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ENVIRONMENTAL & ENGINEERING SERVICES

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September 29, 2009

Mr. Paresh Khatri
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

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1:41 pm, Oct 01, 2009

Alameda County
Environmental Health

Feasibility Study / Corrective Action Plan Addendum

6211 San Pablo Avenue
Oakland, California
AEI Project # 280346
Fuel Leak Case RO0000127

Dear Mr. Khatri:

The following Feasibility Study/Corrective Action Plan (FS/CAP) Addendum has been prepared on behalf of Mr. Pritpaul Sappal (client), and addresses the general and technical comments by the Alameda County Health Care Services Agency (ACHCSA) in the letter date August 13, 2009. The ACHCSA letter was in response to AEI's FS/CAP dated June 29, 2009. The ACHCSA had one general comment and three technical comments regarding the June 29, 2009 report. Each of the comments are rephrased below (indicated by italics) and followed by AEI's response.

General Comment:

The ACHCSA is not convinced that the above-mentioned remedial approach will be sufficient to remediate the off-site groundwater contaminant plume. Since at this stage, only pilot testing is proposed, ACHCSA is not opposed to the proposed scope of work.

AEI understands that the proposed Bioventing pilot test does little to address offsite groundwater contamination, and AEI is aware of the need to further evaluate and likely remediate offsite groundwater contamination. However, AEI would like to stress that the purpose of the proposed ozone sparging pilot study activities is to determine the site specific effective radius of influence for ozone sparging. Should radius of influence data support the implementation of an offsite ozone sparging system, this approach is a direct and aggressive option for remediating offsite groundwater contamination. The implementability of this option is discussed under technical comment number 2.

Technical Comments:

1) Please clarify which wells are selected as injection wells and discuss applicability as remediation wells (i.e. discuss the well construction details in relation to the target clean up zone). Also, please indicate a revised site figure that identifies the proposed injection wells and locations of the soil vapor probes.

Injection wells, as proposed in AEI's FS/CAP, have been proposed for the limited pilot study activities to evaluate the potential of both the ozone sparging (based on observed radius of influence data) and Bioventing as remedial options. Initially, AEI plans to install 3 soil gas monitoring probes (SG-4 to SG-6) as described in the FS/CAP report. The primary purpose of SG-4 is to evaluate soil vapor concentrations to the west of the current station building. The primary purpose for SG-5 and SG-6 is to obtain data during the Bioventing pilot study activities. AEI initially plans to use vapor extraction wells VE-2 and VE-3 for the Bioventing pilot study. Based on the location of these wells and the proposed placement of SG-4 and SG-5, AEI will be able to evaluate soil vapor data at 5, 10, 15, and 20 horizontal foot intervals (depending on which vapor extraction well is being used for air injection). Each of these vapor extraction wells are screened from approximately 3.5 feet bgs to 13.5 feet bgs, therefore a portion of the screen is located in the vadose zone. The soil vapor monitoring probes will be installed between 3.5 and 5 feet bgs so that they are installed within the same zone as the screened interval of the vapor extraction wells.

Air sparge well AS-3 has been chosen as the primary injection well, with AS-2 as the secondary injection well, in order to complete ozone sparge radius of influence testing. This will allow AEI to utilize monitoring wells MW-1R, MW-3, and MW-6 to collect data (at approximately 5, 15, 20, 40, and 45 horizontal feet) during the radius of influence testing. The air sparge wells are screened within the saturated zone at an interval of 21 to 26 feet bgs. Sparging at this depth interval should give AEI a relatively representative data set of what to expect should ozone sparge wells be installed.

Please refer to figure 3 for the locations of the proposed soil gas probes and proposed injection wells to be utilized during pilot testing activities. It should be noted that during testing, although not planned, if data warrants, additional wells may be used for the injection activities and additional soil gas probes could be installed.

2) AEI has proposed bio-venting and in-situ ozone chemical oxidation to remediate the soil and groundwater contamination on-site. ACHCSA is concerned that it may not be readily implementable off-site on adjacent properties and streets. Another concern is also the potential for vapor migration along subsurface utility corridors or other subsurface preferential pathways as a result of ozone injection, which may adversely affect off-site properties.

AEI can appreciate the ACHCSA concern over the implementability of an offsite ozone sparge system. However, AEI believes that it would be possible to install an offsite ozone sparge

system as a “barrier” to prevent continuing migration offsite and gradually clean up offsite groundwater. Conceptually, the system would consist of multiple points onsite (where access is readily available), followed by a row of points down the northern side of 62nd street (where a utility line is not currently present). If necessary, additional points could move into Marshall street. The system would be designed so that only one common trench was necessary for the sparge point conveyance piping, which would be located within the public right of way. Under this design, offsite access permits from property owners would be avoided, and one encroachment permit with the City of Oakland would be necessary. AEI has already demonstrated it can obtain an encroachment permit, regardless of historical problems associated with encroachment permit acquisition.

Specific details of how the ozone system would be installed are pre-mature at this time. The purpose of the proposed pilot test and additional monitoring well installation activities is to determine the extent of the hydrocarbon contamination through regular monitoring events, as well as the expected radius of influence that would be achieved during ozone sparging. Details regarding the previous two questions are essential to determine if ozone sparging is a practical approach for the offsite groundwater contamination.

In regards to the issue of vapor migration as a result of ozone sparging, prior to commencing ozone sparge system activities, AEI would install several soil gas probes, as deemed necessary, to monitor vapor concentrations during remedial activities at and near the property. Soil gas probes could also be easily installed within a subsurface utility corridor for utilities of concern. In addition, AEI plans to run the ozone sparge system using low flow rates (approximately 1 to 2 cubic feet per minute (cfm)). Running the system using a low flow program limits the likelihood of elevated volatilization rates and vapor movement.

3) Please initiate semi-annual groundwater monitoring sampling conducted in the first and third quarters of the year. Should you have an alternate proposal, please submit a groundwater monitoring plan for review.

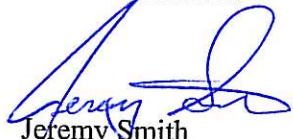
AEI concurs with the ACHCSA that the groundwater sampling should be reduced to semi-annually for the time being and has revised the schedule to complete groundwater sampling and monitoring activities during the 1st and 3rd quarter each year. AEI recently completed the second semester 2009 sampling event on August 13, 2009, and the monitoring report was issued on September 22, 2009. The 1st semester 2010 sampling event is scheduled for the 1st quarter 2010 (February 2010). Once the offsite wells are installed, a revised quarterly or semi-annual sampling program will likely be proposed.

ESTIMATED SCHEDULE

Upon approval from the ACHCSA, AEI will apply for all necessary permits to complete the proposed field work for the offsite well installation, soil gas probes, and pilot study activities. It is expected that field work will begin approximately 4 to 6 weeks following approval from the ACHCSA, pending permit approval. Field work is expected to take approximately 1 to 2 weeks. A report documenting the well installation and pilot test activities will be completed within 4 to 6 weeks following the receipt of all necessary data.

Please contact the undersigned at (925) 746-6000 if you have any questions or need any additional information.

Sincerely,
AEI Consultants


Jeremy Smith
Senior Project Manager



Peter McIntyre, PG, REA
Senior Project Geologist



Figure 1 – Extended Site Plan

Figure 2 – Site Plan

Figure 3 – Proposed Vapor Probes

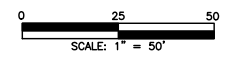
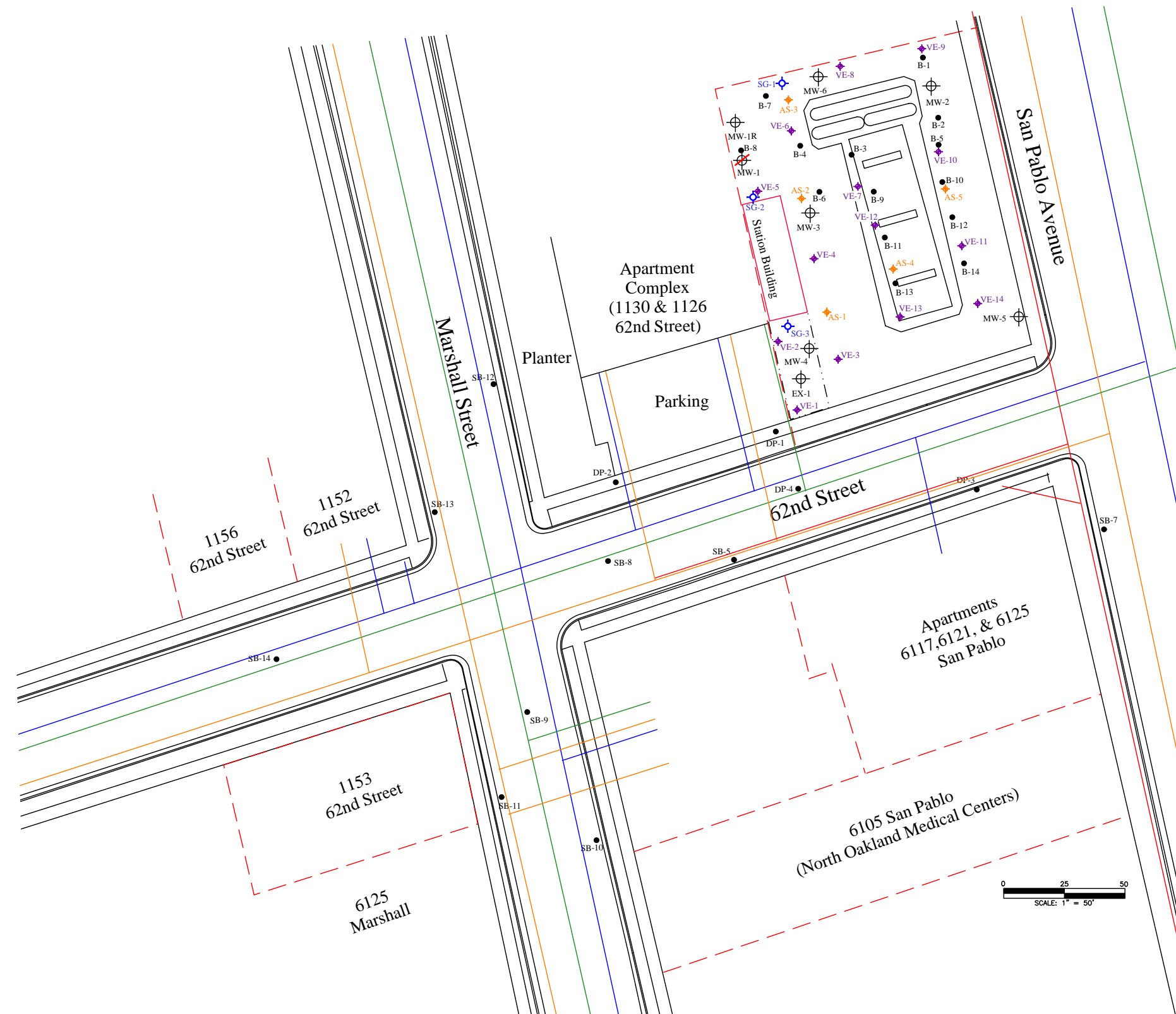
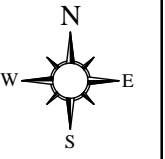
Figure 4 – Proposed Monitoring Well Locations

Distribution:

Mr. Pritpaul Sappal, 2718 Washburn Court, Vallejo, CA 94591

Mr. Paresh Khatri, ACHCSA, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502 (electronic upload)

Mr. Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612



LEGEND

- MONITORING WELL
- SOIL BORING
- ⊗ ABANDONED WELL
- ⊕ NESTED VAPOR PROBE
- ⊕ VAPOR EXTRACTION WELL
- ⊕ AIR SPARGE WELL
- APPROXIMATE PROPERTY BOUNDARY
- WATER LINE
- NATURAL GAS LINE
- ELECTRIC LINE
- SEWER LINE

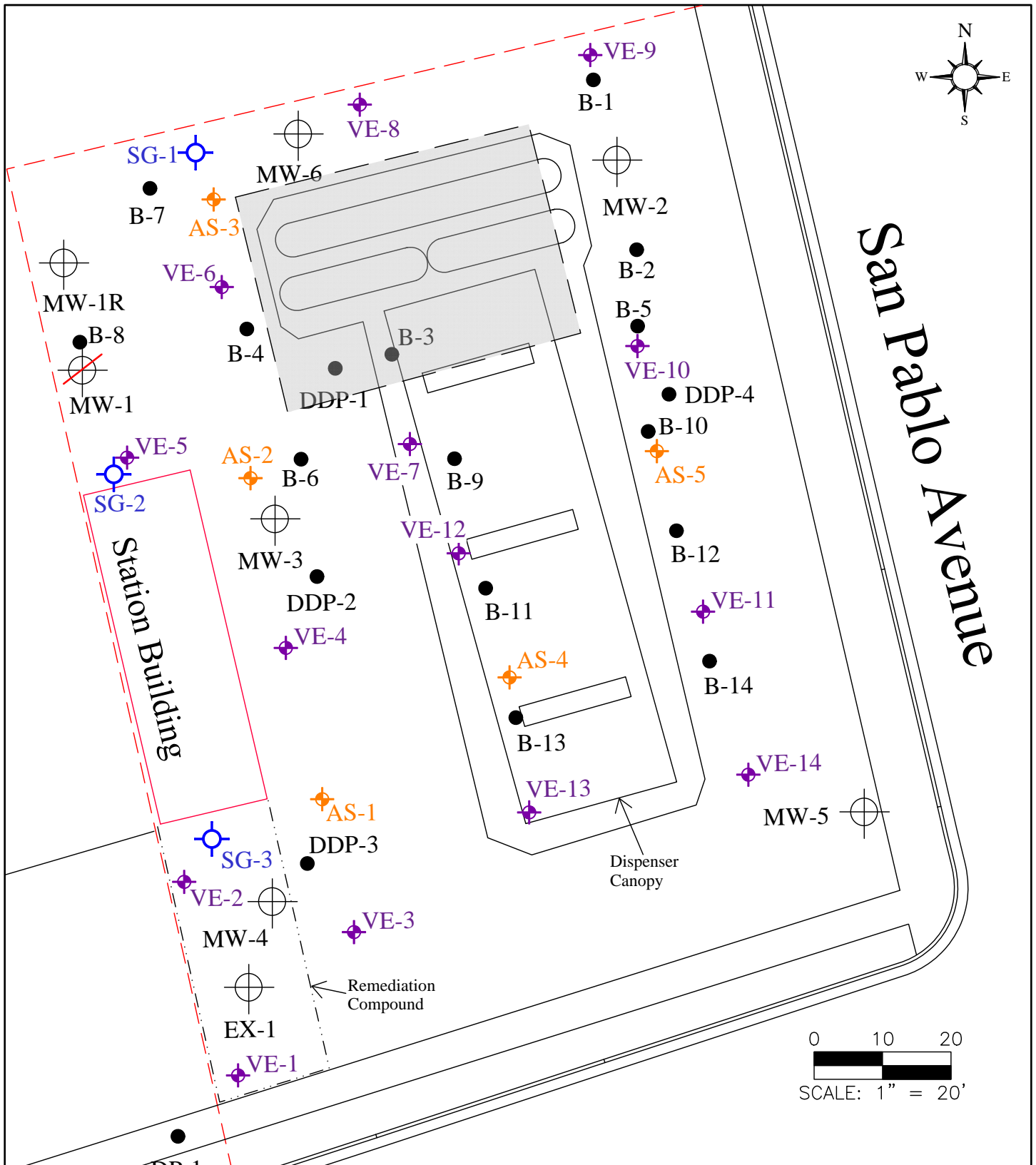
DRAFTED BY JAS 9/10/08
 REVISED BY JAS 9/26/08

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EXTENDED SITE PLAN

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 1
 PROJECT NO. 280346



LEGEND

- ⊕ MONITORING WELL
- SOIL BORING
- ⊕/ MONITORING WELL WITH RED SLASH (ABANDONED WELL)
- ⊕ WITH BLUE RING (NESTED VAPOR PROBE)
- ⊕ WITH PURPLE RING (VAPOR EXTRACTION WELL)
- ⊕ WITH ORANGE RING (AIR SPARGE WELL)
- ▭ UNDERGROUND STORAGE TANK
- ▭ DISPENSER ISLAND
- ▭ FORMER UST EXCAVATION

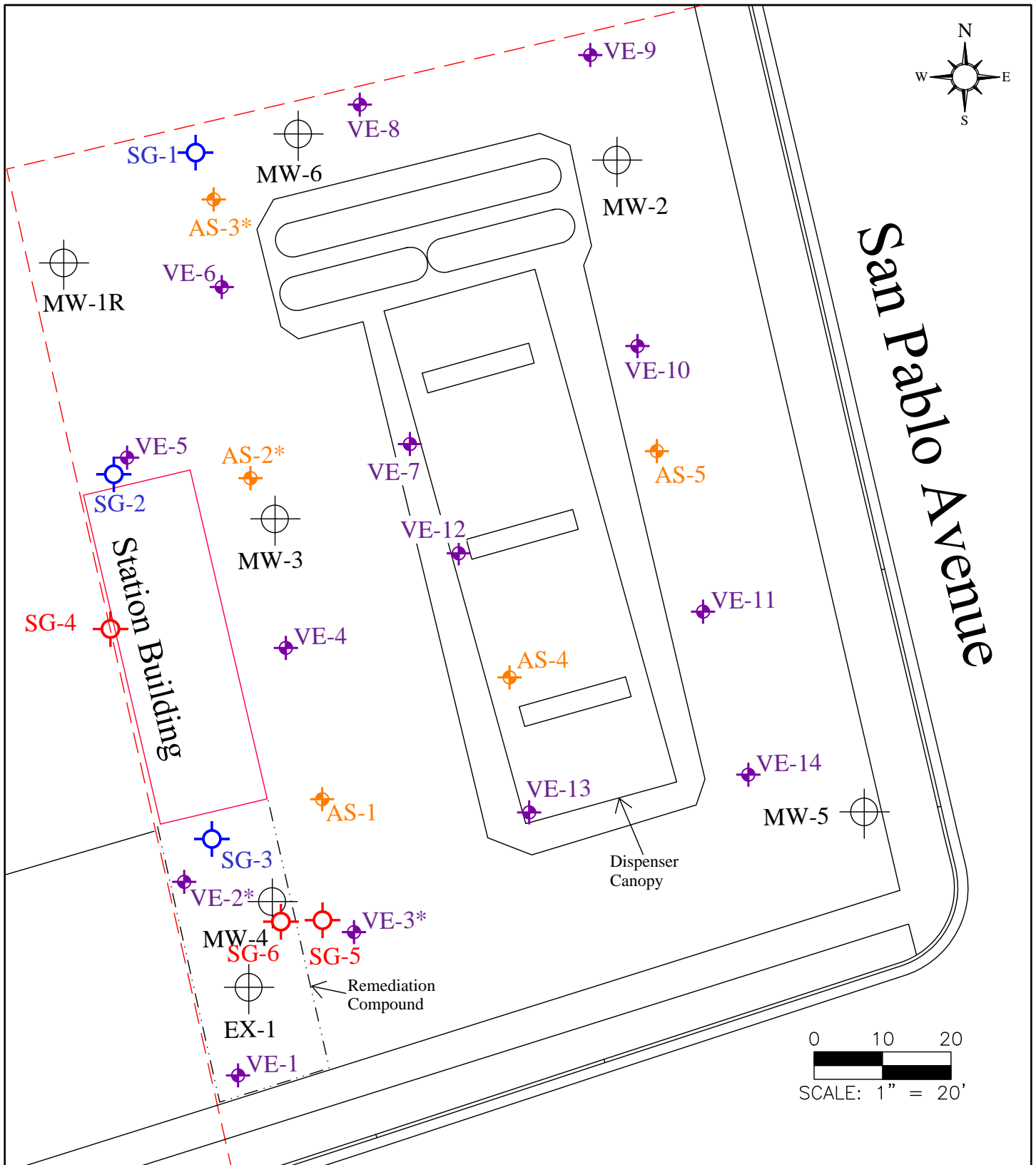
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SITE PLAN

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 2
 PROJECT NO. 280346



LEGEND

- ⊕ MONITORING WELL
- ⊕ NESTED VAPOR PROBE
- ⊕ PROPOSED VAPOR PROBE
- ⊕ AIR SPARGE WELL
- ⊕ VAPOR EXTRACTION WELL
- * = To be used for Injection Pilot Study activities

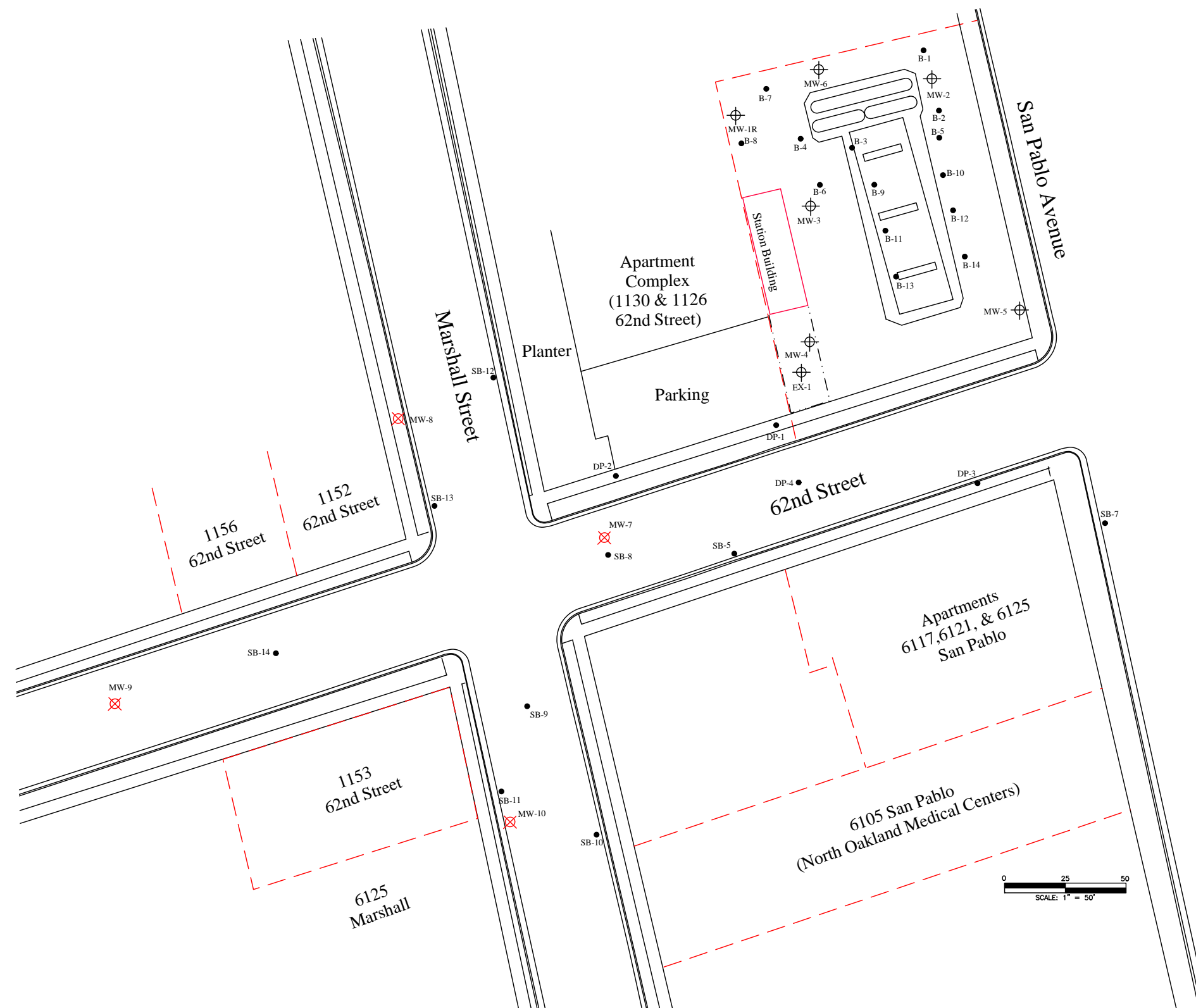
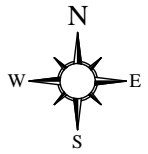
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PROPOSED VAPOR PROBES

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 3
 PROJECT NO. 280346



LEGEND

- MONITORING WELL
- SOIL BORING
- ⊗ PROPOSED MONITORING WELL

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**PROPOSED MONITORING
WELL LOCATIONS**

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FIGURE 4
PROJECT NO. 280346