards as specified by the federal and California OSHA's. The HASP will be reviewed and updated if needed for future work. The provisions of the HASP are mandatory for all personnel of the proposed project and its contractors who are at the Site. The contractor and its subcontractors doing fieldwork in association with this work plan will either adopt and abide by the HASP or shall develop their own safety plans which, at a minimum, meet the requirements of this HASP. All onsite personnel shall read the HASP and sign the "Plan Acceptance Form" before starting daily Site activities.

Field Procedures for Investigation Activities

PRE-FIELD WORK ACTIVITIES

Wheeler Group will obtain all necessary drilling and encroachment permits from the Alameda County Public Works Agency and City of Oakland Planning & Building Department. Wheeler Group will notify all property owners and tenants as well as the ACDEH of all scheduled work activities. At least 72 hours before commencing field activities, Wheeler Group will visit the site and outline the proposed work areas in white surface paint and subsequently notify Underground Service Alert (USA) to locate and mark any subsurface utilities extending through the designated work areas.

Wheeler Group will notify the property owners, tenants, and regulatory agency representatives of all scheduled fieldwork and arrange and schedule all drilling and laboratory subcontractor services. Prior to commencing drilling activities, Wheeler Group will conduct a tailgate safety meeting with all site personnel addressing all information provided in the Community Site Health & Safety Plan. Wheeler Group will direct the subcontracted driller to hand auger each proposed boring location to clear for unmarked subsurface utilities.

DRILLING & SOIL SAMPLING

As required per agency drilling permit conditions, each proposed soil boring will be drilled by a California-licensed Water Well Drilling Contractor (C-57). Wheeler Group will initially direct the subcontracted driller to hand auger each proposed boring location to approximately 4 fbg to clear for unmarked subsurface utilities. The driller will advance each boring to a total depth of 15 fbg using a limited access, hydraulic Geo Probe drilling rig equipped with 2.25-inch-diameter steel, concentrically-cased steel drill tubes. Discrete soil samples will be collected in each borehole between 4 and 15 fbg by advancing a butyrate plastic, tube-lined core sampler (1.5-inch-diameter) approximately 4 feet into relatively undisturbed soil. Soil samples will be collected continuously. Discrete soil samples will be collected at 5 and 10 fbg for laboratory analysis. Additional discrete soil samples will be recovered at changes of lithology, at the soil/groundwater interface, and at areas showing obvious contamination (i.e., staining & hydrocarbon odor). All down-hole drilling and sampling equipment will be cleaned between each boring location using a non-phosphate Alconox® solution and double rinsed using clean, potable water.

Wheeler Group will classify and log all soil extracted from each borehole using the Unified Soil Classification System and Munsell Soil Color Chart, and monitor and record the organic vapor concentrations of selected soil samples using a MiniRae® photo ionization detector (PID). All borings will be logged under the supervision of a California-registered Civil Engineer/Geologist. Soil samples retained for laboratory analysis of petroleum hydrocarbons will be immediately sealed with Teflon tape and plastic caps, appropriately labeled, and placed in a cooler chilled to approximately 4° Centigrade.

GRAB GROUNDWATER SAMPLING

Following drilling and soil sample collection in each borehole, Wheeler Group will instruct the drilling contractor to place factory-sealed, 0.75-inch-diameter, screened PVC well casing (threaded with bottom cap) to the total depth of boreholes B1 thru B5 to expedite sampling and pre-filter the groundwater of coarse-grained sediments. Wheeler Group will direct the driller to extract the outer drill tubes and place sand surrounding the well casing exposing the PVC casing to the surrounding strata and groundwater.

Wheeler Group will periodically measure and record the depth to groundwater in each temporary piezometer using an electronic water level indicator or oil/water phase indicator and determine when groundwater levels stabilize. Wheeler Group will obtain all measurements relative to the approximate north side of the top of casing (TOC), with an accuracy of 0.01 foot. If a sufficient groundwater volume is present and no free petroleum product or sheen is observed, Wheeler Group will immediately collect a grab groundwater sample within the PVC casing in each borehole using a low flow peristaltic pump and dedicated polyethylene or Teflon tubing. If free phase product is present in any borehole, a groundwater sample will not be collected.

The volatile water samples will be collected and poured directly into laboratory cleaned 40-milliliter volatile organic analysis (VOA) vials (pre-preserved with hydrochloric acid) to prevent loss of any volatile constituents. The vials will be filled slowly and in such a manner that the meniscus extends above the top of the VOA vial. After the vials are filled and sealed with a laboratory provided Teflon cap, they will be inverted to insure there is no head space or entrapped air bubbles. Groundwater collected for TPH analyses will be transferred directly to 1-liter amber bottles. The samples will be labeled and placed in a cooler chilled to approximately 4°C. Wheeler Group will submit the samples under a chain of custody to the analytical laboratory for chemical analysis.

TEMPORARY WELLHEAD ELEVATION SURVEY

At the conclusion of soil, soil gas and groundwater sampling activities, Wheeler Group will perform a temporary wellhead elevation survey prior to borehole backfill activities at Borings B1, B2, B3 and B5, as designated on Figure 9 *Proposed Work*. Wheeler Group will initially monitor and record the depth to groundwater and presence of free product in each temporary well using an electronic water level indicator or oil/water phase indicator, respectively. Wheeler Group will then survey the top of casing and associated grade elevation of each temporary piezometer to the nearest 0.01 foot. Elevations will be measured relative to a local benchmark with known elevation (Mean Sea Level) or arbitrary datum point using an assumed elevation. Wheeler Group will then calculate the approximate groundwater gradient and flow direction across the Site. Immediately following survey activities, Wheeler Group or EnProbe will extract each temporary piezometer casing and backfill each borehole with neat Portland cement up to approximately 1 fbg. The balance of each borehole will be backfilled with appropriate cover material to restore original Site conditions.

SOIL GAS VAPOR PROBE

Wheeler Group will collect a soil gas sample from the borehole B4 location adjacent to the commercial building at the Site to evaluate the concentration of oxygen and potential for methane gas. A separate boring labeled B4-SG will be advanced using GeoProbe drilling to the final depth of 6½ fbg. Once the designated target depth of 6½ feet is reached, a temporary vapor probe is constructed in the bottom of the borehole. Figure 10, titled *Proposed Soil Vapor Probe Construction Diagram* shows schematic representations of a vapor probe constructed to 6½ fbg. At the target depth, a screened vapor probe is installed on the down-hole end of 1/4-inch Teflon tubing and extends approximately 12 inches above grade surface. The screened probe is encased in a 12-inch thick sand pack. Approximately 12 inches of dry granular bentonite is placed on top of the sand pack, followed by 2-3 feet of hydrated granular bentonite underlying 1-2 feet of neat Portland cement. A soil gas sample will be collected following the procedures provided in the Department of Toxic Substances Control's (DTSC) July 2015 *Advisory – Active Soil Gas Investigations*, and discussed below. Following the soil gas sampling, Wheeler Group will extract the vapor probe from the borehole and backfill the borehole with concrete or other appropriate cover material to restore original Site conditions.

SOIL GAS SAMPLING

A soil gas sample will be collected following the procedures provided in DTSC's July 2015 *Advisory – Active Soil Gas Investigations*. Wheeler Group will wait at least two hours following the completion of borehole drilling before conducting the soil gas sampling. The appropriate purge volume will be 3 in accordance with the current advisory for soil gas investigations, to allow the soil vapor conditions to approach representative, ambient conditions after probe emplacement. The associated shut-in tests, leak testing, purging volume testing, and soil gas sampling will not be conducted until equilibration has occurred, at least 48 hours following completion of probe installation. A brief description of each soil gas assembly test is provided below. Figure 11, *Schematic of Soil Gas Sampling Train*, shows the equipment setup utilized for soil gas sampling.

For collection and analysis of Methane and Oxygen, a laboratory-supplied 6-liter purge canister and a 1-liter sample canister will be connected into a manifold using an inline 2-micron filter, a flow controller preset at a 100 milliliters/minute flow rate, and a dual valve assembly (V₁ and V₂). The sample canister, manifold, valves and the superior portion of the sub-slab vapor probe (at grade surface) will be connected using laboratory supplied Teflon tubing and Swagelok compression fittings. The sample canister and manifold assembly will be connected directly to the above-grade tubing of the newly-installed vapor probe. Clean laboratory-supplied canisters, manifold assemblies, and new Teflon tubing will be used at each sampling location.

Vacuum gauges will be pre-connected directly to each Summa canister at the laboratory. Per soil gas advisory specifications, flow rates between 100 and 200 milliliters per minute and an applied vacuum less than 100 inches of water should be maintained throughout purging and sampling to minimize both ambient air infiltration from dilution of samples and partitioning of vapors from pore water to soil gas, to help ensure collection of a representative soil gas sample.

Shut-In Test

A shut-in test will be conducted to check for leaks in the above-grade sampling system. After assembly of the soil vapor sampling train as shown in Figure 11, Wheeler Group will close Valve V₁ and apply a vacuum at the 6-liter purge canister and continually observe the vacuum gauge(s) for at least 1 minute (standard time @ 10 minutes) to confirm that there is no observable loss in vacuum. Should a loss in vacuum occur, Wheeler Group will immediately close the valve at the purge canister and adjust all inline fittings between V₁ and the purge and sample canisters. After validation of the shut-in test is completed, the soil gas sampling train will not be disconnected or altered, and the subsequent leak test can be performed.

Leak Test

A leak test is conducted during sample collection to check if ambient air is introduced into the soil gas sample and evaluate overall integrity of the sample. The introduction of ambient air into the soil gas sample will likely dilute or alter the actual site contaminant concentration. Atmospheric leakage generally occurs through faulty valves/gauges and loose fittings in the soil gas sampling train, and by advection through voids in the vapor probe construction material, borehole wall and directly through the soil column itself. The leak check compound, isopropyl alcohol (IPA; CAS #67-63-0), is applied at the vapor probe inlet at grade surface, throughout the duration of the sampling event. Wheeler Group recommends using a shroud enclosure with minimal volume during the sampling of each vapor probe to ensure that a relatively high concentration of the leak check compound is maintained throughout the sampling event, and that the volatile tracer concentrations within the shroud be monitored and recorded periodically (@ 3-minute intervals) using a calibrated PID.

The enclosure should be placed over the inlet of the soil vapor probe and contain at least the vapor tight valve V₁ and associated sections of Teflon tubing. IPA would be applied directly to a gauze or cloth and placed on the floor surface near the vapor probe inlet, whereas a gaseous tracer compound would be infused directly surrounding the vapor sampling train assembly within the shroud enclosure. The selected leak check compound should not be a suspected site contaminant, and should be included in the laboratory analyte list. If warranted, a leak check sample canister (or associated tubing inlet) can be placed within the shroud enclosure and sampled concurrently with the soil gas sample.

Soil Gas Sample Collection

After the calculated volume of vapor has been evacuated from the sampling assembly (i.e., borehole, tubing & manifold), Wheeler Group will perform soil gas sample collection. If a leak check canister is utilized, it will be connected to a separate manifold system “J-Tube” consisting of a 2-micron filter, flow controller, and a single valve assembly, and connected directly to Teflon tubing that extends within the shroud enclosure. Wheeler Group will place clean gauze saturated with IPA within the interior of the shroud enclosure throughout the duration of each sampling period, and continuously monitor the interior atmospheric concentration of the shroud with a MiniRae® PID. Wheeler Group will record the interior shroud VOC concentrations approximately every three minutes.

Wheeler Group will initially close the purge canister and open the valves for the 1-liter sample and leak detection canisters, and begin sample collection. Sampling will be terminated at each location when the sample canister vacuum gauge shows approximately 5 inches of mercury (adequate sample volume and suggested vacuum for sample extraction according to laboratory). Each sample canister will be disconnected from the sample train assembly, appropriately labeled and placed in a box or cooler (non-chilled) for transport to the laboratory. The results of the soil vapor analysis will be confirmed with duplicate soil vapor samples (at a rate of 10% of the soil vapor samples) collected simultaneously in additional Summa canisters utilizing a duplicate manifold assembly.

If warranted, Wheeler Group will utilize Thermal Desorption (TD) Tubes for collection and analysis of TPH as Diesel and Naphthalene, TPH as Gasoline and VOCs, using EPA method TO-17. Laboratory-provided stainless tubes are pre-packed with specialized sorbent and sealed at each end with threaded Swagelok caps, then wrapped in tin foil, and shipped from the laboratory on blue ice. At each sample location, the TD tubes (2) are connected in series with Tygon or Teflon tubing to the soil gas wellhead point. The effluent end of the TD tubes is then connected with additional tubing to a low flow sampling pump, also provided by the laboratory. The pump is activated and the sample is collected by drawing approximately 2 liters of air through the TD tubes, absorbing the contaminant onto the interior media of each tube (sample duration @ 20 minutes). The sample/pump assembly is disconnected and the TD tubes are immediately re-capped with the swagelok fittings, labeled, appropriately wrapped/sealed, and placed back in blue ice for transport to the laboratory.

Laboratory Analysis Plan

Laboratory Analysis of Soil Samples

Wheeler Group will submit all collected soil samples under formal chain of custody command to a State-certified analytical laboratory. The soil samples collected in each borehole at 5 and 10 fbg, groundwater interface, and selected samples at other depth intervals showing elevated petroleum vapor as field recorded with the PID, will be submitted for laboratory analysis of the following constituents:

- Total Petroleum Hydrocarbons (TPH) and diesel by EPA Method 8015B(M)
- Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA Method SW8260B
- Polynuclear Aromatic Hydrocarbons (PAHs) w/ Naphthalene (EPA 8270C)
- Volatile Organic Compounds (Full List) by EPA Method 8260B

Laboratory Analysis of Groundwater Samples

Wheeler Group will submit all grab groundwater samples under formal chain of custody command to a State-certified analytical laboratory analysis of the following constituents:

- Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA Method SW8260B
- TPH as Diesel by Method SW8015B(M) with and without Silica Gel Cleanup
- Volatile Organic Compounds (Full List) by EPA Method SW8260B

Laboratory Analysis of Soil Gas Sample

Wheeler Group will submit the soil gas samples collected in B4 under chain of custody command to Torrent for chemical air analysis. The samples will be analyzed using the following California Department of Health Services approved methods:

- Fixed Gases of Methane and Oxygen only by ASTM Method D-1946 (Oxygen, Methane)

If warranted, the soil gas sample will also be analyzed for:

- TPH as Diesel range organics by EPA Method TO-17
- TPH as Gasoline range organics by EPA Method TO-17
- Volatile Organic Compounds (VOCs; Full List) by EPA Method TO-15 or TO-17

The leak check canister sample will be analyzed only for 2-Propanol (Isopropyl Alcohol – IPA) by EPA Method TO-15. Tables in the technical report will present a summary of the analytical results for this event as well as data generated during previous sampling events at the Site. A copy of the certified laboratory analytical report associated with the sampling event will also be presented in technical report.

Waste Management

All hydrocarbon-impacted soil generated during the additional soil boring installation activities will be transferred directly to a 55-gallon drum and temporarily stored onsite in a secure area. Pending receipt of the discrete or composite stockpile soil sample analysis, Wheeler Group and subcontractors will subsequently profile and transport the drummed waste to an appropriate licensed disposal facility under uniform waste manifest. A copy of the solid waste manifest and associated weight ticket will be included in the technical report.

All borehole purge water and equipment wash and rinse water generated during the investigation activities will be transferred to a separate 55-gallon D.O.T.-approved steel drum and stored onsite in a secure area. All waste liquid containers will be sealed and appropriately labeled and securely stored

onsite pending future disposal at a State-licensed disposal or recycling facility. The liquid waste will be profiled for disposal/recycling under uniform waste manifest following receipt of the laboratory results of groundwater sample analysis.

SCHEDULE

Wheeler Group anticipates beginning the additional field activities within two to three weeks of receiving work plan approval, client authorization to proceed, and upon permit acquisition and subcontracted driller availability. The technical report of findings should be available within 4 to 6 weeks following receipt of all sample analytical results.

GEOTRACKER ELECTRONIC SUBMITTAL

Wheeler Group will direct the laboratory to submit all analytical data in electronic deliverable format (EDF) via the Internet. All soil and groundwater sample analytical data will be uploaded to the State Water Resources Control Board's GeoTracker Database System. Also, a site plan, geologic boring logs, as well as a copy of the report of findings will be uploaded in Portable Data Format (PDF) to the State GeoTracker Database. An appendix of the resulting technical report will include a copy of each associated GeoTracker Upload Confirmation Form.

REPORT PREPARATION & DISTRIBUTION

Following the completion of all field work, GGTR will compile all field and analytical data to be used in preparation of a technical report that discusses the activities, findings and conclusions of the investigation. The report will also present recommendations for additional delineation and/or proposed free fuel oil product removal. All reports that are prepared during the continuing work on this project will be submitted to:

Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Anne Jurek, M.S.
Professional Technical Specialist II

(1 Electronic Copy via GeoTracker)
(1 Electronic Copy via FTP site)

Mercedes-Benz of Oakland/Euro Motors Oakland, Inc.
Attn: Ash Zaki
2915 Broadway, Oakland CA 94611

(1 Electronic Copy via Email)

LIMITATIONS

It should be understood that all environmental assessments are inherently limited in that conclusions are drawn and recommendations developed from information obtained from limited research and visual observations. Subsurface conditions change significantly with distance and time and therefore may differ from the conditions implied by subsurface investigation. It must be noted that no investigation can absolutely rule out the existence of any hazardous or petroleum substances at a given site. Existing hazardous materials and contaminants can escape detection using these methods. The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and location given. GGTR professional services have been performed, with findings obtained and recommendations prepared in accordance with customary principles and practices in the field of environmental science, at the time of the assessment.

This warranty is in lieu of all other warranties either expressed or implied. GGTR is not responsible for the accuracy of information reported by others or the independent conclusions, opinions or recommendations made by others based on the field exploration presented in this report. The findings contained in this report are based upon information contained in previous reports of corrective action activities performed at the subject property and based upon site conditions as they existed at the time of the investigation, and are subject to change. The scope of services conducted in execution of this phase of investigation may not be appropriate to satisfy the needs of other users and any use or reuse of this document and any of its information presented herein is at the sole risk of said user. The figures, drawings and plates presented in this document are only for the purposes of environmental assessment and no other use is recommended. No other third party may rely on this report, figures or plates for any other purpose.

STATEMENT OF PROFESSIONAL CERTIFICATION

Document Title: Work Plan

Location: Mercedes-Benz of Oakland
344-29th Street, Oakland, California

California Business and Professions Code Section 7835 specifies that all geologic plans, specifications, reports, or documents shall be prepared by a professional geologist or registered specialty geologist, or by a subordinate employee under his or her direction. In addition, the document shall be signed by the professional geologist or registered specialty geologist or stamped with his or her seal, either of which shall indicate his or her responsibility for them.

This document is prepared in accordance with the California Business and Professions Code Section 7835 by a “professional geologist” as defined in the Geologist and Geophysicist Act (California Business and Professions Code commencing with Section 7800).

Wheeler Group Environmental, LLC

Date: October 14, 2016

Brent A. Wheeler
Principal/Project Engineer

Mark Youngkin
Registered Geologist No. 3888



WORK PLAN

**Mercedes-Benz of Oakland
344 - 29th Street, Oakland, California**

**ACDEH-LOP Fuel Leak Case No. RO0003220
GeoTracker Global ID No. T1000009111
WGE Project # 2016102**

FIGURES

- Figure 1 - Site Location Map
- Figure 2 - Site Vicinity Map
- Figure 3 - Site Plan
- Figure 4 - Groundwater Flow Direction Map
- Figure 5 - Plume Map – Benzene
- Figure 6 - Plume Map – TPH as Gasoline
- Figure 7 - Plume Map – MTBE
- Figure 8 - Plume Map – Buffer Zone
- Figure 9 - Proposed Work
- Figure 10 - Proposed Soil Vapor Probe Construction Diagram
- Figure 11 - Schematic of Soil Gas Sampling Train

Photographs Page 1

Photographs Page 2

Wheeler Group Environmental, LLC
369-B Third Street, Suite #221, San Rafael, CA 94901

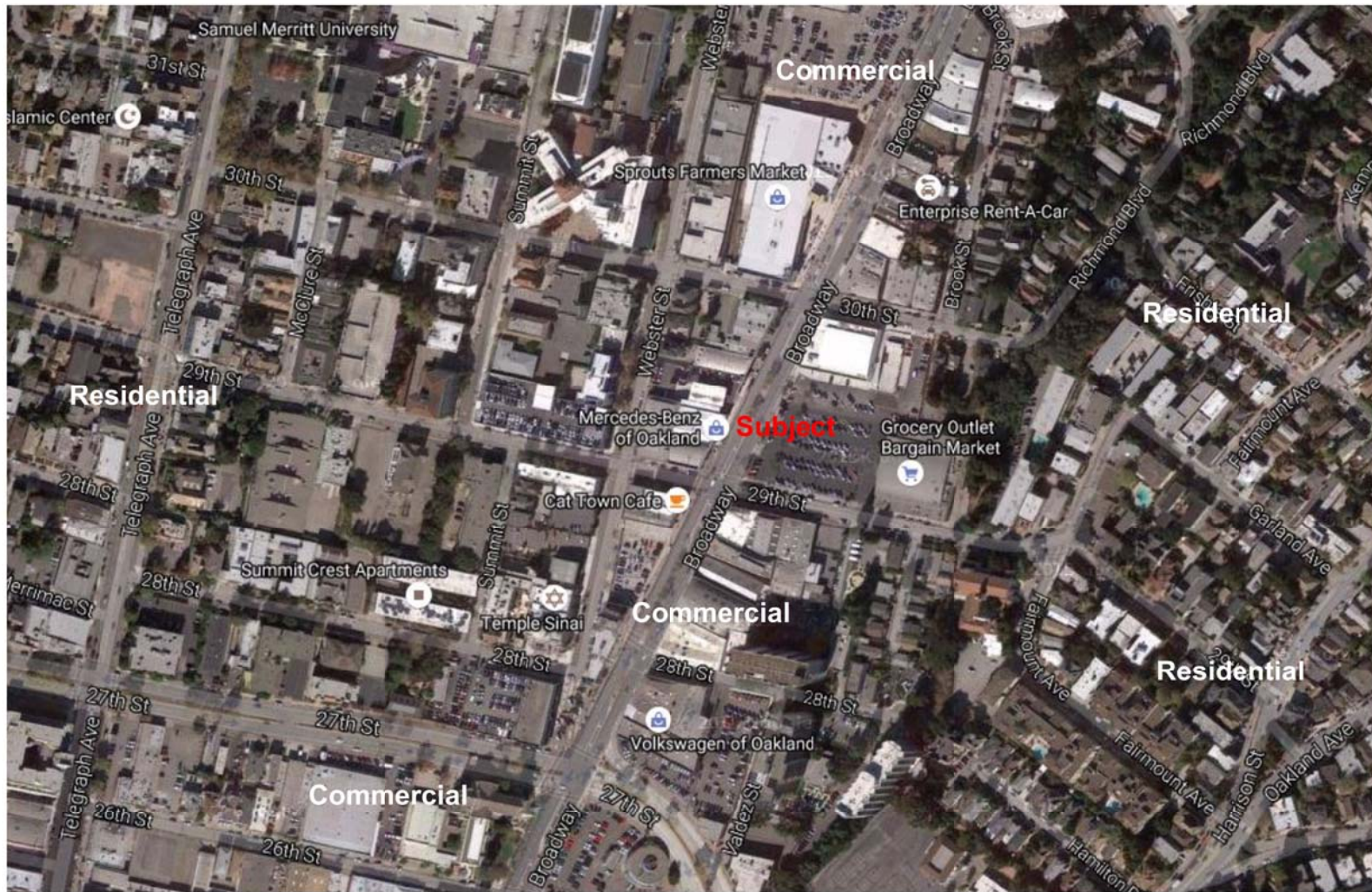


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Phone (415) 686-8846

SITE LOCATION MAP
344-29th Street
Oakland, California

WGE Project No. 2016102

Figure 1



Base map from Google Maps 2016

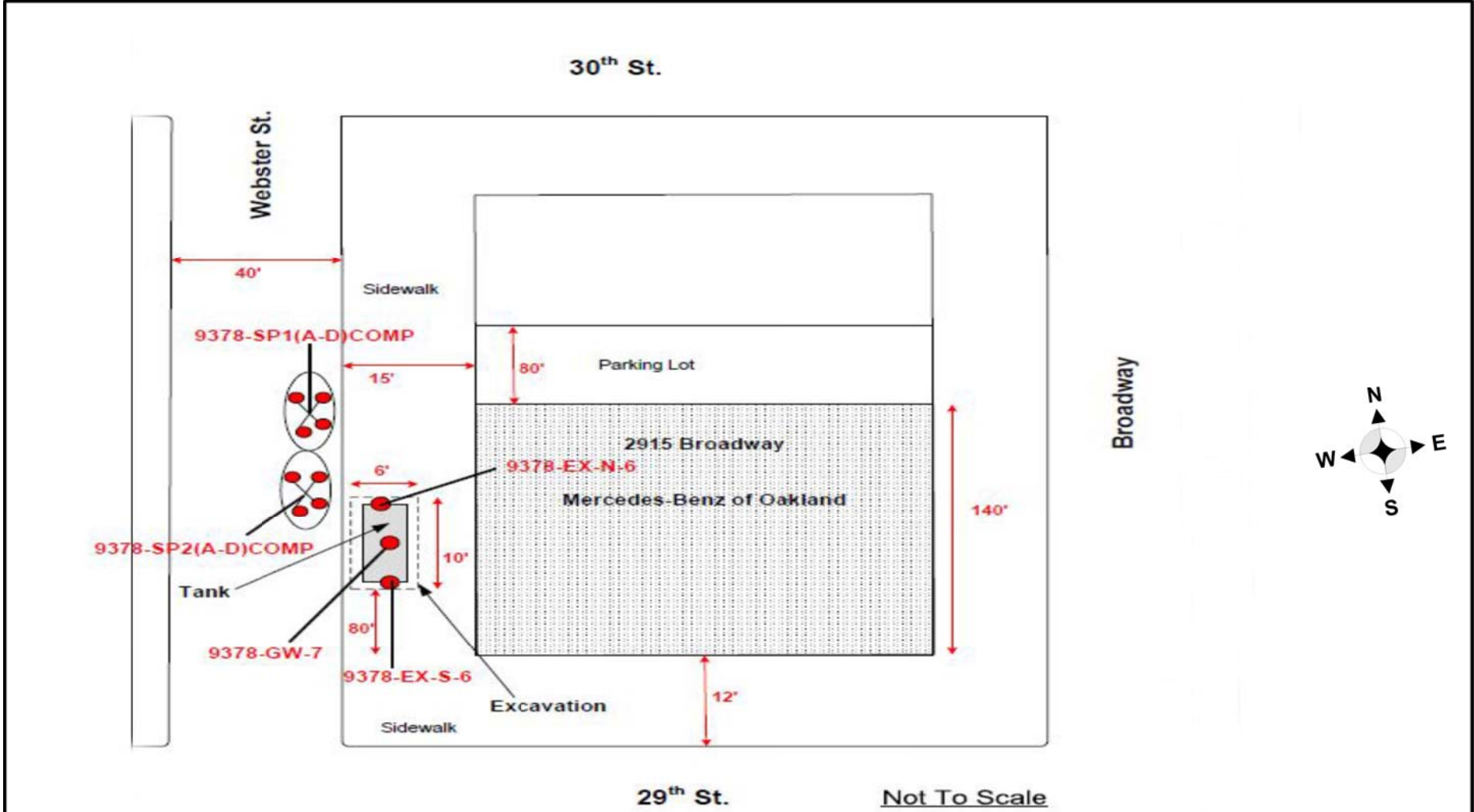


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SITE VICINITY MAP
 344-29th Street, Oakland, California

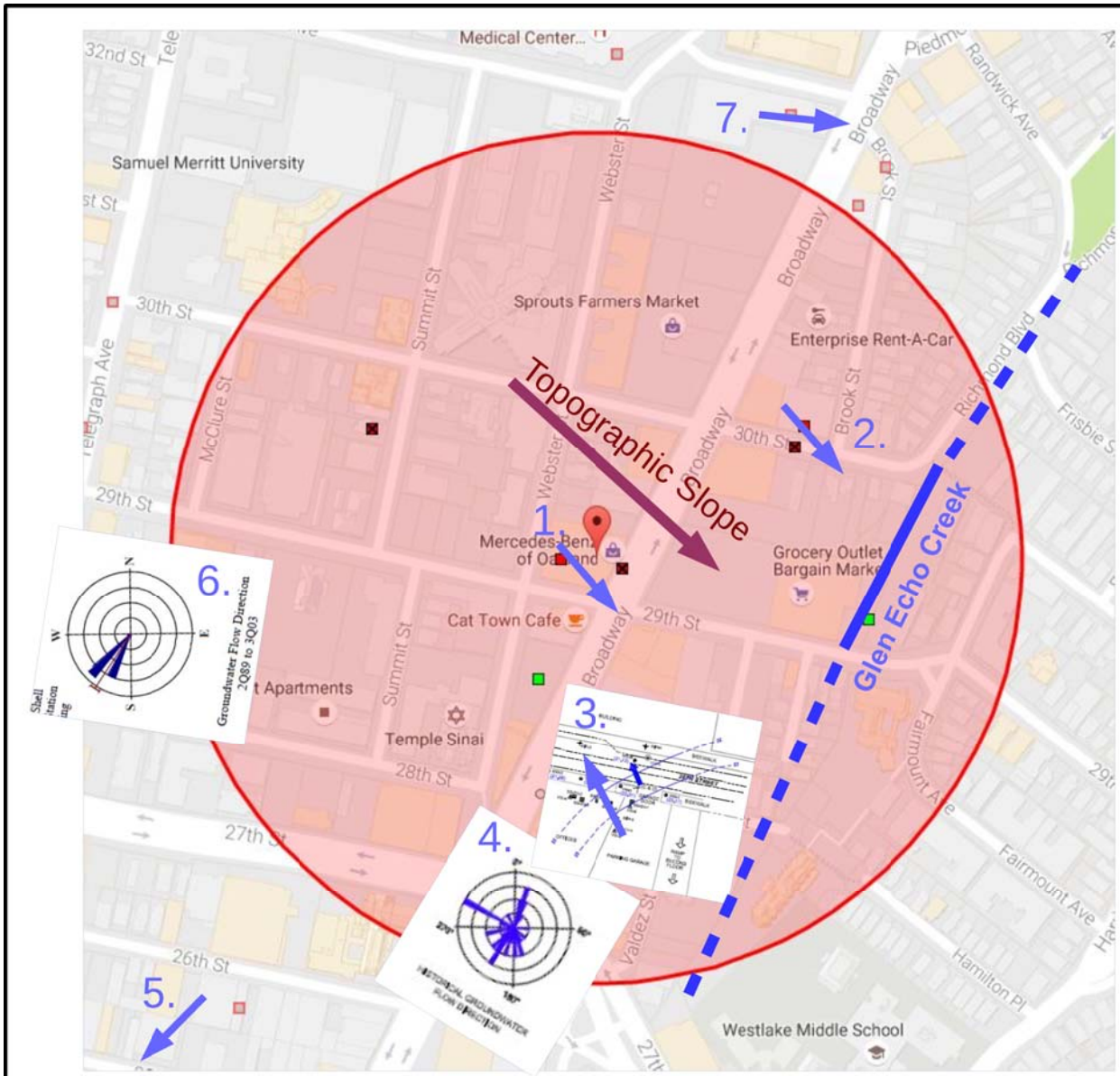
WGE Project No. 2016102

Figure 2



Base plan from Underground Storage Tank Closure Report by Golden Gate Tank Removal, Inc. dated November 11, 2013

 <p>WHEELER GROUP ENVIRONMENTAL LLC 369-B Third Street, Suite #221, San Rafael, CA Phone (415) 686-8846</p>	<p align="center">SITE PLAN 344-29th Street, Oakland, California</p>
<p align="center"><i>WGE Project No. 2016102</i></p>	<p align="center">Figure 3</p>



Red Circle - 1000 foot radius shown from Site

List of LUST Cases:

1. European Motors Ltd, 2915 Broadway
2. Robert & Ruth Burrows Trust, 260 30th Street
3. Broadway Volkswagen, 2740 Broadway
4. Chevron #9-2506, 2630 Broadway
5. Benner Automotive, 488 25th Street
6. Former Shell Service Station, 2800 Telegraph Avenue
7. Connell Oldsmobile, 3093 Broadway

Base map from GeoTracker 2016



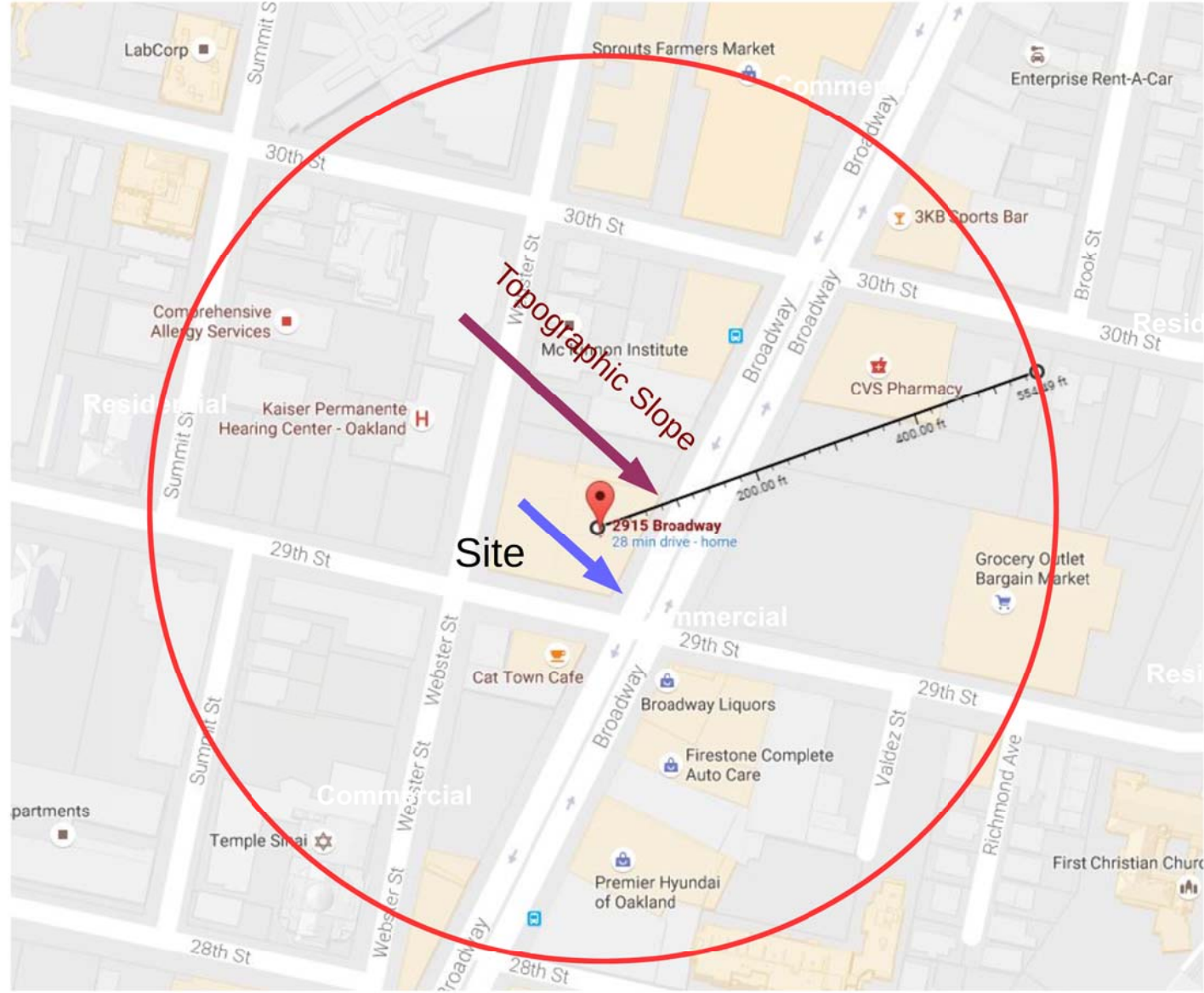
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GROUNDWATER FLOW DIRECTION MAP

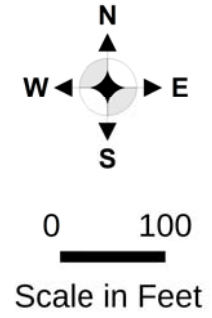
344-29th Street, Oakland, California

WGE Project No. 2016102

Figure 4



Sensitive receptor survey showing plume map for benzene with radius of 554 feet and previously determined flow direction toward the southeast.



Base map from Google Maps 2016

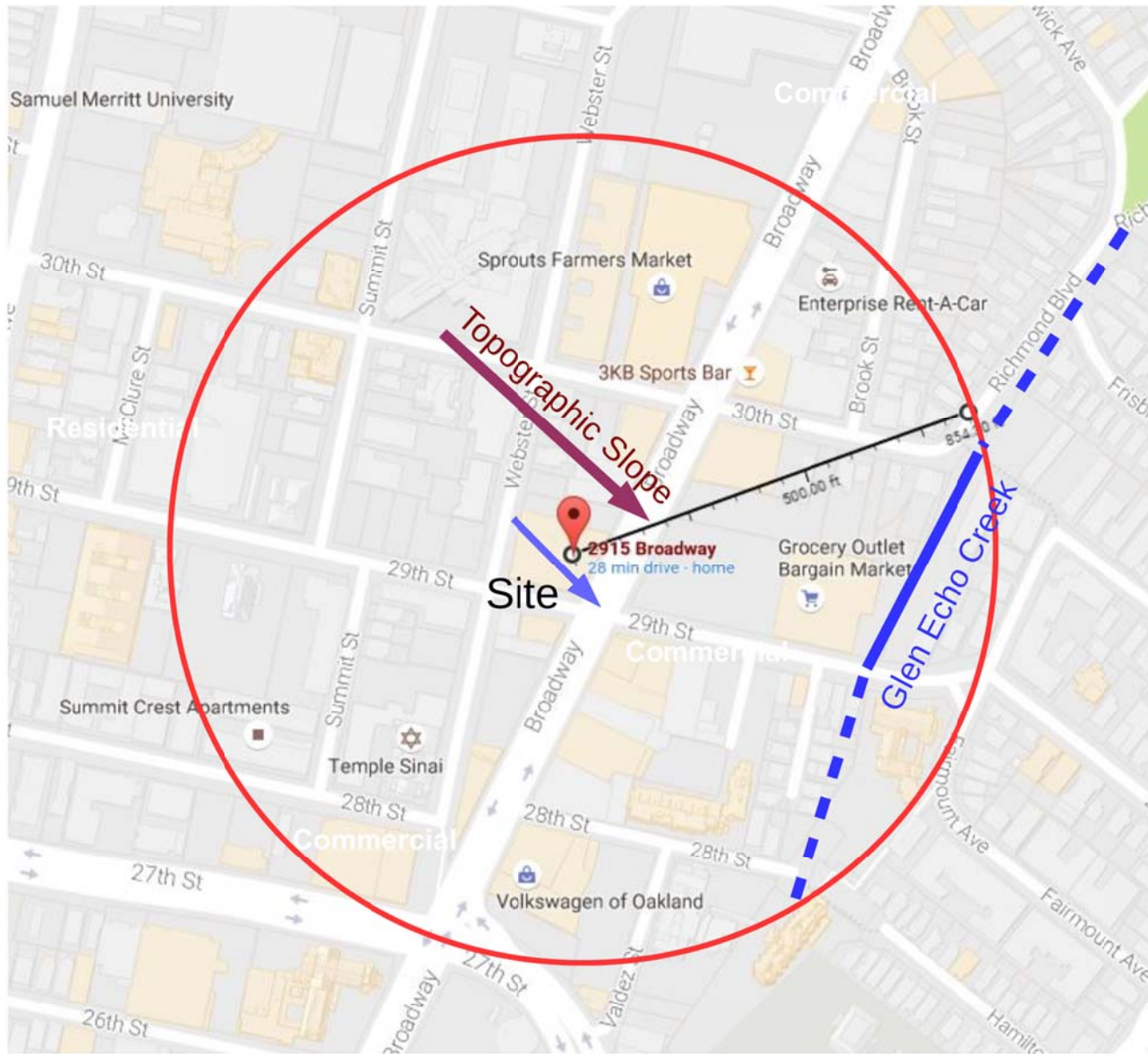


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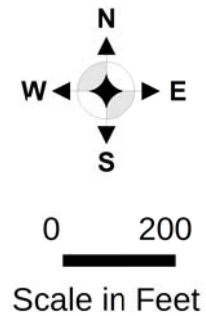
PLUME MAP - BENZENE
 344-29th Street, Oakland, California

WGE Project No. 2016102

Figure 5



Sensitive receptor survey showing plume map for TPH as gasoline with radius of 855 feet and previously determined flow direction to the southeast.



Base map from Google Maps 2016

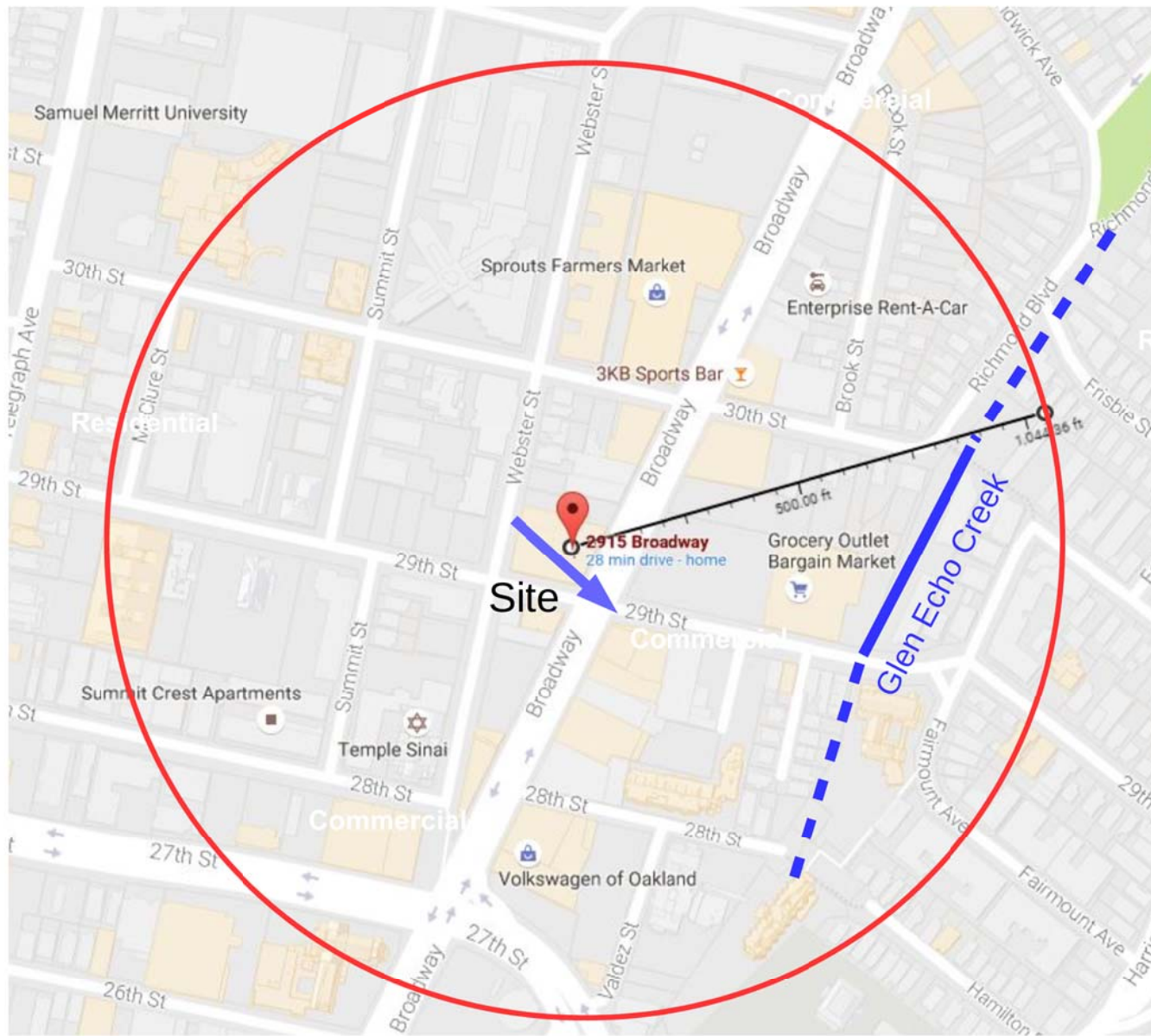


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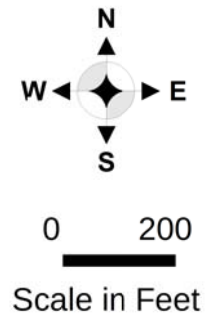
PLUME MAP – TPH GASOLINE
 344-29th Street, Oakland, California

WGE Project No. 2016102

Figure 6



Sensitive receptor survey showing plume map for MTBE with radius of 1045 feet and previously determined flow direction to the southeast.



Base map from Google Maps 2016

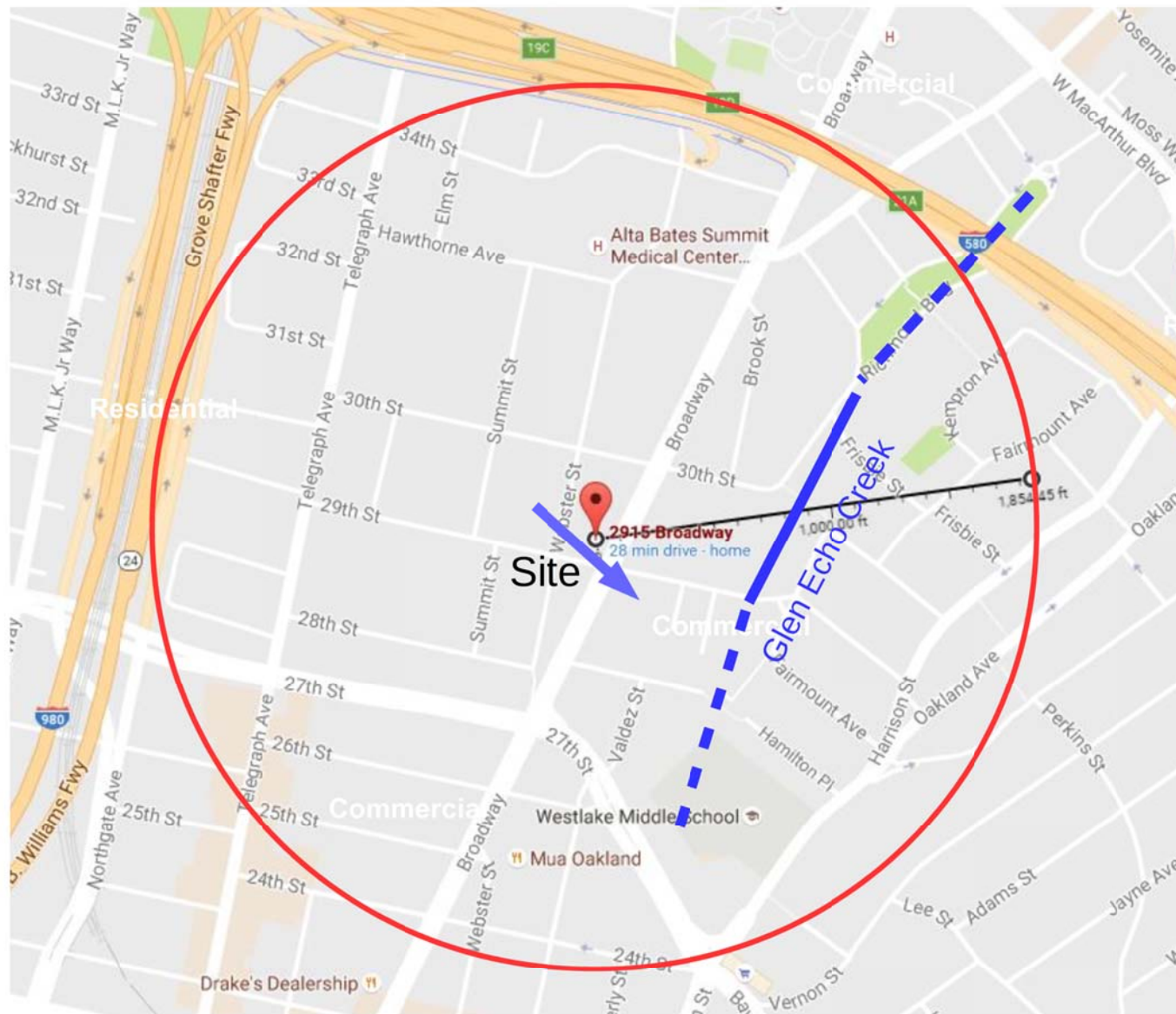


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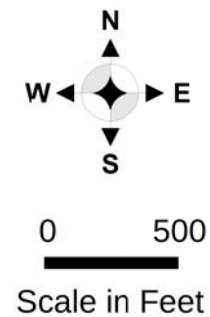
PLUME MAP – MTBE
344-29th Street, Oakland, California

WGE Project No. 2016102

Figure 7



Sensitive receptor survey showing plume map for TPH as Gasoline with radius of 855 feet and 1000 foot buffer zone with previously determined flow direction to the southeast.



Base map from Google Maps 2016

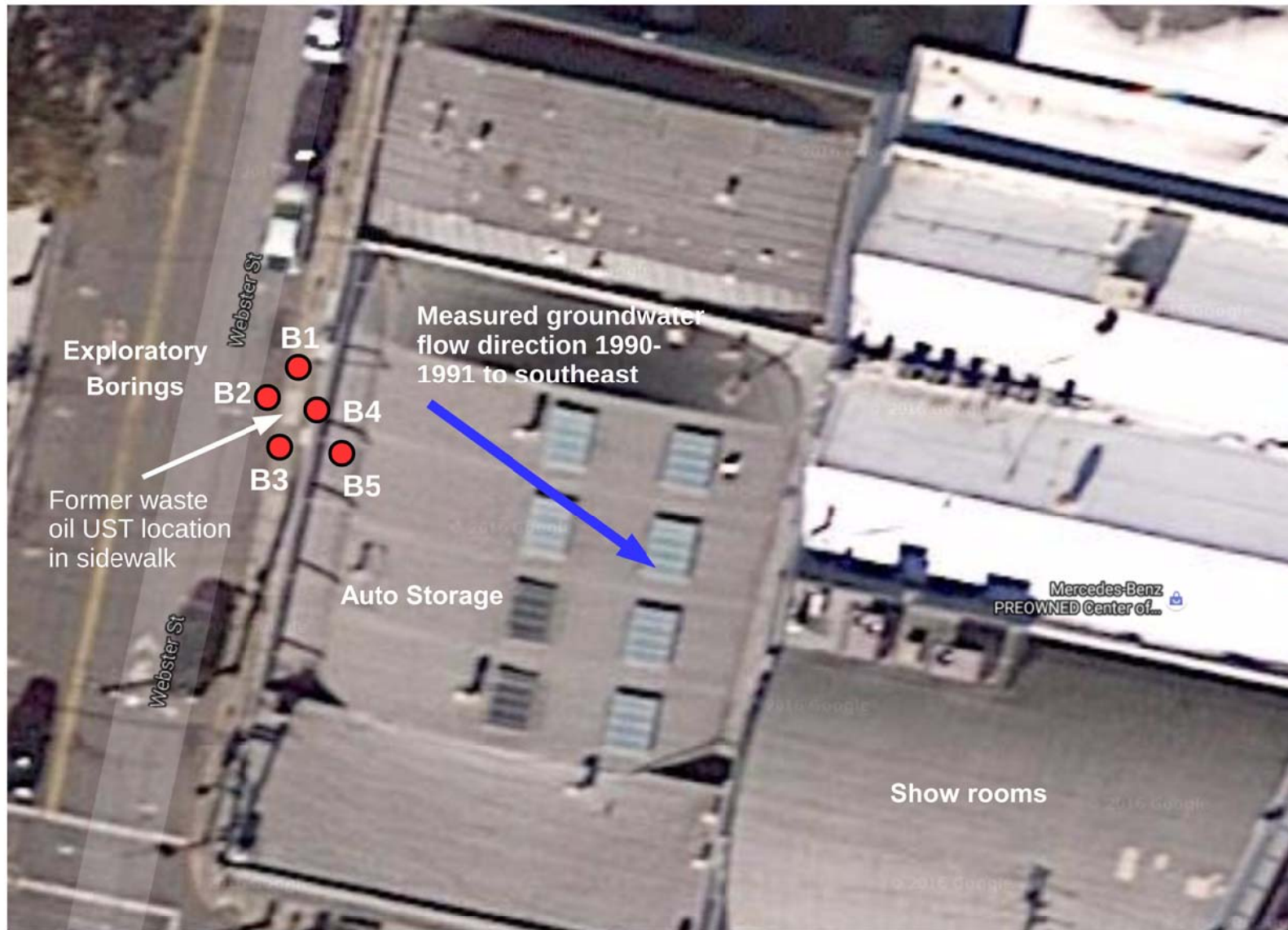


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PLUME MAP – BUFFER ZONE
344-29th Street, Oakland, California

WGE Project No. 2016102

Figure 8



Aerial photograph from Google Maps 2016



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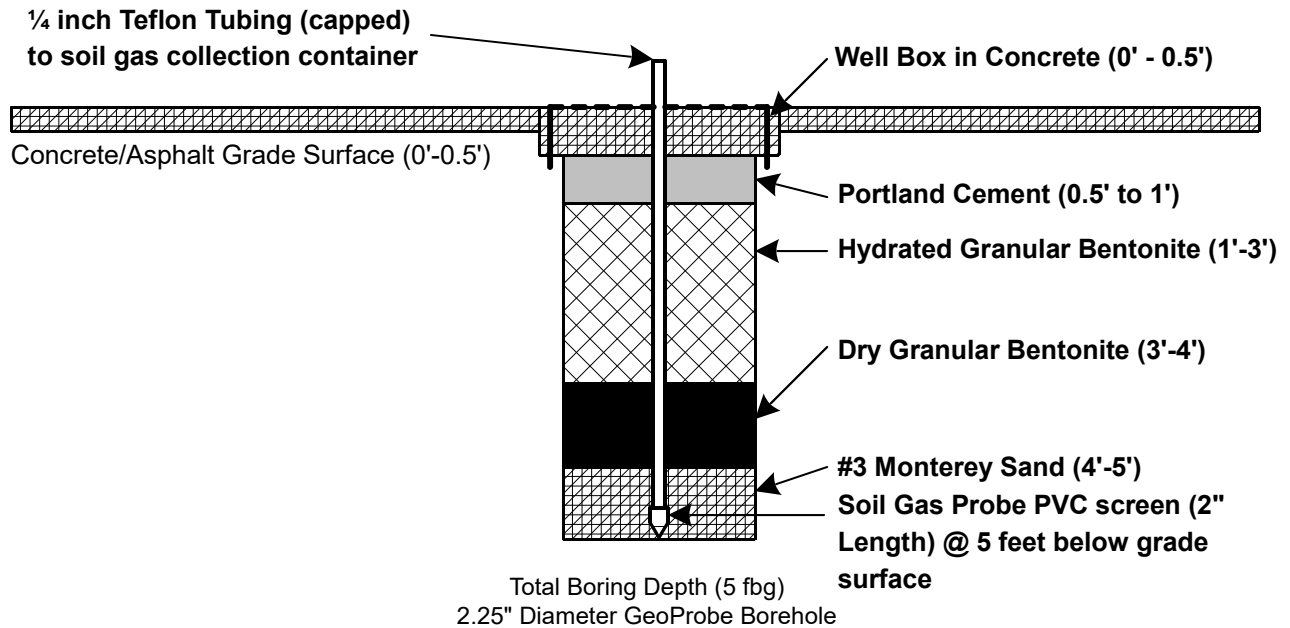
Proposed Work
 344-29th Street, Oakland, California

WGE Project No. 2016102

Figure 9

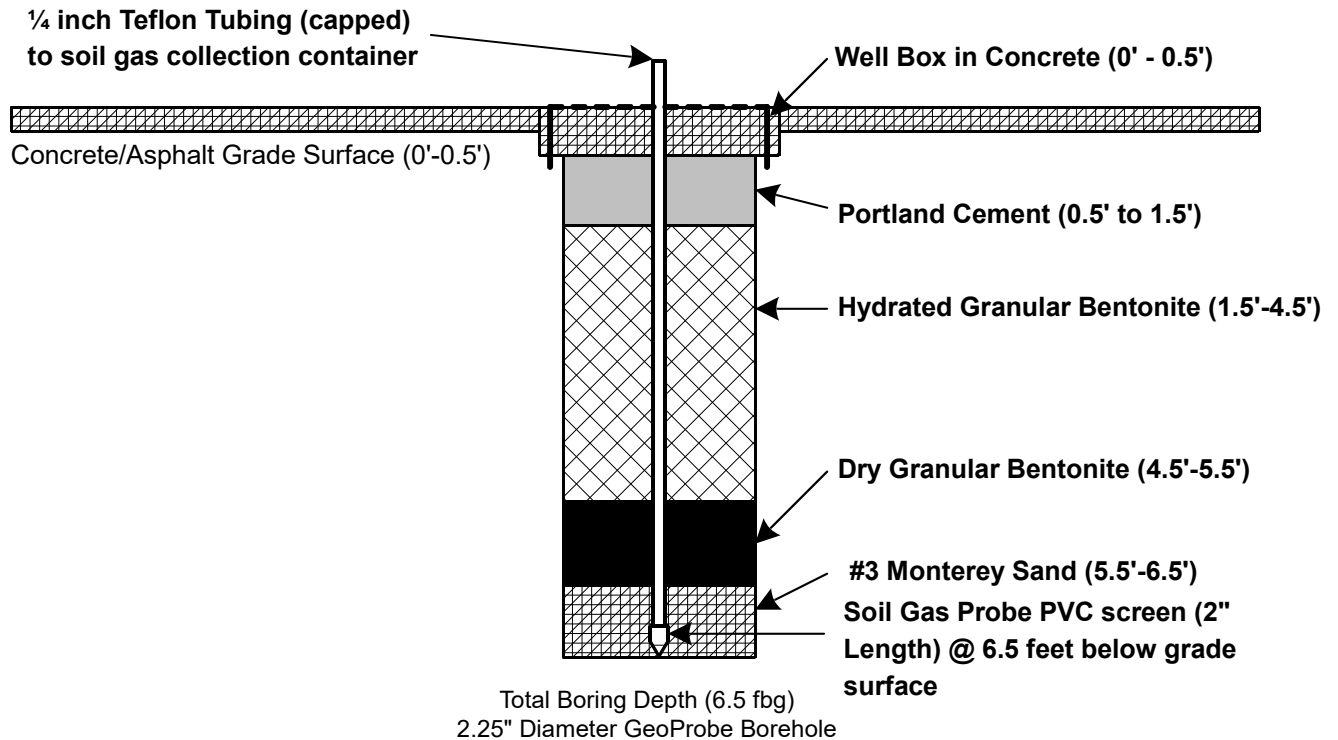
Soil Vapor Probe

Construction Schematic (0' to 5')



Soil Vapor Probe

Construction Schematic (0' to 6.5')



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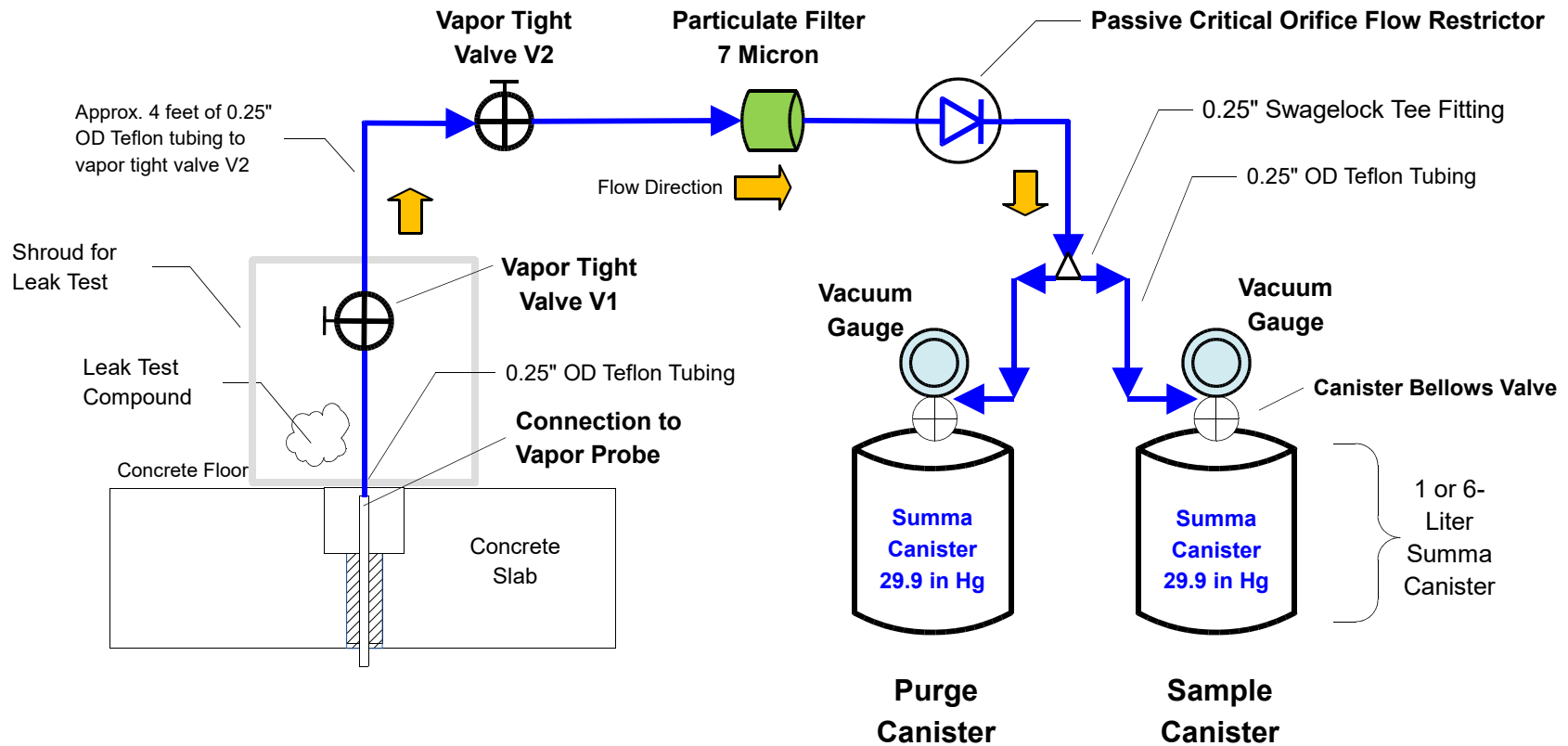
PROPOSED SOIL VAPOR PROBE
CONSTRUCTION DIAGRAM
(5' & 6.5' Total Depths)

WGE Job Number 2016102

Not To Scale

Figure 10

NOT TO SCALE - SKETCH ONLY



All tubing is nominal 0.25" OD (0.17" ID) Teflon (lab or food grade)
 All fittings are 0.25" Swagelock type

Laboratory Analysis, Summa canisters, flow restrictor, particulate filter, bellows valves, and vacuum gauges provided by Torrent Laboratories, Inc.



Wheeler Group Environmental, LLC
 369-B Third Street, Suite #221, San Rafael, CA

Schematic of Soil Vapor Sampling

WGE Project No. 2016102

August 2016

Figure 11



Photograph No. 1 – exterior view looking south from sidewalk of Webster Street showing concrete patch at former location of 600-gallon waste oil underground storage tank removed on September 23, 2013



Photograph No. 2 – interior view from building at outside wall adjacent to former UST location in sidewalk with former location of remote fill and "Leak Alert" leak detection panel mounted on wall above fire extinguisher



Photograph No. 3 – close up view of Leak Alert panel mounted on inside of exterior wall adjacent to former UST and remote fill location



Photograph No. 4 – exterior view looking east from Broadway frontage of subject building – view down hill along 29th Street towards Glen Echo Creek just beyond large grocery store building on left margin of photograph



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San Rafael, CA 94901 Phone (415) 686-8846

WGE Project No. 2016102

PHOTOGRAPHS PAGE 1
344-29th Street, Oakland CA

Work Plan



Photograph No. 5 – view looking south from sidewalk of Broadway from subject building – view of Auto Row neighborhood of Oakland



Photograph No. 6 – view looking northward from 29th Street down into surface flow of Glen Echo Creek approximately 12-15 feet below grade



Photograph No. 7 – view looking south from rear of grocery store driveway at entrance to underground conduit of Glen Echo Creek flowing southward



Photograph No. 8 – View of one of approximately 10 monitoring wells in two closely-spaced rows situated on both north and south parking lanes of 29th Street above underground conduit of Glen Echo Creek



Wheeler Group Environmental, LLC
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PHOTOGRAPHS PAGE 2
344-29th Street, Oakland CA

WGE Project No. 2016102

Work Plan



WORK PLAN

**Mercedes-Benz of Oakland
344 - 29th Street, Oakland, California**

**ACDEH-LOP Fuel Leak Case No. RO0003220
GeoTracker Global ID No. T1000009111
WGE Project # 2016102**

TABLES

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Laboratory Analysis Results of Environmental Sampling

2915 Broadway Street, Oakland, CA 94607

Mercedes Benz of Oakland

TABLE 1
Soil Sampling & Laboratory Analysis Results for Petroleum Hydrocarbons
 Results in mg/kg

<i>Field Point ID</i>	<i>Sampling Date</i>	<i>Depth – Feet</i>	<i>TPH-GRO C6-C10</i>	<i>TPH C10-C28</i>	<i>TPH >C28-C40</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethyl Benzene</i>	<i>Xylenes</i>	<i>Naphthalene</i>
9378-EX-N-6	09/23/2013	6	555	2020	6660	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.5)	ND (0.5)
9378-EX-S-6	09/23/2013	6	226	1170	4010	ND (0.12)	ND (0.12)	ND (0.12)	ND (0.25)	ND (0.25)
9378-SP1(A-D) COMP	09/23/2013	soil pile	ND (2.5)	1650	5120	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.05)	ND (0.05)
9378-SP2(A-D) COMP	09/23/2013	soil pile	98.3	1320	4100	ND (0.062)	ND (0.062)	ND (0.062)	218	241
9378-REMOTE Fill	10/03/2013		ND (0.049)	51.6	130	ND (0.00049)	ND (0.00049)	ND (0.00049)	ND (0.049)	ND (0.00097)
9378-EX-N-13	10/16/2013	13	29.4 a	99.9	302	0.0017	ND (0.0005)	0.0018	ND (0.00099)	0.0228
9378-EX-S-13	10/16/2013	13	25.3 a	202	626	ND (0.018)	ND (0.018)	ND (0.018)	ND (0.035)	0.0558
Tier 1 ESL Values	Feb. 2016		100	100	100	0.044	2.9	1.4	2.3	0.33

Notes:

No depth provided in UST removal report for remote fill sample

a – Atypical pattern; heavier hydrocarbons contributing to quantitation

Laboratory Analysis Results of Environmental Sampling

2915 Broadway Street, Oakland, CA 94607

Mercedes Benz of Oakland

TABLE 2
Water Sampling & Laboratory Analysis Results for Petroleum Hydrocarbons
 Results in µg/L

<i>Field Point ID</i>	<i>Sampling Date</i>	<i>Depth – Feet</i>	<i>TPH-GRO C6-C10</i>	<i>TPH C10-C28</i>	<i>TPH >C28-C40</i>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethyl Benzene</i>	<i>Xylenes</i>	<i>Naphthalene</i>
9378-GW-7	09/23/2013	7	209 a	10900	9830	2	0.4	0.29	2.6	2.5
9378-OW-6	09/23/2013	6	214 a	12300	6620	2.5	ND (0.4)	ND (0.4)	1.2	ND (1.0)
9378-GW-11.5	10/16/2013	11.5	116 a	1860	374	0.26	ND (0.2)	ND (0.2)	1.5	0.9
Tier 1 ESL Values	Feb. 2016		100	100	100	1	40	13	20	0.17

Notes:

a – atypical pattern; value primarily due to a single peak(s)

b – Atypical pattern; value primarily due to non-target hydrocarbons in the gasoline range

c – Atypical pattern; heavier hydrocarbons contributing to quantitation

Laboratory Analysis Results of Environmental Sampling

2915 Broadway Street, Oakland, CA 94607

Mercedes Benz of Oakland

TABLE 3
Soil Sampling & Laboratory Analysis Results for Metals
 Results in mg/kg

<i>Field Point ID</i>	<i>Sampling Date</i>	<i>Depth – Feet</i>	<i>Cadmium</i>	<i>Chromium</i>	<i>Lead</i>	<i>Nickel</i>	<i>Zinc</i>
9378-EX-N-6	09/23/2013	6	<0.85	50.1	12.7	67.1	42.6
9378-EX-S-6	09/23/2013	6	<0.86	60	10.6	62.5	35.3
9378-SP1(A-D) COMP	09/23/2013	soil pile	<0.83	47	2.8	62.9	50.7
9378-SP2(A-D) COMP	09/23/2013	soil pile	<0.83	39.7	20.8	29.7	41.8
9378-REMOTE Fill	10/03/2013		<0.83	35.5	3.3	22.3	18.5
9378-EX-N-13	10/16/2013	13	<0.92	75	7.5	69.7	70.5
9378-EX-S-13	10/16/2013	13	<0.86	79.6	8.3	73.4	69.9
Tier 1 ESL Values	Feb. 2016		39	NA a	80	820	23000

Notes:

NA – Not Available

a – no ESL available for total Chromium in soil – observed concentrations appear to be within range of background soil concentrations for Bay Area soils

Laboratory Analysis Results of Environmental Sampling

2915 Broadway Street, Oakland, CA 94607

Mercedes Benz of Oakland

TABLE 4

Water Sampling & Laboratory Analysis Results for Metals

Results in µg/L

<i>Field Point ID</i>	<i>Sampling Date</i>	<i>Depth – Feet</i>	<i>Cadmium</i>	<i>Chromium</i>	<i>Lead</i>	<i>Nickel</i>	<i>Zinc</i>
9378-GW-7	09/23/2013	7	NA	NA	NA	NA	NA
9378-OW-6	09/23/2013	6	<2.0	<10	27.2	12.6	174
9378-GW-11.5	10/16/2013	11.5	NA	NA	NA	NA	NA
Tier 1 ESL Values	Feb. 2016		0.25	50	2.5	8.2	81

Notes:

NA – Not Available

Laboratory Analysis Results of Environmental Sampling

2915 Broadway Street, Oakland, CA 94607

Mercedes Benz of Oakland

TABLE 5
Soil Sampling & Laboratory Analysis Results for VOC
 Results in mg/kg

<i>Field Point ID</i>	<i>Sampling Date</i>	<i>Depth – Feet</i>	<i>Acetone</i>	<i>Butyl benzene</i>	<i>Chloro benzene</i>	<i>Isopropyl benzene</i>	<i>Isopropyl toluene</i>	<i>4-Methyl-2-pentanone</i>	<i>MEK</i>	<i>MTBE</i>	<i>N-Propyl benzene</i>	<i>TBA</i>	<i>Trimethyl benzene</i>
9378-EX-N-6	09/23/2013	6	ND (5)	1.229	2.4	ND (0.25)	ND (0.25)	ND (1.0)	ND (1.0)	ND (0.5)	0.477	ND (0.5)	ND (0.5)
9378-EX-S-6	09/23/2013	6	ND (2.5)	0.647	3.64	ND (0.12)	ND (0.12)	ND (0.5)	ND (0.5)	ND (0.25)	0.379	ND (0.25)	ND (0.25)
9378-SP1(A-D) COMP	09/23/2013	soil pile	ND (5)	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.099)	ND (0.099)	ND (0.05)	ND (0.025)	ND (0.05)	ND (0.05)
9378-SP2(A-D) COMP	09/23/2013	soil pile	ND (1.2)	0.385	1.69	ND (0.062)	0.0645	ND (0.25)	ND (0.25)	ND (0.12)	0.249	ND (1.2)	0.534
9378-REMOTE Fill	10/03/2013		ND (0.0097)	ND (0.00049)	ND (0.00049)	ND (0.00049)	ND (0.00049)	ND (0.0019)	ND (0.0019)	ND (0.00097)	ND (0.00049)	ND (0.00097)	ND (0.00097)
9378-EX-N-13	10/16/2013	13	0.201	0.0259	1.29	0.0131	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.00091)	0.0228	ND (0.0099)	ND (0.0099)
9378-EX-S-13	10/16/2013	13	ND (0.35)	0.0441	0.504	0.0213	ND (0.018)	ND (0.071)	ND (0.071)	ND (0.00091)	0.0558	ND (0.350)	ND (0.350)
Tier 1 ESL Values	Feb. 2016		100	100	100	0.044	2.9	NA	5.1	0.023	NA	0.075	NA

Notes: No depth provided in UST removal report for remote fill sample

Notes: a – Atypical pattern; heavier hydrocarbons contributing to quantitation

Laboratory Analysis Results of Environmental Sampling

2915 Broadway Street, Oakland, CA 94607

Mercedes Benz of Oakland

TABLE 6
Water Sampling & Laboratory Analysis Results for VOC
 Results in µg/L

<i>Field Point ID</i>	<i>Sampling Date</i>	<i>Depth – Feet</i>	<i>Acetone</i>	<i>Butyl benzene</i>	<i>Chloro toluene</i>	<i>Isopropyl benzene</i>	<i>Isopropyl toluene</i>	<i>4-Methyl-2-pentanone</i>	<i>MEK</i>	<i>MTBE</i>	<i>N-Propyl benzene</i>	<i>TBA</i>	<i>Trimethyl benzene</i>
9378-GW-7	09/23/2013	7	209 a	10900	9830	2	0.4	1	4.3	1.2	0.66	6.1	2.63
9378-OW-6	09/23/2013	6	214 a	12300	6620	2.5	ND (0.4)	ND (2.0)	ND (4.0)	1.2	ND (0.40)	ND (0.40)	ND (0.40)
9378-GW-11.5	10/16/2013	11.5	116 a	1860	374	0.26	ND (0.2)	ND (1.0)	ND (2.0)	0.6	1	7.2	1.66
Tier 1 ESL Values	Feb. 2016		100	100	100	1	40	NA	5600	5	NA	12	NA

Notes:

MEK – Methyl ethyl ketone

MTBE – Methyl Tert Butyl Ether

TBA – Tert-Butyl Alcohol