October 7, 2009

GRIFFIN CAPITAL

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1211.001.01.001

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Attention: Mr. Mark Detterman

Transmittal
Work Plan for Groundwater Monitoring
and Preferential Pathway Study
1650 65th Street
Emeryville, California
Fuel Leak Case No. RO0000440
Geotracker Global ID T0600100511

Dear Mr. Detterman:

Submitted herewith for your review is the *Work Plan for Groundwater Monitoring and Preferential Pathway Study, 1650 65th Street, Emeryville, California* prepared by PES Environmental, Inc.

I declare, under penalty of perjury, that the information and recommendations contained in the attached document are true and correct to the best of my knowledge.

Very truly yours,

GRIFFIN CAPITAL CORPORATION

Julie A. Treinen
Managing Director, Asset Management

cc: Chris Baldassari, PES Environmental, Inc.

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PES Environmental, Inc.
Engineering & Environmental Services

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1131 Harbor Bay Parkway, Suite 250
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Attention: Mr. Mark Detterman

Subject: Work Plan for Groundwater Monitoring and Preferential Pathway Study, 1650 65th Street, Emeryville, California
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Dear Mr. Detterman:

This *Workplan for Groundwater Monitoring and Preferential Pathway Study* (Work Plan) has been prepared by PES Environmental, Inc. (PES) on behalf of Griffin Capital Corporation (Griffin), as agent for the fee owners for the property located at 1650 65th Street, in Emeryville, California (Site; Plate 1). PES understands that Griffin has been requested by the Alameda County Department of Environmental Health (ACEH) to submit a work plan addressing technical comments concerning the subject property (also known as the Atrium, and formerly Emery Bay Plaza) presented in a letter to Griffin dated July 7, 2009. The request is based on their review of an April 27, 2001 report[1] prepared by PES, which included a request for regulatory case closure.

BACKGROUND INFORMATION

One 2,000-gallon gasoline underground storage tank (UST) was removed from the Site in July 1987. A fuel release affecting soil and groundwater was discovered at that time. Soil remediation activities were completed under a remedial plan[2] approved by ACEH in 1988. Groundwater monitoring was initiated in November 1989. A groundwater remediation system was installed in December 1990 to extract and treat groundwater. In December 1991, PES

[1] PES Environmental, Inc. 2001. *Groundwater Monitoring Report and Request for Closure, Emery Bay Plaza, 1650 65th Street, Emeryville, California.* April 27.

[2] Engineering-Science (ES) 1987. *Soil Remediation Plan for the Southeastern Corner of 1650 65th Street Property, Emeryville, California.* December 18.

was retained by P.O. Partners, the Site owner at the time, to operate the remediation system. Because of the low rate at which petroleum hydrocarbons were being removed from the subsurface, remediation via groundwater extraction was terminated in October 1993 and an *in-situ* bioremediation pilot program was initiated to better address remaining concentrations of dissolved petroleum hydrocarbons in the vicinity of the former UST. The pilot study began in August 1994 and the *in-situ* bioremediation program continued until December 1998. At that time, ACEH approved cessation of groundwater remediation and monitoring, and directed the Site be evaluated for closure. In April 2001, PES submitted to ACEH a report[3] on behalf of TMG Partners that recommended no further groundwater monitoring on the basis of the stable and localized nature of the groundwater plume, and requested documentation of "No Further Action" with respect to the former UST.

This Work Plan addresses technical comments presented in the ACEH letter of July 7, 2009. An assessment and discussion of data gaps identified by ACEH, a proposed scope of work, and a description of methods are presented below.

Vertical Petroleum Hydrocarbon Definition (Technical Comment No. 2)

PES reviewed reports prepared by Engineering-Science, Inc. (ES) documenting the removal of the former UST[4] and the completion of soil remediation activities[5] implemented as described in the remdial plan. Remediation activities were conducted in February and March 1988 and included (1) excavation and disposal of 92 cubic yards of contaminated soil in the vicinity of the former 2,000-gallon UST; (2) collecting and analyzing confirmation soil samples from the excavation; and (3) backfilling the excavation with clean soil. As described in the remedial implementation report, two discrete soil samples (BW-2 and BE-2) were collected from the bottom of the excavation at approximately 17 feet bgs. Figure 4 of the implementation report also indicates that sample BW-2 was collected approximately one foot southeast of the former MW-1 location. The implementation report also provides confirmation that results of the two samples indicated that contaminant concentrations were below applicable regulatory thresholds, and that backfilling of the excavation was subsequently approved by ACEH and San Francisco Bay Regional Water Quality Control Board (RWQCB) representatives.

The implementation of the remedial plan appears to have been successful in (1) removing 92 cubic yards of contaminated soil from within the source area, and (2) providing documentation

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[3] PES Environmental, Inc. 2001. *Groundwater Monitoring Report and Request for Closure, Emery Bay Plaza, 1650 65th Street, Emeryville, California.* April 27.

[4] Engineering-Science (ES) 1987. *Underground Fuel Storage Tank Site Investigation near the Southeast Corner of the Warehouse Building, 1650 65th Street Property, Emeryville, California.* September 18.

[5] Engineering-Science (ES) 1988. *Implementation of Remedial Action Plan Report for United States Postal Service Site at 1650-65th Street, Emeryville California.* April 6.

that significant contamination is not present in soil at depths greater 17 feet bgs in the vicinity of the source area. Therefore, this Work Plan does not contemplate additional borings in the vicinity of the former UST source area.

Soil Vapor Sampling (Technical Comment No. 4)

The July 7, 2009 ACEH letter to Griffin stated that the soil vapor pathway remains unevaluated. However, the soil vapor pathway was evaluated in the *Groundwater Monitoring Report and Request for Closure* document dated April 27, 2001. The evaluation was based on numerical modeling results, and was performed to estimate potential indoor air concentrations which might result from volatilization of residual dissolved aromatic hydrocarbons in the groundwater beneath the office building. The evaluation concluded that concentrations detected in the affected groundwater did not appear to pose significant health risk to Site users. However, since the evaluation was performed the building has been retrofitted with a passive methane gas collection system, described below, that materially changes initial conditions and assumptions utilized in the 2001 vapor intrusion evaluation.

As you are aware, the Site was constructed on bay fill. Because of the potential for methane generation in the subsurface and associated hazards, several methane-related studies were completed for the Site[6]. Results from these studies indicated that elevated methane concentrations were present beneath the concreted floor slab. Consequently, in 2004/2005 a passive sub-slab methane collection and control system was installed that vents beneath the entire footprint of the building, including in the vicinity of the former UST[7]. The system consists of 24 vertical gas ventilation wells which collect methane gas from beneath the building slab and vent the gas to the atmosphere at the roof. In doing so, the methane system also significantly diminishes the potential for intrusion of fuel-related vapors, if any, to the building interior. Therefore, because the exposure pathway for sub-slab vapor intrusion by organic vapors is substantially mitigated by the methane control system, no further evaluation of the vapor intrusion pathway is needed.

PROPOSED SCOPE OF WORK

The scope of work includes the following activities: (1) field preparation activities; (2) collection and analysis of groundwater samples from Site monitoring wells; (3) conducting

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[6] LFR Levine-Fricke, 2004. *Phase II Methane in Soil-Gas Investigation, Atrium Property, 1650 65th Street, Emeryville, California.* January 23.
PES Environmental, Inc. (PES), 2004. *Summary Report of Methane Characterization Study, The Atrium at Emery Bay Plaza, 1650 65th Street, Emeryville, California.* March 2.

[7] PES Environmental, Inc. (PES), 2005. *Completion Report, Construction of Methane Collection, Control, and Monitoring System, The Atrium at Emery Bay Plaza, 1650 65th Street, Emeryville, California.* April 14.

a preferential pathway study; and (4) technical report preparation and submittal. These tasks are described below.

Field Preparation Activities

Prior to beginning any new on-Site activities, PES will update the site-specific Health & Safety Plan to address the proposed work activities in accordance with applicable Occupational Safety and Health Administration requirements. All work activities will be conducted in accordance with the Site-specific Health & Safety Plan.

Groundwater Sampling and Analysis

The monitoring wells were last sampled in 2001. Due to their location in exterior parking areas of the Site and the resultant potential for vertical shifts since they were originally surveyed, PES will retain the services of a California State licensed surveyor to survey all the groundwater monitoring wells for the following information: (1) horizontal coordinates (i.e., northing, easting, latitude, and longitude); and (2) top of lid and top of PVC well casing elevations.

To assess groundwater in the vicinity of the former UST, samples will be collected from wells located upgradient and downgradient of the former tank (i.e., wells MW-2, MW-4, MW-6, MW-8, and EW-1), as shown on Plate 2[8]. A subsurface electromagnetic survey will be performed to attempt to locate wells MW-3, MW-6, and MW-7, which PES understands have been potentially covered with asphalt since they were last sampled. To obtain representative samples (as the wells were last sampled in 2001), wells MW-2, MW-4, MW-6, MW-8, and EW-1 will be redeveloped prior to sampling. Prior to commencing development, the depth-to-water in each well will be measured and the volume of water in the wells will be calculated. Then the screened interval in each well will be surged and purged successively until a minimum of ten casing volumes of water have been removed from the well. Additional casing volumes may be removed to further reduce turbidity levels in the well water.

After development and a minimum wait period of three days, depth-to-water will be measured in the wells. Based on the depth-to-water results, the water volume in the well will be calculated. The wells will then be purged of at least three casing volumes of water using a new disposable bailer, decontaminated reusable bailer, or sampling pump with new, disposable tubing. Temperature, conductivity and pH readings will be collected from the purged water at regular intervals until these readings stabilize to within 10 percent (%) of each other in three consecutive readings.

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[8] Other wells which may be in place at the Site are either cross-gradient or upgradient from the source area. PES will collect survey data and water levels from these Site wells, but will not re-sample or redevelop those wells.

After purging, the wells will be allowed to recharge to at least 80% of the pre-purging water level, or for at least two hours. When each well has recharged based upon these guidelines, a groundwater sample will be collected using a disposable bailer, and decanted into appropriate sample containers with a bottom-emptying device. The water samples will be labeled for identification and immediately placed in a chilled, thermally-insulated cooler containing ice or blue ice, and delivered to the project laboratory under chain-of-custody protocol. Samples will be analyzed under a standard one-week turnaround time. The groundwater samples will be analyzed for the following:

- TPH quantified as gasoline (TPHg) using EPA Test Method 8015 modified;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Test Method 8260B; and
- Fuel additives methyl tertiary-butyl ether (MTBE), ethyl tertiary-butyl ether (ETBE), di-isopropyl ether (DIPE), tert-butyl alcohol (TBA), ethylene dibromide (EDB), 1,2-dichloroethane (1,2-DCA), and tertiary-amyl methyl ether (TAME) using U.S. EPA Test Method 8260B.

Purge water and decontamination fluids generated during well redevelopment and sampling will be placed in labeled 55-gallon drums that will be sealed/locked and stored on the Site pending characterization of these wastes. Management of these investigation derived wastes (IDW) will occur at an appropriate facility based on the waste characterization analytical results and in accordance with applicable local, state and federal requirements.

Preferential Pathway Study

As described in the ACEH letter, the purpose of the preferential pathway study will be to locate potential migration pathways and conduits and determine the probability of dissolved contaminant plume(s) encountering preferential pathways and conduits that could spread contamination. The study will consist of: (1) an underground utility survey; and (2) a well survey.

Information for the underground utility survey will be obtained from local agencies and utility providers. Underground Service Alert of Northern California (USA North) will be contacted to document private utility locations. Information on well locations will be obtained from the

Alameda County Department of Public Works, the California Department of Water Resources (DWR), and Environmental Data Resources, Inc. (EDR).

Reporting and Schedule

A description of the methods, procedures, and results of the sampling activities, as well as results of the preferential pathway study, will be presented in a report submitted within eight weeks after receiving approval of this Work Plan from ACEH. Additionally, groundwater sampling results will be submitted electronically to the State Water Resources Control Board Geotracker database, and an electronic copy of the finalized report will be uploaded to Geotracker and ACEH file-transfer protocol (ftp) websites.

Closing

We trust that this is the information you require at this time. Please call either of the undersigned if you have any questions.

Yours very truly,

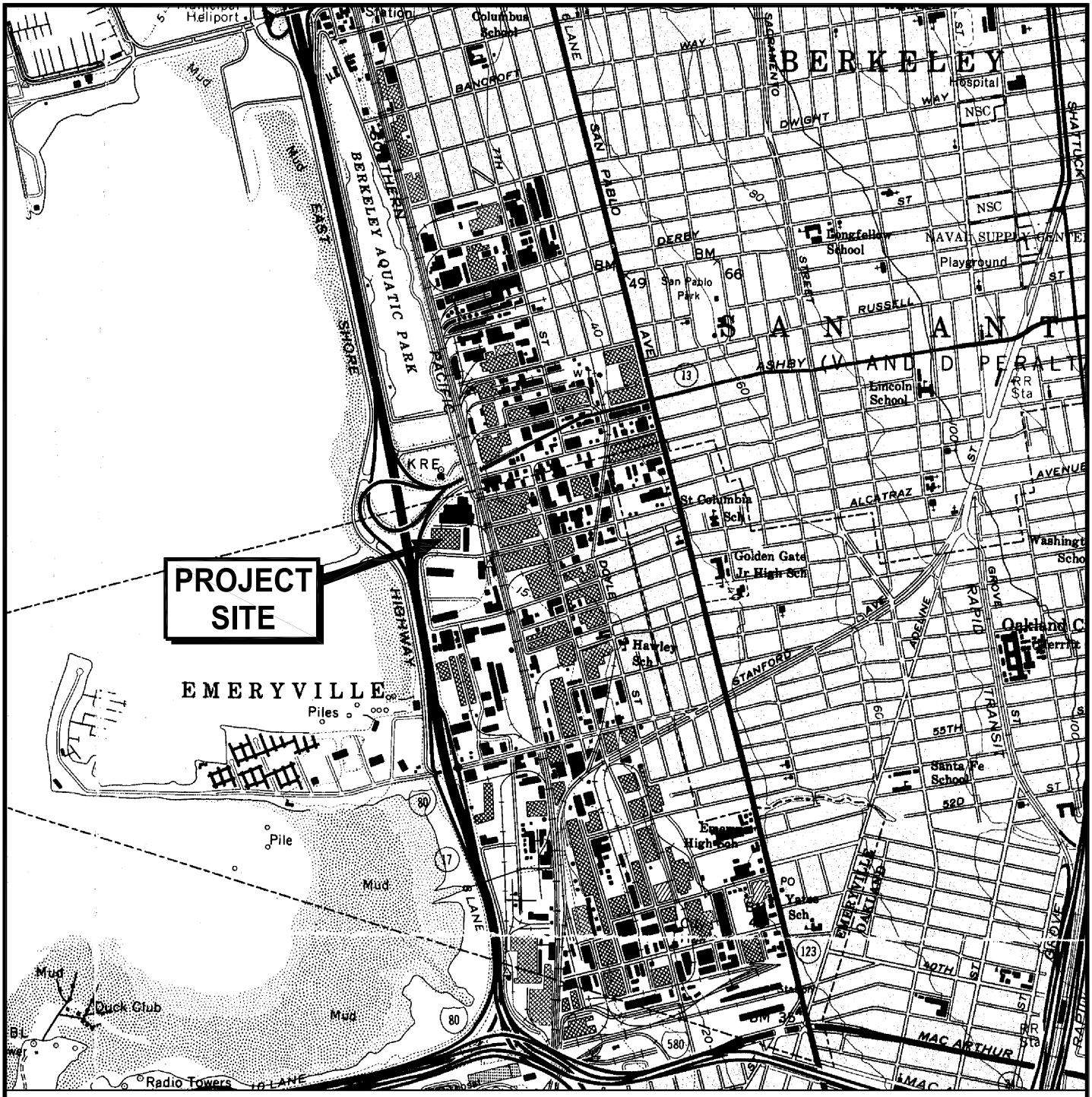
PES ENVIRONMENTAL, INC.

Chris Baldassari
Senior Geologist

Robert S. Creps, P.E.
Principal Engineer

Attachments: Plate 1 – Site Location Map
Plate 2 – Site Plan and Vicinity Map

cc: Julie A. Treinen, Griffin Capital Corporation



U.S.G.S. Topo Map - Oakland West, California, 7.5-minute quadrangle. Map version1997; current as of 1993

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SIte LocatIon Map
1650 65th Street
Emeryville, California

PLATE
1

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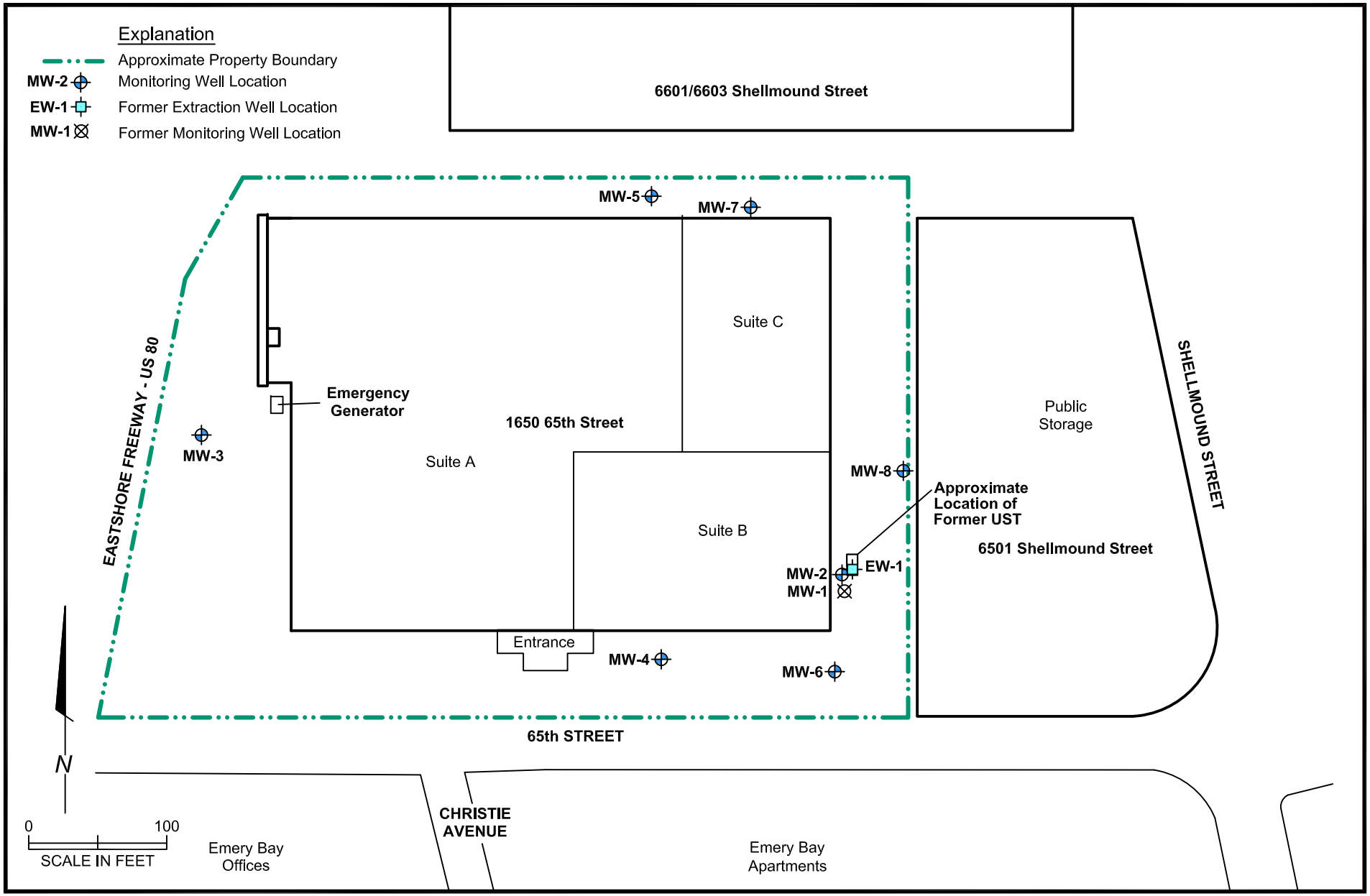
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



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Site Plan and Vicinity Map
1650 65th Street
Emeryville, California

PLATE
2

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