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May 26, 2015

Mr. Jerry Wickham
ALAMEDA COUNTY ENVIRONMENTAL HEALTH
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6700

RECEIVED
By Alameda County Environmental Health 10:26 am, May 29, 2015

Project No. 33113-013181.00

Subject: Work Plan for the installation two groundwater monitoring wells and to locate monitoring Well S-13 at Shell-branded gasoline station, 1800 ½ Powell Street, Emeryville, California Case No. RO0000254 and GeoTracker Global ID: T0600101231

Dear Mr. Wickham:

Bureau Veritas North America, Inc. (BVNA), on behalf of Au Energy, LLC (Au Energy, the *responsible party*), is submitting this work plan to Alameda County Environmental Health (ACEH) for the above referenced address (Site). This work plan was prepared in response to the ACEH's letter dated April 6, 2015.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge. If you have any comments or questions regarding this report, please do not hesitate to contact Mark Williams at (925) 426-2676 or Sophie Lagacé at (925) 426-2607.

Sincerely,

Sunny Goyal
Au Energy LLC.
41805 Albrae Street
Fremont, CA 94538

PM/jw

cc: Mr. Sunny Goyal, Au Energy, LLC



May 26, 2015

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Case No. RO0000254 and GeoTracker Global ID: T0600101231

Dear Mr. Wickham:

As requested, Bureau Veritas North America, Inc. (BVNA) on behalf of Au Energy, LLC (Au Energy, the responsible party), has prepared this Work Plan for installing two groundwater monitoring wells, and to re-locate monitoring well S-13 at the above referenced address (Site). Figure 1 depicts the Site location and Figure 2 depicts the location of S-13, and the location of the proposed monitoring wells S-14 and S-15.

The purpose of this proposed work is to assess groundwater quality down-gradient of a historical diesel release, between the Site and the San Francisco Bay, by installing two new monitoring wells. One well will be located immediately down-gradient of the former diesel line break, and the second one to the south of Powell Street between the Site and the San Francisco Bay. This work plan also addresses efforts to re-establish well S-13, which was paved over during Site renovation work.

This Work Plan was prepared in response to a letter from Alameda County Environmental Health (ACEH) dated April 6, 2015, regarding *Case File Review for Fuel Leak Case No. RO0000254 and GeoTracker Global ID T0600101231, Shell #13-5266, 1800 Powell Street, Emeryville, CA 94608.*

BACKGROUND

The Site is an active retail gasoline station with a station building and a canopy structure covering dispenser islands. Conestoga-Rovers & Associates (CRA) performs annual groundwater monitoring of the Site on behalf of Equilon Enterprises LLC dba Shell Oil Products (Shell). Monitoring wells S-8, S-9, S-10, and S-13 are located in the sidewalk area adjacent to the site. The sampling events typically occur during the 4th quarter of each year; however, due to remodeling work, the planned December 2014 event was delayed to February 2015. At that time, CRA was unable to locate monitoring well S-13, as it had been covered by new sidewalk pavement.

Bureau Veritas North America, Inc.

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In May and June 2014, three gasoline underground storage tanks (USTs), one diesel UST, and impacted soil, fill materials and pea gravel around the former USTs were removed from the Site as documented in *Underground Storage Tank Removal Report*, dated August 11, 2014, prepared by Sparger Technology Inc. The extent of excavation around the former USTs was at least 45 feet by 65 feet in area and 12 feet in depth.

During the UST removal activities, diesel impacted soil and fill materials, which were associated with historical damage to a subsurface fiberglass diesel fuel product line, were also excavated for removal. These soils were removed laterally and vertically to a point where there was no diesel fuel impact visible in the sidewalls or base of the excavation, except that the extent of excavation was constrained to the south of the line breakage by the presence of Pacific, Gas and Electric (PG&E) utility lines. At the southern edge of the excavation, little to no diesel impact was observed. The extent of excavation was at least 10 feet by 40 feet in area and 5 to 6 feet deep. The removal of these soils is described in the report entitled *Interim Removal Action Report* prepared by BVNA and dated February 19, 2015.

SCOPE OF WORK

BVNA proposes the following scope of work to complete the project objectives:

Pre-Field Activities

Upon approval of this Work Plan, BVNA will submit the required permit applications and obtain a monitoring well construction permit from Alameda County Public Works Agency (ACPWA) and an encroachment permit from City of Emeryville Department of Public Works (DPW), and/or the East Bay Regional Parks District (EB Parks) for the installation of the offsite monitoring well S-14.

A Site Health and Safety Plan (SHSP) will be prepared in accordance with the requirements of the State of California General Industry Safety Order (GISO) 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). A copy of the SHSP will be kept onsite during field activities. The SHSP will detail the work to be performed, safety precautions, emergency response procedures, nearest hospital information, and onsite personnel responsible for managing emergency situations.

The location of the proposed monitoring well will be marked in white paint and Underground Service Alert (USA) will be contacted at least 48 hours prior to drilling, as required by law. A private utility locating service will be utilized prior to conducting the field activities to clear the proposed boring locations of potential subsurface utilities. Subsurface work will not be conducted prior to Site clearance by USA and the utility locating service.

The existing network of monitoring wells was surveyed in 2002 by Virgil Chavez surveying and geo-spatial coordinates are available online at the State Water Resources Control Board's Geotracker database <http://geotracker.waterboards.ca.gov/>. These coordinates will be utilized during the utility field survey to mark the location of S-13 on the sidewalk.



Installation of Groundwater Monitoring Wells

Following permit approvals, a licensed C-57 drilling contractor utilizing a truck-mounted hollow stem auger drill rig will advance two borings (S-14 and S-15), to be completed as groundwater monitoring wells. During drilling, soil samples will be collected from the borehole for soil logging, and field observations will be recorded. The soil cores will be examined for soil classification and described on detailed boring logs in general conformance with the Unified Soil Classification System (USCS). Soil cores will be field screened for volatile organic compounds (VOCs) with a photoionization detector (PID), and results will be recorded on the boring log.

As requested by the ACEH, soil samples will be collected for analysis at depths of approximately 2.5, 5.0, 10, 15 and 20 feet below ground surface (bgs). Soil samples collected for Total Petroleum Hydrocarbons as gasoline (TPH-g) or VOC analysis will be preserved in accordance with EPA Method 5035. The samples will be labeled with identifying information, and stored in a pre-chilled ice-chest. Soil samples selected for chemical analysis will be recorded onto a chain-of-custody document that will accompany the samples to the laboratory. Each monitoring well will be constructed as a 4-inch diameter well to a depth of 20 feet bgs within the completed borehole using a well screen that will be flush-threaded to Schedule-40 polyvinyl chloride (PVC) blank pipe in the borehole. The well screen section will be constructed of four-inch diameter schedule 40 PVC casing factory-perforated with 0.020-inch slots or larger, and fitted with a PVC end cap. The 20-foot depth is proposed to obtain data beneath the fill layer within which the existing wells are installed (12 to 18 feet bgs).

The well screen filter pack for will be constructed by pouring clean graded-sand filter pack to fill the annular space of the borehole from the bottom of the borehole to approximately 2 feet above the top of the screened section of casing. A 1-foot thick section of 3/8-inch bentonite pellets will be placed over the sand pack, and hydrated to seal the top of the sand pack prior to placement of the grout seal. The grout seal will consist of neat Portland cement-grout placed from the top of the bentonite seal to within a foot of the ground surface. The remaining one foot of annular space will be constructed of the concrete surface cap in which a traffic-rated well box will be set to cover the top of the well casing. The well box will be mounted with a locking type box that contains a gasket seal and a lockable expanding well cap used to secure and seal the wellhead. A notch will be placed on the north side of the top of the well casing for use as a surveying and depth to water measurement reference point. The well construction details will be recorded on a well construction field log for incorporation in the report.

Drilling equipment and down-hole sampling equipment will be steam cleaned or washed in a solution of non-phosphate detergent, double rinsed with tap water after each use, and allowed to dry. Rinse water and soil drilling cuttings will be containerized in U.S. Department of Transportation (DOT) approved 55-gallon drums.

A State of California Licensed Land Surveyor will survey the location and elevation of the groundwater monitoring well. The survey will include the top of well casing elevation (north face) and top of well box rim elevation. The elevation data will be surveyed to an accuracy of 0.01 foot. The northing and easting coordinates will be surveyed to 0.1-foot accuracy and referenced to a recognized survey monument.



Upon completion, the survey information for the well will be uploaded into the State of California GeoTracker website.

Development and Sampling of Monitoring Wells

The new monitoring well will be developed to help stabilize the filter pack-sand and geologic materials surrounding the well screen and to remove sediment that accumulated in the well casing and filter pack during well construction. Well development will be accomplished by the repeated insertion and withdrawal of a surge block inside the well casing. Following surging, groundwater will be removed from the well casing using a disposable bailer or submersible pump. With the removal of each well casing volume, water quality parameters, including pH, specific conductivity and temperature will be taken. Surging and bailing activities will continue until either: 1) a minimum of ten well casing volumes of water has been removed, 2) the water quality parameters have stabilized, or 3) the well is purged dry.

Prior to sample collection, the monitoring well will be gauged to the nearest 0.01 foot with an electronic water level indicator. The well will be purged using low-flow purging, which involves removing groundwater from the well at a slow rate to minimize stress on the aquifer and the potential for entraining fine sediments, and to reduce the total purge volume while collecting a representative water sample. A peristaltic or submersible pump with new polyethylene tubing will be used to purge the well at a rate of approximately 0.5 liters per minute. During purging, drawdown in the well will be monitored and kept to a minimum. Physical parameters including pH, electrical conductivity, dissolved oxygen (DO), oxidation / reduction potential (ORP), turbidity, and temperature will be measured during purging with a field meter and flow-through cell connected to the pump discharge tubing at five minute intervals. Purging will be considered complete when field parameters have stabilized or when three casing volumes have been purged from the well. Following well purging, a groundwater sample will be collected and decanted into the appropriate laboratory-supplied sample containers. The sample will be capped, labeled with identifying information, placed in a chilled cooler, and recorded on a chain-of-custody document.

Well development and down-hole sampling equipment will be steam-cleaned or washed in a solution of non-phosphate detergent, double-rinsed with tap water after each use, and allowed to dry and/or will be disposable. Decontamination water and purge water will be containerized in 55-gallon drums for offsite disposal.

Location of Monitoring Well S-13

A section of the sidewalk will be removed to expose the soil base below. The top of the well casing will be located using hand tools. For the purpose of this Work Plan, BVNA assumes that the monitoring well will be located and that the well plug is intact. A new traffic rated vault box will be constructed and the sidewalk will be replaced.

Laboratory Analyses

Up to 10 soil samples collected during the well installation and three groundwater samples collected from the developed wells (S-14 and S-15) and from S-13, and will be submitted to a State-certified laboratory



Mr. Jerry Wickham
ACEH

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for chemical analysis by the following United States Environmental Protection Agency (USEPA) Methods as required by ACEH:

- TPH-g, benzene, toluene, ethylbenzene and xylenes (BTEX) and fuel oxygenates by Method 8260B.
- TPH as diesel (TPH-d) and motor oil (TPH-mo) by Method 8015M
- Naphthalene by Method 8270c (soil only)

The samples will be analyzed on a standard 5 to 10 business-day turn-around time.

Reporting

Upon receipt of laboratory analyses, a written report will be prepared summarizing a description of the Site, investigative methodologies and analytical results. The report will include summary tables with historical data, figures, a boring log, and certified laboratory analytical reports. The analytical results and report will be uploaded to the State of California GeoTracker database and ACEH websites. The data will be submitted through Electronic Deliverable Format (EDF) that includes all sample results, latitude, longitude, and elevations of well locations, and a PDF file of the report. Well completion logs will be provided to the State of California Department of Water Resources.

Closing

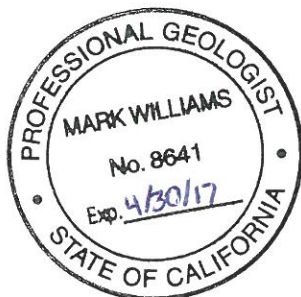
Following the initial sampling event, future groundwater sampling events of the new well will be scheduled to align with ongoing work at the Site conducted CRA. If you have any questions or concerns, please contact us.

Sincerely,

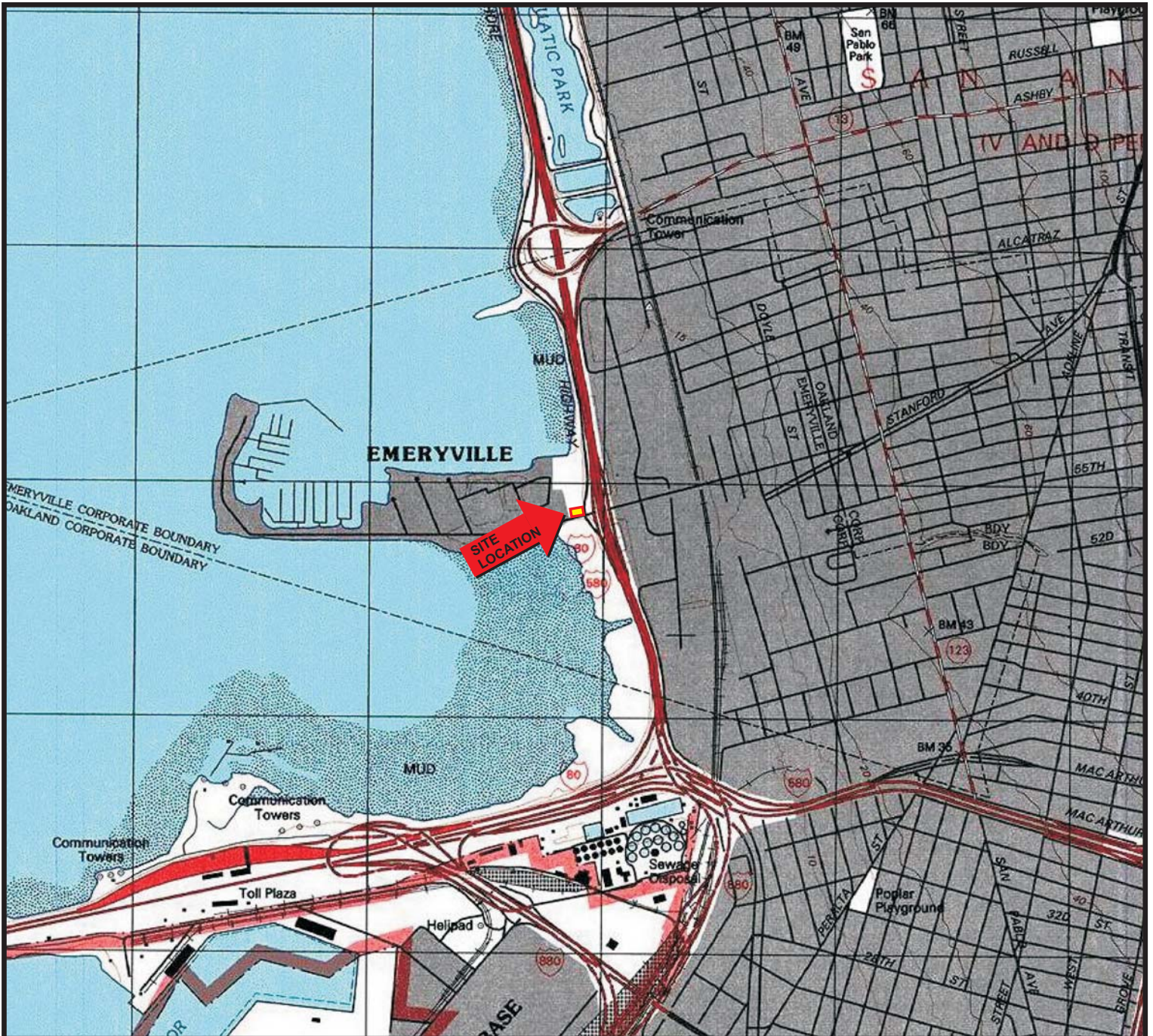
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Enclosures – Figures 1 and 2

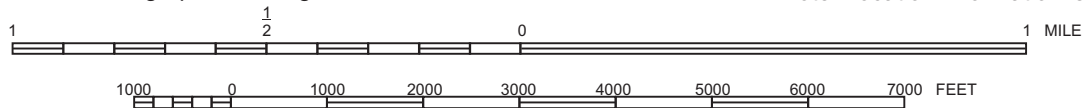


FIGURES



Source: TOPO! © 2000 National Geographic Holdings

Note: Location Information is Approximate



Portion of the 7.5-Minute Series, Oakland West, California
 Quadrangle Topographic Map (Datum: NAD 83)
 United States Department of the Interior
 Geological Survey
 1997 Photorevised from 1993



QUADRANGLE LOCATION

SITE LOCATION MAP

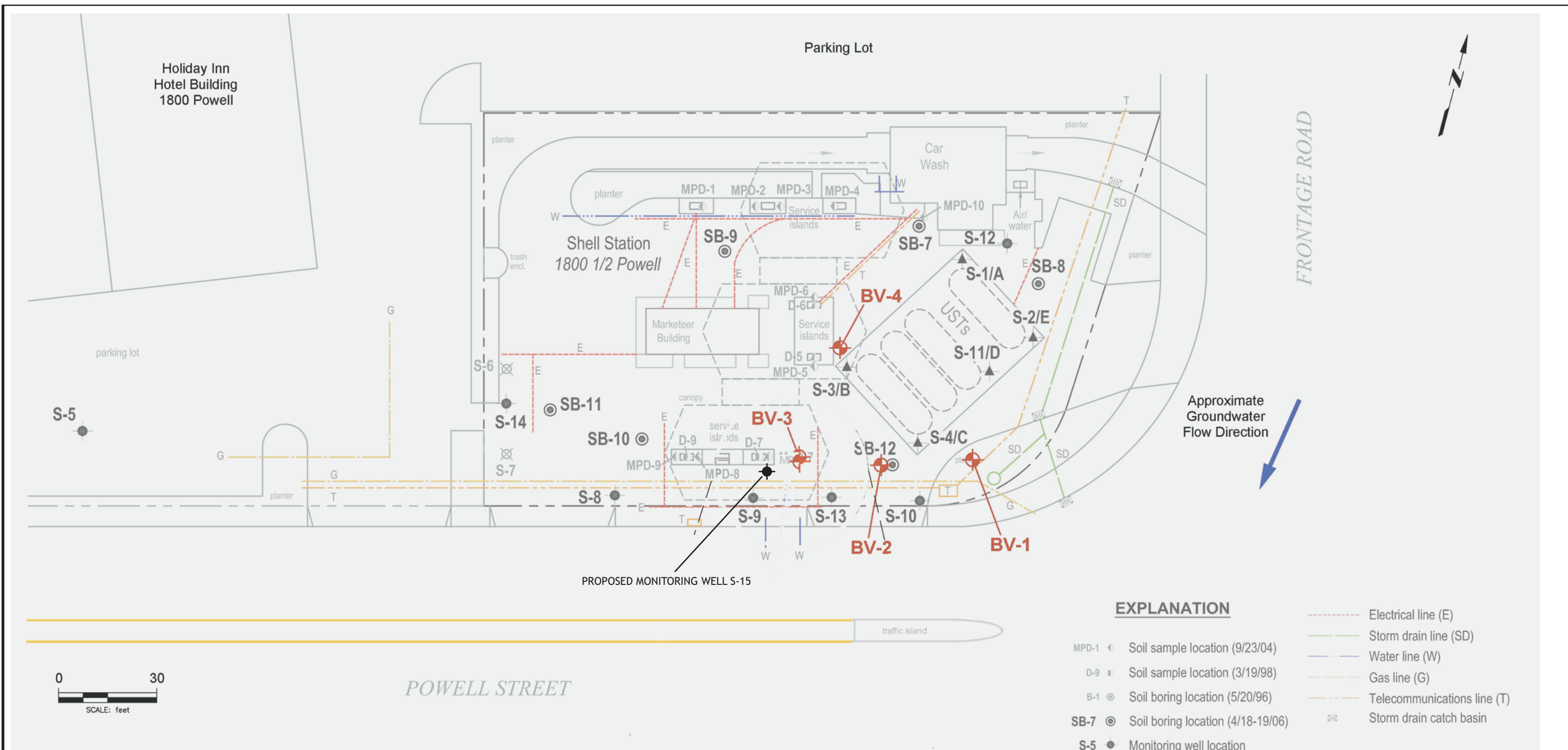
1800 1/2 Powell Street
 Emeryville, California

FIGURE

1



**BUREAU
 VERITAS**



PROPOSED MONITORING WELL S-15

EXPLANATION

- MPD-1 ◀ Soil sample location (9/23/04)
- D-9 ■ Soil sample location (3/19/98)
- B-1 ⊙ Soil boring location (5/20/96)
- SB-7 ⊙ Soil boring location (4/18-19/06)
- S-5 ● Monitoring well location
- S-6 ⊗ Destroyed monitoring well location
- S-1/A ▲ Tank backfill well location (former)
- ⊕ Soil Boring Location (Bureau Veritas, 9/30/13)
- △ Soil Sample Location (Bureau Veritas, 10/4/13)
- Electrical line (E)
- Storm drain line (SD)
- Water line (W)
- Gas line (G)
- Telecommunications line (T)
- Storm drain catch basin

PROPOSED MONITORING WELL S-14



REFERENCE: CAMBRIA, "SITE PLAN". DATED 6/2/2006.
and WEISS & ASSOCIATES 1996

SITE LAYOUT

Shell-Branded Service Station
1800 1/2 Powell Street
Emeryville, California

Project No. 33113-013181.00

FIGURE

2

