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April 11, 2012

Mr. Jerry Wickham
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Fuel Leak Case RO0458**
Workplan for Modification of Well B-9
Site Location: 3820 Manila Avenue, Oakland, CA

Dear Mr. Wickham:

SOMA Environmental Engineering, Inc. (SOMA) has prepared this workplan for the Law Offices of Loeb & Loeb LLP on behalf of their client, the subject property owners. The property, the former Glovatorium, is located at 3820 Manila Avenue (formerly known as 3815 Broadway), Oakland, California, as illustrated in Figure 1. The site is located in an area of primarily commercial and residential development.

During the two recent groundwater monitoring events (Second Semi-Annual 2011 and First Semi-Annual 2012), measurable free product was detected in well B-9 at 0.18 and 0.04 feet in thickness, respectively. Figure 1 shows the location of this well. Free product was not detected in any other monitoring or remedial well during the above-mentioned events. As such, SOMA proposes to incorporate this well into the ongoing MPE pilot testing in order to remove residual free product and expedite remedial activities at the site.

Well B-9 is currently installed as a ¾-inch well to total depth of 19.5 feet below ground surface (bgs), with the screening interval extending from 4.5 to 19.5 feet bgs (Figure 1). Due to insufficient ceiling height within the Glovatorium building and resulting limitation of access for the rig, this well cannot be constructed with optimal 4-inch diameter casing. Therefore, SOMA proposes to overdrill this well, and remove well casing, and reinstall it as an extraction well with 2-inch-diameter PVC casing. During the above-mentioned two most recent monitoring events, depth to water in this well was observed at 10.89 and 13.31 feet bgs, respectively. SOMA proposes installing this well to a depth of 20 feet bgs within the First Water-Bearing Zone, unless field observations indicate that a greater depth is required.

Prior to initiating field activities, SOMA will obtain required permitting from Alameda County Public Works Department for drilling activities. SOMA will also update the site-specific Health and Safety Plan (HASP) before beginning field installation activities. SOMA will notify Underground Service Alert (USA) to ensure drilling areas are clear of underground utilities. Following USA clearance, SOMA will retain a private utility locator to survey the proposed drilling area and locate any additional subsurface conduits.

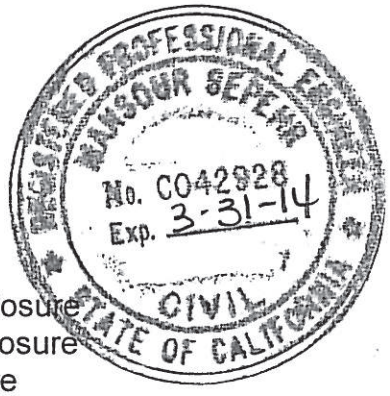
The proposed well B-9R will be installed with 2-inch-diameter PVC casing and 0.02-inch-wide by 1.5-inch-long factory-slotted perforation; the upper portion will consist of blank PVC. A PVC cap will be fitted to the bottom of the casing, without adhesives or tape. Based on previous investigations, the length of perforated interval will be approximately 16 feet, starting at 4 feet bgs. A 2/12 sand pack filter, or other appropriate sand pack based on observed lithology, will be emplaced around the screen and, if possible, surged to consolidate the filter packs and eliminate voids. The filter pack will be emplaced to the height of the top of the screen and sealed with at least a 1-foot-thick hydrated bentonite plug followed by a minimum 1-foot annular seal of neat cement to surface. To protect the modified well from accidental damage or tampering, a traffic rated utility box with internal steel protective cover and locking cap will be placed over the extraction wellhead, and will be set in concrete and resting flush with existing grade. Provisions may be made to equip the wellhead with appropriate compression fitting to be used during proposed pilot testing.

A licensed surveyor will survey this well to comply with Geotracker requirements. The survey report will be included in SOMA's final report. Soil and wastewater generated during well reconstruction activities will be temporarily stored on-site in separate DOT-rated, 55-gallon steel drums pending characterization, profiling, and transport to an approved disposal/recycling facility. A description of general field procedures is attached to this workplan.

Upon completion of the proposed well modification, additional pilot testing will be performed using this modified extraction well. Furthermore, due to elevated concentrations of dissolved volatile organic compounds in LFR-2, SOMA also proposes to utilize LFR-2 as an extraction well during continued pilot testing. If you have any questions or comments, please do not hesitate to call me at (925) 734-6400.

Sincerely,

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist



cc: Mr. Albert M. Cohen, LOEB & LOEB LLP w/enclosure
Mr. Peter W. McGaw, ARCHER NORRIS w/enclosure
Mr. John Kortum, ARCHER NORRIS w/enclosure
Mr. Stuart Depper w/enclosure
Ms. Betty Graham, Regional Water Quality Control Board w/o enclosure

Attachment

Hollow Stem Auger Drilling/Monitoring Well Installation

Utility Locating

Prior to drilling, boring locations are marked with white paint or other discernible marking, and cleared for underground utilities through Underground Service Alert (USA). In addition, the first five feet of each borehole are air-knifed, or carefully advanced with a hand auger if shallow soil samples are necessary, to help evaluate the presence of underground structures or utilities.

Borehole Advancement

Pre-cleaned hollow stem augers (typically 8 to 10 inches in diameter) are advanced using a drill rig for the purpose of collecting samples and evaluating subsurface conditions. Upon completion of drilling and sampling, if no well is to be constructed, the augers are retracted, and the borehole is filled with neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, through a tremmie pipe to displace standing water in the borehole. In areas where the borehole penetrates asphalt or concrete, the borehole is capped with an equivalent thickness of asphalt or concrete patch to match finish grade.

During the drilling process, a physical description of the encountered soil characteristics (i.e. moisture content, consistency or density, odor, color, and plasticity), drilling difficulty, and soil type as a function of depth are described on boring logs. The soil cuttings are classified in accordance with the uses.

Groundwater Monitoring Well Installation and Development

Groundwater monitoring wells are constructed by inserting or tremmieing well materials through the annulus of the hollow stem auger. The groundwater monitoring wells are constructed with a screen interval determined from the encountered soil stratigraphy, to maintain a proper seal at the surface (minimum three feet), to allow flow from permeable zones into the well, and to avoid penetrating aquicludes. Groundwater wells are installed in accordance with the conditions of the well construction permit issued by the regulatory agency exercising jurisdiction over the project site.

The well screen generally consists of schedule 40 polyvinyl chloride (PVC) casing with 0.01 to 0.02-inch factory slots. As a general rule, 0.01-inch slots are used in fine-grained silts and clays, and 0.02-inch slots are used in coarse-grained materials. The screen is then filter packed with #2/12 or #3 sand, or equivalent, for the 0.01 and 0.02 inch slots, respectively.

Once the borehole has been drilled to the desired depth, the well screen and blank well casing are inserted through the annulus of the hollow stem augers. The well screen is sand packed by tremmieing the appropriate filter sand through the annulus between the casing and augers while slowly retracting the augers. During this operation, the depth of the sand pack in the auger is continuously sounded to make sure that the sand remains in the auger annulus during auger retraction to avoid short-circuiting the well. The sand pack is tremmied to approximately two feet above the screen, at which time pre-development surging is performed to consolidate the sand pack. Additional sand is added as necessary so that the sand pack extends approximately two feet above top of screen. Following construction of the sand pack, a one to two foot thick bentonite seal is tremmied over the sand and hydrated in place. The remainder of the borehole is backfilled with Portland neat cement grout (or the equivalent), mixed at ratio of 6 gallons of water per 94 pounds of neat cement. The well head is then capped with a locking

cap and secured with a lock to protect the well from surface water intrusion and vandalism.

The well head is further protected from damage with traffic a rated well box in paved areas or locking steel riser in undeveloped areas. The protective boxes or risers are set in concrete. The details of well construction are recorded on well construction logs.
Following well construction, the wells are developed in accordance with agency protocols by intermittently surging and bailing the wells. Development is determined to be sufficient once pH, conductivity, and temperature stabilize to within s 0.1, s 3%, and s 10%, respectively.

Equipment Decontamination

Equipment that could potentially contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drill augers and other large pieces of equipment are decontaminated using high-pressure hot water spray. Samplers, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

Soil Cuttings and Rinsate/Purge Water

Soil cuttings and rinsate/purge water generated during drilling and sampling are stored on-site in DOT-approved 55-gallon steel drums pending characterization. A label is affixed to the drums indicating the contents of the drum, suspected contaminants, date of generation, and the boring number from which the waste is generated. A licensed waste disposal contractor removes the drums from the site to an appropriate facility for treatment/recycling.

Perjury Statement

Stuart Depper	Responsible Party
Name	Title

3820 Manila Avenue	Oakland	94609
Street Address	City	Zip

I declare under penalty of perjury that the information and/or recommendations contained in the attached document or report were prepared under my direction and to the best of my knowledge true and correct.

Signature

4-11-12

Date

N

COMMERCIAL AREA

COMMERCIAL AREA

PARKING AREA

PARKING AREA

MW-8

MW-9

MW-11

MH-1

MH-3

Sanitary Sewer Manhole

GW-1

GW-8

LFR-1

10" Diameter Cast Iron Sanitary Sewer

THE GLOVATORIUM

SB-11

SB-7

MPE-1

SB-8

SB-9

MH-5

B-9

B-10

MPE-2

MPE-3

B-8

B-2

SOMA-2

SOMA-3

SB-10

SB-12

SB-16

B-7

SB-13

SB-15

SOMA-4

B-4

MPE-5

B-6

MPE-4

B-3

B-13

SB-14

SB-6

GW-2

54" Diameter Storm Drain

SB-5

SB-2

SB-4

SB-3

SB-1

LFR-2

SOMA-1

GW-4

RESIDENCES

MANILA AVENUE

RESIDENCE

RESIDENCE

PARKING

RESIDENCE

DRIVE

DRIVE

Earl Thompson

B-12

Inlet

GW-3

10" Storm Conduit

MH-4

GW-5

GW-5A

B-11

GW-7

LFR-4

Lamphole

GW-6A

GW-6

LFR-3

38TH ST

MH-2

RED CROSS BUILDING

BROADWAY

Extraction Wells May 2009
Not Completed to Depth

MW-5A/MW-7 Decommissioned 7/99
MW-6/MW-8 Decomissioned 7/00

Location of Former USTs

Soil Borings MAY 2009

SOMA Monitoring Well

TOSCO Monitoring Well

Geosolv Monitoring Well

LFR Monitoring Wells

54" Diameter Storm Conduit

Storm Conduit Manhole

10" Diameter Cast Iron
Sanitary Sewer w/ Floor Drains

Sanitary Sewer Manhole

Decommissioned USTs
(Earl Thompson)
Adjacent to 316 38th Street

approximate scale in feet

0 40 80

Figure 1: Map showing the Approximate Locations of Existing Monitoring Wells and Soil Borings

SOMA ENVIRONMENTAL ENGINEERING, INC.