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By Alameda County Environmental Health at 8:50 am, May 20, 2013



May 14, 2012

Mr. Jerry Wickham
Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Soil and Groundwater Site Management Plan at the Mission Valley Rock and Asphalt Plant Located at 7999 Athenour Way in Sunol, California Alameda County Case No. RO0000207 and GeoTracker Global ID T0600102092

Dear Mr. Wickham:

The attached Soil and Groundwater Site Management Plan was prepared by ARCADIS U.S., Inc. (ARCADIS) on behalf of Lehigh Hanson West Region (“Hanson”) for the asphalt plant area of the Hanson Aggregates Former Mission Valley Rock Facility, located at 7999 Athenour Way, Sunol, California (“the Site”). The site management plan was prepared in response to the Alameda County Environmental Health Services (ACEH) letter to Hanson dated March 13, 2013 and presents the management processes for the residual petroleum-affected soil and groundwater.

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

If you have any questions or comments concerning this report, please call Tina Lau, Environmental Manager, at (925) 244-6584 or Ron Goloubow of ARCADIS at (510) 596-9550.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. J. Roth'.

Mike Roth
Vice President/General Manager
Lehigh Hanson West Region

Attachment

Lehigh Hanson West Region

Soil and Groundwater Site Management Plan

Hanson Aggregates Mission Valley Rock
Facility, 7999 Athenour Way
Sunol, Alameda County, California
(SLIC Case #RO0000207 and
GeoTracker ID T0600102092)

May 14, 2013

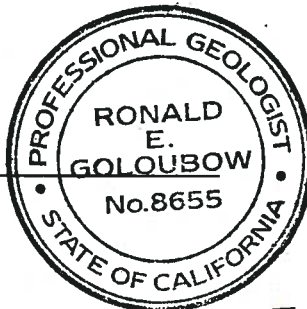


Caitlin Bell

Caitlin Bell, P.E.
Staff Environmental Engineer

R. Goloubow

Ron Goloubow, P.G.
Principal Geologist
California Professional Geologist (8655)



Expires Nov. 30, 2013

**Soil and Groundwater Site
Management Plan**

Mission Valley Rock and Asphalt
Plant, 7999 Athenour Way, Sunol,
California

Prepared for:
Lehigh Hanson West Region
12667 Alcosta Boulevard, Suite 400
San Ramon, California 94583

Prepared by:
ARCADIS U.S., Inc.
2000 Powell Street, 7th Floor
Emeryville, California 94608
Tel 510.652.4500
Fax 510.652.4906
www.arcadis-us.com

Our Ref.:
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Date:
May 14, 2013

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1. Introduction

On behalf of Lehigh Hanson West Region (Hanson), ARCADIS U.S., Inc. (ARCADIS) is submitting this Soil and Groundwater Site Management Plan (SMP) in response to comments received from Alameda County Environmental Health Services (ACEH) in a letter dated March 13, 2013 regarding the report entitled "Investigation to Assess Non-Aqueous Phase Liquid", dated February 1, 2013 (ARCADIS 2013), that was prepared for the Mission Valley Rock and Asphalt Plant located at 7999 Athenour Way in Sunol, California (Figure 1). The portion of the facility that is subject to the SMP (the Site) is illustrated on Figure 2. This report includes the following information, per the request of the ACEH in the letter dated March 13, 2013:

1. Site background
2. Summary of remedial actions and current environmental conditions
3. Summary of human health risks
4. Institutional controls
5. Specific controls on the use of groundwater at the Site
6. Requirement for ACEH notification and approval of subsurface activities that will encounter residual contamination
7. Requirement for a health and safety plan for all subsurface work
8. Protocols for excavation, grading, and management of excavated materials
9. Periodic inspection
10. Contingency plan for discovery of unknown features of environmental concern

The objective of this SMP is to provide a mechanism for continued protection of the health and safety of future Site workers and visitors during and following site construction and/or mining activities that might occur within the general area (Figure 2) where past unauthorized releases of liquid fuel hydrocarbons (gasoline and diesel) occurred, were investigated, and were remediated; residual fuel hydrocarbons in soil and groundwater.

1.1. Soil and Groundwater Site Management Plan Organization

The remainder of this SMP is organized as follows:

- Section 2 provides a summary of the Site background, geology, hydrogeology, environmental conditions, and historical investigations and remedial actions.
- Section 3 provides a review of the human health risks at the Site.
- Section 4 provides the summary of the institutional controls being employed at the Site.
- Section 5 is the management plan for soil and groundwater including notification requirements, health and safety considerations, groundwater use controls, guidance for soil management, inspection requirements, contingency plan for discovery of unknown features of environmental concern, record keeping requirements, and availability of the SMP.
- Section 6 provides cited references.

2. Site Background

The Site is located within the 588-acre Mission Valley Rock Facility previously owned by Mission Valley Rock (MVR) Company since the 1950s. Hanson purchased the property in early 2005 but retained the business and legal entity of MVR. The facility is currently operated as a sand and gravel quarry with an asphalt manufacturing facility and a ready mix concrete plant. Additionally, various areas throughout the property are leased for industrial, agricultural, and storage purposes.

2.1. Geology and Hydrogeology

Sediments beneath the Site consist of approximately 5 to 20 feet of relatively low-permeability silts, clays, and clayey gravels overlying approximately 20 to 30 feet of relatively permeable fine- to coarse-grained gravels, that are considered to be the predominant water-bearing stratum. The Livermore Formation encountered at approximately 30 to 40 feet below ground surface (bgs) underlies these shallower water-bearing strata and appears to be somewhat less permeable than the overlying strata due to increased fines content.

The depth to groundwater beneath the Site typically ranges from 2 to 6 feet bgs. Groundwater flow conditions in the vicinity of the Site are influenced by low-permeability features, such as the former gravel pits filled with relatively less permeable, finer-grained sediment, and by groundwater removal from adjacent former

mining pits. The local flow direction generally has been to the south, southeast, and east, as measured in site groundwater monitoring wells since approximately 1998 (Figures 3 through 5). Historically, the groundwater table likely fluctuated significantly as nearby aggregate mining pits were advanced, dewatered, and then filled with water and silt.

2.2. Environmental Conditions and Chemicals of Concern

The asphalt plant has been in operation since approximately 1980. Operation from 1980 to 1996 included two 10,000-gallon diesel fuel underground storage tanks (USTs) and one 2,000-gallon gasoline UST used to fuel company vehicles (Figure 2), all of which were removed in June 1996.

A fourth UST (10,000-gallon diesel; designated “D-4”) was located in the southeastern portion of the Site and apparently was partially buried (Figure 2). UST D-4 reportedly was abandoned and removed and is not believed to have released significant quantities of petroleum hydrocarbons to the environment. A fifth UST (diesel, approximately 8,000 to 10,000 gallons) may have been located in the southern portion of the Site, approximately beneath the two existing 25,000-gallon asphalt cement aboveground storage tanks (ASTs). Per an unverified account of a former Site worker, this fifth UST was used for a few years before being abandoned in place (likely filled with concrete) during the 1970s, before the asphalt plant was built. No other USTs or ASTs are reported to have existed at the Site since approximately 1970. The chemicals of concern are those related to diesel and gasoline stored in the area shown in Figure 2. The existing 25,000-gallon ASTs contain asphalt cement and are not considered a potential source of the diesel-range organic compounds that has been detected in groundwater samples collected the Site (Figure 2).

2.3. Investigations and Remedial Activities

Remedial actions were initiated at the Site when the two 10,000-gallon diesel fuel USTs and one 2,000-gallon gasoline UST were removed in June 1996 by Tank Protect Engineering (1997). Impacted soil and groundwater were found during the UST removal. The USTs were found to be in good condition with no holes evident, although a ¼-inch-diameter hole was observed in one of the fuel lines. Several subsurface investigations have been completed by past consultants from 1996 through the present in the vicinity of the asphalt plant (Tank Protect Engineering 1997).

Several investigations have been completed at the Site since 1996. The scope of these investigations included the analysis of soil and grab groundwater samples collected

during the advancement of approximately 18 soil borings, and the installation and monitoring of 27 groundwater monitoring wells (currently there are 26 groundwater monitoring wells; former well MW-2 was abandoned in 2005). Groundwater monitoring wells MW-1 through MW-8 were installed as single, double, or triple completion wells where one or more wells are completed in a single boring. Well clusters MW-9 through MW-12 were installed during April and May 2006 as groups of single completion wells with well screens at three different depths. Groundwater monitoring wells at the Site are designated based on their well screen depths as shallow (“S”, screened approximately from 5 to 10 feet bgs), deep (“D”, screened approximately between 15 and 25 feet bgs), and Livermore Formation (“LF”, screened approximately from 35 to 40 feet bgs and believed to be approximately within the top 5 to 10 feet of the Livermore Formation). A summary of the construction details for each groundwater monitoring well installed, including latitudinal and longitudinal location of each well or well cluster, is included for ease of future identification of the areas of residual soil and groundwater impacts (Table 1).

The soil data collected in the vicinity of the asphalt plant indicate the presence of low concentrations (less than 1,400 milligrams per kilogram [mg/kg]) of petroleum-related constituents, specifically diesel-range total petroleum hydrocarbons (TPHd), near the former USTs (Figure 6 and Appendix A). Residual soil impacts are located in similar areas to residual groundwater impacts, as discussed below.

2.3.1. Remedial Action

Based on the results of previous investigations and groundwater monitoring conducted at the Site, ACEH concurred with LFR Inc. (LFR) in an April 27, 2007 letter that no additional characterization investigations are necessary for this Site. ACEH requested that a scope of work be submitted to implement pilot testing of the LFR proposed remedial alternative for affected groundwater in the vicinity of well cluster MW-9 (ACEH 2007a). LFR submitted a work plan on August 3, 2007 describing the scope of work to perform a pilot study to test the effectiveness of injecting air to enhance the natural biodegradation in the vicinity of well cluster MW-9 (LFR 2007b). The pilot test work plan was approved by ACEH on August 30, 2007 (ACEH 2007b), and LFR conducted the pilot test in January and February 2008.

As described in the Air Sparge Pilot Test Completion Report (LFR 2008a), results of the pilot test indicated that effective delivery of oxygen into groundwater to approximately 45 feet bgs (into the “S”, “D,” and “LF” groundwater depth intervals) can be achieved using a conventional air injection approach. Increases in microbial populations, oxidation-reduction potential (ORP), and dissolved oxygen (DO) concentrations, and decreases in total petroleum hydrocarbons (TPH) and TPH-related

compound concentrations observed during and/or after the pilot test indicated that oxygen injection created conditions that enhanced biodegradation in the source area.

Based on the successful results of the pilot test, LFR submitted a work plan on October 3, 2008 (LFR 2008b) proposing the adoption of air injection as the remedial approach in the vicinity of monitoring well MW-9 and adoption of a monitored natural attenuation (MNA) approach for the remainder of affected groundwater. MNA was proposed as an effective remedial approach because historical groundwater data indicated attenuation mechanisms were effective at stabilizing the migration of the affected groundwater and resulted in decreasing trends in the majority of the plume. These remedial approaches were approved by ACEH in a letter dated October 24, 2008 (ACEH 2008).

A full-scale air injection system was installed in March 2009. The air injection system consisted of an air compressor and associated piping to inject compressed air through a series of regulators, filters, valves, flow meters, hoses, and eventually through the screened intervals of injection wells OXY-1D and OXY-1LF. These two wells were constructed with wells screens located somewhat deeper than well screens for wells MW-9D and MW-9LF, respectively. The air injection system was started on April 6, 2009 and operated until July 15, 2010.

2.3.1. Groundwater Monitoring

As requested by ACEH, groundwater monitoring of select wells located in the vicinity of the air injection system was conducted on a quarterly basis to monitor the performance of the air injection system. Semi-annual groundwater monitoring of all Site wells was conducted until September 2010. Based on the results of the periodic groundwater monitoring it was concluded that the location of residual petroleum constituents in groundwater within the various vertical portions of the aquifer is generally located north of the asphalt plant, in the vicinity of the cluster of former gasoline and diesel USTs (Figures 7 through 9).

Light non-aqueous phase liquid (LNAPL) was measured in groundwater monitoring wells MW-2, MW-2S, MW-2D, MW-3, MW-9D, and MW-11D (ARCADIS 2011; ARCADIS 2012; ARCADIS 2013). LNAPL thicknesses in those wells ranged from a non-measurable sheen (less than 0.01 foot) to approximately 4 feet (well MW-2 in January 1999). However, data collected through 2010 indicated LNAPL thicknesses decreased significantly over time, and an appreciable measurable amount of LNAPL had not been measured in any wells at the Site between 2002 and 2010 (ARCADIS 2011).

In response to comments provided by ACEH in a June 21, 2012 letter (and as part of the regulatory case closure process) a water level elevation survey was conducted at the Site in May 2012 (ARCADIS 2012). During that water level elevation survey, approximately 0.61-foot of LNAPL was measured in well MW-11D. In addition, during two previous water level measurement events on December 24, 2010 and September 27, 2010 a "petroleum hydrocarbon-like liquid," was observed on the water level probe; however, LNAPL thickness was not measured using an interface probe (ARCADIS 2011). As a result of the measurement of the LNAPL at well MW-11D, in a letter dated June 21, 2012 the ACEH requested an additional investigation to assess the vertical extent of the LNAPL and the properties of the LNAPL.

2.3.2.LNAPL Investigation

From December 2012 through January 2013, ARCADIS conducted a series of investigations to determine the characteristics of the LNAPL in MW-11D, including a bail down test to determine the transmissivity of the LNAPL, characterization of a sample of the LNAPL, and a cone penetrometer test/laser induced fluorescence (CPT/LIF) investigation to determine the vertical extent of the LNAPL in the vicinity of monitoring well MW-11D (ARCADIS 2013). The results of these activities suggested the nature of the LNAPL is a highly-weathered diesel with limited transmissivity (i.e., not mobile). Based on the high degree of microbial degradation identified within the LNAPL, it was concluded that the original release of LNAPL occurred in the distant past. The anticipated source of the LNAPL is the former USTs; there is no indication that there is an ongoing source of LNAPL at the Site. The mass of residual LNAPL remaining in the subsurface is expected to decrease with time and remain within the area it currently occupies; the residual LNAPL within the subsurface is likely immobile based on its age and the results of the bail down test. Therefore, it is not anticipated that the LNAPL will move laterally within the subsurface to impact other areas of the Site.

The results of the LIF investigation indicate the vertical extent of potentially petroleum-impacted soil within this area is approximately 18 feet thick. The screen interval of monitoring well MW-11D lies within this vertical interval; therefore, it is not anticipated that LNAPL within MW-11D will move vertically to impact a new area. The integrity of monitoring well MW-11D remains intact so further migration of LNAPL through cracks or other imperfections in the well construction of MW-11D is not anticipated.

3. Summary of Human Health Risks

The following is a summary of the potential human health risks associated with the residual petroleum concentrations in the vadose zone soil, soil gas, and groundwater at the Site. There are several potential exposure pathways (LFR 2007a). These include ingestion, inhalation, or dermal contact with soil; inhalation of ambient air; and ingestion, inhalation, or dermal contact with groundwater. For a potential exposure pathway to be considered a complete exposure pathway there must be a source of chemical concentrations above thresholds for risk to human health, a media through which contamination moves, and a receptor that comes into contact with the media.

The former USTs and historical operations have resulted in residual concentrations of petroleum constituents in three media: soil, soil gas, and groundwater. Potential receptors include Site workers and Site visitors, including contractors. Based on current routine Site activities, there are no completed pathways for a Site worker or visitor in the area outlined in Figure 2 to contact with any of the media identified above. For human receptors involved in construction activities involving soil removal, there are no complete pathways for contaminated groundwater and soil gas but potentially completed pathways for contaminated soil. Section 5 of this SMP identifies management protocols to minimize potential exposure.

3.1. Soil

Petroleum-affected vadose zone soil is generally located in the vicinity of the former USTs and asphalt plant (Figure 6). During historical investigation activities, petroleum-related constituents were detected in soil samples collected within the vadose zone (taken as the top 5 feet of soil) at concentrations ranging from 0.0043 mg/kg benzene at the soil boring associated with monitoring wells MW-5S and MW-5D to 1,400 mg/kg TPHd at soil boring TB-6. These values represent the highest concentrations of petroleum constituents detected within the top 5 feet of soil. Many of these detected values were above the applicable 2013 Tier 1 Environmental Screening Levels (ESLs) put forth by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for commercial land use soils that are less than 3 meters bgs in an area where the groundwater is considered a current or potential drinking water source.

Potential exposure pathways for Site workers and Site visitors or contractors to shallow soil contamination include ingestion, inhalation, or dermal contact of affected media. Based on routine Site operations and the institutional controls described in Section 4 below, these potential exposure pathways are not anticipated to be completed. Section

4 and Section 5 of this SMP detail the actions to be taken to eliminate human exposure to petroleum-related constituents in soil while performing routine and infrequent subsurface activities at the Site.

3.2. Soil Gas

Based on the analytical results for soil gas samples collected between February 2008 and December 2010 (LFR 2010), historical concentrations of petroleum constituents in soil gas ranged from 6 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of toluene in SG-3 to 550,000 $\mu\text{g}/\text{m}^3$ of gasoline-range total petroleum hydrocarbons (TPHg) in samples collected from soil gas point SG-4. These concentrations were detected during the air injection pilot study, as well as during operation of the full air injection system. There were no soil gas concentrations detected above the applicable 2013 Tier 1 ESLs to screen for vapor intrusion concerns for commercial/industrial land use (Table 2). The protocols detailed in Section 4 and Section 5 for management of affected soil are also designed to detect and eliminate human exposure to petroleum-related constituents in soil gas while performing routine and infrequent subsurface activities at the Site.

3.3. Groundwater

Petroleum-affected groundwater is generally located in the vicinity of the former USTs (Figures 7 through 9). The horizontal extent of groundwater impacts varies with vertical depth, with the largest extent within the deeper aquifer zone and the smallest extent within the Livermore Formation. TPHg detected in groundwater samples collected in September 2010 ranged from 50 micrograms per liter ($\mu\text{g}/\text{L}$) at monitoring well MW-2D to 13,000 $\mu\text{g}/\text{L}$ at monitoring well MW-7D (see Figure 8). Similarly, TPHd detected in groundwater samples collected in the most recent groundwater sampling event (September 2010) ranged from 51 $\mu\text{g}/\text{L}$ at monitoring well MW-5D to 47,000 $\mu\text{g}/\text{L}$ at monitoring well MW-11D (see Figure 8). Lastly, methyl-tert-butyl ether (MTBE) detected in groundwater samples collected in September 2010 ranged from 0.61 $\mu\text{g}/\text{L}$ at monitoring well MW-12LF to 110 $\mu\text{g}/\text{L}$ at monitoring well MW-11LF. Many of these groundwater concentrations of TPHg, TPHd, and MTBE were detected above the applicable Tier 1 ESLs for groundwater that is a current or potential drinking water source. These ESLs for TPHg, TPHd, and MTBE are 100 $\mu\text{g}/\text{L}$, 100 $\mu\text{g}/\text{L}$, and 5 $\mu\text{g}/\text{L}$, respectively.

Potential exposure pathways for Site workers and Site visitors or contractors include ingestion, inhalation, or dermal contact of the affected groundwater. Based on the current land use, routine Site operations, current water supply sources, and the

institutional controls described below, these potential exposure pathways are not considered complete. Section 4 and Section 5 of this SMP detail the actions to be taken to eliminate human exposure to petroleum-related constituents in groundwater when performing routine and infrequent subsurface activities. The extent of impacted groundwater has been demonstrated to be stable in size and is anticipated to remain within the area identified in Figure 2.

4. Summary of Institutional Controls

Institutional controls include administrative and legal controls to limit human contact with residual contamination in soil and groundwater remaining within the area identified on Figure 2. As requested by the ACEH, a Covenant and Environmental Restriction on Property (Covenant) is required for the remaining impacted soil and groundwater identified on Figure 2. This Covenant will limit the land use at the area identified in Figure 2 to industrial, commercial, or office space. While agricultural use of the land will be limited by the Covenant, use of the land for cattle grazing, or other livestock grazing, is permitted. This is due to the limited root depth necessary for grass growth and the associated limited human interaction with the impacted soils. No residence or human habitation, hospital, school for persons under 21 years of age, day care centers for children or seniors, or gardening will be permitted under the Covenant.

The Covenant will also restrict the use of groundwater at the Site. Groundwater at the Site will not be developed as a drinking water source. Due to the nature of mining operations, provision for use of groundwater at the Site for industrial purposes will be allowed. However, use of groundwater for industrial purposes will not be allowed within 1,000 feet in any direction from the area of identified on Figure 2. If an industrial groundwater supply well is installed at the Site, the horizontal and vertical location of the groundwater extraction point will be situated so as not to capture petroleum-affected groundwater from the impacted area. For example, a future industrial groundwater supply well may be located hydraulically upgradient from the identified impacted area, screened at a depth below the documented petroleum impacts, or located on a different portion of the Site where the extraction radius of influence will not capture the impacted groundwater.

Additionally, any disturbance to soil or groundwater within the area illustrated on Figure 2 shall be made known to the ACEH and performed in accordance with the requirements set forth in this SMP. The existence of, and content of, this SMP will be included in the Covenant in an effort to communicate the information contained herein

to those individuals who may perform subsurface activities that will encounter residual contamination.

5. Soil and Groundwater Site Management Plan

The following specifies the general procedures for handling, moving, storing, and reusing or disposing of soil and groundwater that may be encountered during routine or infrequent subsurface activities conducted at the Site within the area illustrated on Figure 2. Activities that may cause soil or groundwater disturbance at the Site include, but are not limited to, the following:

- grading,
- removing/installing underground utilities and utility pipeline repair activities,
- installing foundations,
- mining operations,
- and performing other construction activities.

5.1. Notification Requirements

Prior to the commencement of subsurface activities listed above that are proposed to take place within the area illustrated on Figure 2, a work plan detailing the scope of the activities and compliance with this SMP will be prepared and submitted to the ACEH for review and approval. After approval is obtained from ACEH the subsurface activities at the Site may be initiated.

5.2. Health and Safety Requirements

Subsurface activities that may involve contact with impacted soil or groundwater at the Site within the area illustrated on Figure 2 are subject to the provisions specified in this SMP. Personnel at the Site who handle, or have the potential to come in contact with, potentially contaminated soil or groundwater shall have the appropriate health and safety training and wear the appropriate personal protective equipment.

Subsurface activities conducted at the Site within the area illustrated on Figure 2 must be in compliance with applicable rules and regulations governed by the California

Division of Occupational Safety and Health (Cal/OSHA), even if not expressly noted in this SMP. A project-specific health and safety plan shall be prepared prior to initiating subsurface construction work at the Site.

5.3. Groundwater Use Controls

Residual concentrations of petroleum-related compounds remain within the groundwater at the Site. Based on Figures 7 through 9, remaining concentrations are present at various magnitudes at different depths. During current operations, Site workers or contractors are not expected to encounter impacted groundwater. Additional groundwater use controls will be implemented to limit potential human exposure to impacted groundwater. Specifically, the Covenant will explicitly state that groundwater within the area identified on Figure 2 will not be developed for human consumption. This will adequately eliminate the potential for human ingestion of groundwater, as well as dermal contact and inhalation of vapors from groundwater.

Current water usage at the facility is primarily for dust control and aggregate washing. The water is comprised primarily of recycled wash water and collected storm water run-off. As needed, the recycled water system is supplemented with water pumped from containment ponds approximately 2,200 feet north of the area outlined in Figure 2.

Should Hanson want to install a water supply well for industrial/mining uses at the Site the following parameters regarding the location and depth of the well would be required:

- The well will be located a minimum of approximately 1,000 feet away (in all directions) from the perimeter of the area illustrated on Figure 2.
- The minimum depth of the seal of an industrial water supply well must be located 50 feet bgs per the guidance from the Department of Water Resources California Well Standards.

5.4. Potential Future Mining Development

Per the nature of mining operations at the facility, there is the potential to mine the area illustrated on Figure 2 in the future. In the event that the entirety of the area identified in Figure 2, or any part of that area, becomes part of mining operations that result in the excavation of subsurface materials (soil or groundwater), the procedures in Section

5.5. will be followed to limit the potential for Site workers to be exposed to petroleum constituents as well as to determine appropriate handling and disposal methods.

5.5. Soil and Groundwater Management During Subsurface Activities

Subsurface activities that may occur at the Site within the impacted area identified in Figure 2 include soil or groundwater removal as part of potential future mining operations, and infrequent subsurface intrusions, such as accessing underground utilities. The soil and groundwater management protocols detailed in this section will be followed during these types of subsurface activities, but are not needed during current routine mining operations that are being conducted in other areas of the facility beyond the area shown on Figure 2. The protocols described herein may be modified as appropriate if additional site characterization is performed prior to initiation of potential future mining operations or subsurface intrusions.

5.5.1. Soil Management Procedures

Within the area shown on Figure 2, excavated soil will be inspected for visual/olfactory evidence of impacts. If potentially-impacted soil (e.g., soil exhibiting discoloration, oily liquids, a petroleum odor, or other signs of contamination from petroleum fuels) is observed, the following actions shall be taken:

- Stockpile potentially-impacted soil separately on polyethylene sheeting and in accordance with this SMP;
- Screen the stockpiled potentially-impacted soil with a photoionization detector (PID), if appropriate;
- Characterize the stockpiled soils as specified below, and appropriately dispose of stockpiled soil at an appropriately licensed facility or suitable end use (e.g., reuse on a portion of the facility); and,
- Document and report the discovery of the apparently impacted soil as required to the appropriate jurisdictional agency.

Potentially-impacted soil generated from excavation activities will be stockpiled on-site. The stockpiles will be placed on, and covered with, polyethylene sheeting to provide separation and to prevent off-site soil migration due to wind and water erosion. In addition, a berm made of hay bales or another accepted material will be placed around each stockpile to limit potential runoff from the stockpile.

Dust control measures will be used during excavation activities such that no visible dust migration is observed. Typically, misting with water can be used to control dust emissions. Mitigation procedures to prevent wind erosion of an active stockpile will include applying sufficient water, or other accepted material, to keep the soil slightly damp, but not so much water to create runoff from oversaturation. Stockpiles will not be piled excessively high to further prevent airborne transport of stockpiled material.

Should odor issues be identified by Site workers or contractors during subsurface activities, personnel shall have appropriate health and safety training, wear the appropriate personal protective equipment, and field instruments shall be used to screen for the presence of VOCs within the breathing zone as appropriate. Should the detected concentrations of specific VOCs identified as part of a health and safety plan exceed the identified action levels, subsurface activities will be stopped and the mitigation measures identified within the health and safety plan will be performed.

Soils will be adequately sampled and characterized/profiled per the disposal facility requirements in the event that off-site disposal is selected as the method of final disposition of the soils. These typically conform to the sampling frequencies provided in the California Department of Toxic Substances Control (DTSC) *Information Advisory – Clean Import Fill Material* (DTSC 2001) as follows:

- Up to 1,000 cubic yards – one (1) sample per 250 cubic yards
- 1,000 to 5,000 cubic yards – four (4) samples for the first 1,000 cubic yards plus one (1) sample for each additional 500 cubic yards
- Greater than 5,000 cubic yards – 12 samples for the first 5,000 cubic yards plus one (1) sample for each additional 1,000 cubic yards

Soils identified for transportation and off-site disposal should be profiled, either in-place or from the stockpile.

5.5.2. Groundwater Management Procedures

If groundwater is encountered during subsurface activities, or if dewatering is necessary, the following procedures should be followed. Field instruments shall be used to screen for the presence of volatile organic compounds (VOCs) within the breathing zone of Site workers and contractors. Groundwater produced during dewatering activities may be treated to remove sediment and/or dissolved fuel

hydrocarbons and related constituents and discharged to a sanitary sewer in accordance with applicable permits from the appropriate regulatory agencies. Alternatively, groundwater may be collected, removed from the Site, and disposed of appropriately. Both potential means of disposal may require collection and analysis of the groundwater for petroleum-related constituents to ensure compliance with the applicable permits. Groundwater shall not be used for dust control, either during routine operations or infrequent activities, unless groundwater analyses indicate concentrations of petroleum-related constituents are below analytical laboratory reporting limits.

5.6. Contingency Plan

This section describes the protocols to be followed in the event that unknown areas of affected soil, groundwater and/or underground structures are identified at the facility. These protocols will be followed by all involved parties, including Hanson and other entities, such as a contractor or qualified consultant, designated or certified by Hanson.

Unknown conditions (e.g., suspected affected soil) that may trigger contingency monitoring procedures during Site activities include, but are not limited to, those listed below. Discovery of any of these conditions could require either alternative or additional measures to protect human health and the environment:

- Oily, shiny, or saturated soil or free product;
- Soil with a strong chemical odor;
- Discovery of objects of environmental concern such as USTs and associated piping or buried drums;
- Discovery of potentially-hazardous debris (e.g., automobile tires, asbestos-containing pipes, and transite pipes);
- Discovery of hazardous storage areas; and
- Other conditions that vary materially from those documented during previous investigations.

If suspected affected soil is detected during subsurface activities, the following procedures shall be followed:

- All field activities that may potentially disturb the suspected affected soil must be immediately stopped and the area around the suspected affect soil vacated.
- If an emergency situation arises such that emergency services are needed, call 911 and follow the emergency procedures given in the health and safety plan, including notification of the appropriate Hanson employees.
- Any equipment and clothing that comes in contact with the suspected or known affected soil must be decontaminated as specified in the health and safety plan.
- If stockpiling is necessary, stockpiles will be placed on polyethylene sheeting and covered at the end of each work day.

During the subsurface activities conducted at the Site, it is possible that USTs, sumps, or other underground structures that were not identified during previous investigations will be discovered. For example, a UST may be unearthed during grading and site excavation. Other subsurface structures might not have features that extend above the excavated surface and could be unearthed when construction equipment comes into contact with them. The remainder of this section outlines the measures that govern identification and removal of USTs, and appropriate measures for addressing other underground structures encountered during development.

Chapter 6.7 of the California Health and Safety Code contains the specific requirements for removing and remediating affected soil associated with a leaking UST (LUST). The county within which the UST is encountered is responsible for local oversight and oversees the removal of USTs. Environmental investigations and responses required following removal of the UST will be conducted under the direction of the ACEH and in accordance with the specific provisions delineated in Chapter 6.7 of the California Health and Safety Code. Additionally, the Alameda County Fire Department will be notified in the event that a LUST or appurtenant piping is discovered at the Site.

For other subsurface structures that may have been related to former use and storage of chemicals, such as underground vaults and sumps, the following procedures will be implemented to determine the proper disposition of the encountered structure.

The structure will be inspected to assess whether it contains any indication of chemical residuals or free liquids, other than water. A qualified individual will make this assessment in the field using visual or olfactory evidence, or field monitoring

equipment (e.g., PID). If there is no indication, based on visual observation, odor, or field air monitoring equipment, of chemical impact within the vault or sump, then removal of the structure is not necessary for environmental reasons, but may be prudent for other reasons.

If a sump or vault contains liquids that appear to contain chemicals, based on visual observations, odor, or field air monitoring equipment, then the following steps shall be taken:

- The potentially chemical-containing liquids will be sampled and analyzed for profiling purposes.
- The chemical will be characterized and the appropriate response action will be determined. If appropriate, the liquids will be properly removed and disposed.
- A report will be prepared documenting response activities for submittal to the Alameda County Fire Department and ACEH.

If LNAPL is encountered, the horizontal and vertical extent will be assessed, the chemical characterized, and the soil managed in a manner approved by ACEH.

5.7. Record Keeping, Inspections, and Reporting

Record keeping and inspection procedures to monitor compliance with this SMP shall be the responsibility of the party performing the work (i.e., Hanson or contractors). During intrusive subsurface work in the area identified in Figure 2 in which there is potential exposure to contaminated soil, soil vapor and/or groundwater, a daily log will be maintained to provide detailed documentation of work activities until potential contamination is removed or contained.

Additionally, Hanson will perform an annual inspection of the Site to ensure compliance with this SMP. The items to be inspected will be developed by Hanson as part of their existing inspection processes. The results of the annual inspection will be communicated via letter to the ACEH. At this time, any upcoming plans for land use or operational changes that may initiate the protocols set forth herein will also be communicated to the ACEH.



Soil and Groundwater Site Management Plan

Mission Valley Rock and Asphalt Plant
7999 Athenour Way, Sunol, California

5.8. Soil and Groundwater Site Management Plan Availability

The location of affected soil and groundwater remaining at the Site will be communicated to Site workers and contractors through this SMP. The existence of this SMP will be documented as part of a Covenant to be recorded with the deed for the property. Additionally, this SMP will be provided to the current property owner for distribution to Site workers or contractors performing intrusive subsurface work.

6. References

ARCADIS-U.S., Inc. (ARCADIS). 2011. Fourth Quarter 2010 Air Injection System and Groundwater Monitoring Report. March 18.

ARCADIS. 2012. Response to Alameda County Environmental Health Public Comments for Fuel Leak Case No. RO0000207 and GeoTracker Global ID T0600102092, Mission Valley Rock and Asphalt, 7999 Athenour Way, Sunol, CA 94586. June 1.

ARCADIS. 2013. Investigation to Assess Non-Aqueous Phase Liquid at the Mission Valley Rock and Asphalt Plant Located at 7999 Athenour Way in Sunol, California. February 1.

Alameda County Environmental Health (ACEH). 2007a. Letter to Lee Cover of Hanson Aggregates West Region from Jerry Wickham, re: Fuel Leak Case No. RO0000207 and GeoTracker Global ID T0600102092, Mission Valley Rock and Asphalt, 7999 Athenour Way, Sunol, CA 94586. April 27.

ACEH. 2007b. Letter to Lee Cover of Hanson Aggregates West Region from Jerry Wickham, re: Fuel Leak Case No. RO0000207 and GeoTracker Global ID T0600102092, Mission Valley Rock and Asphalt, 7999 Athenour Way, Sunol, CA 94586. August 30.

ACEH. 2008. Letter to Lee Cover of Hanson Aggregates West Region from Jerry Wickham, re: Fuel Leak Case No. RO0000207 and GeoTracker Global ID T0600102092, Mission Valley Rock and Asphalt, 7999 Athenour Way, Sunol, CA 94586. October 24.

ACEH, 2012. Letter to Lee Cover of Hanson Aggregates from Jerry Wickham, re: Case File Review for Fuel Leak Case No. RO0000207 and GeoTracker Global ID T0600102092, Mission Valley Rock and Asphalt, 7999 Athenour Way, Sunol, CA 94586. June 21.

ACEH, 2013. Letter to Gregory Knapp of Lehigh Hanson from Jerry Wickham, re: Case File Review for Fuel Leak Case No. RO0000207 and GeoTracker Global ID T0600102092, Mission Valley Rock and Asphalt, 7999 Athenour Way, Sunol, CA 94586. March 13.



Soil and Groundwater Site Management Plan

Mission Valley Rock and Asphalt Plant
7999 Athenour Way, Sunol, California

Department of Toxic Substances Control. 2001. Information Advisory: Clean Imported Fill Material. October.

LFR Inc. (LFR). 2007a. Site Assessment Report of Additional Lateral and Vertical Characterization and Plan for Interim Remediation at the Asphalt Plant, Hanson Aggregates Mission Valley Rock Facility. April 10.

LFR. 2007b. Work Plan to Conduct a Groundwater Remediation Pilot Test at the Asphalt Plant and Additional Subsurface Characterization in the Former Diesel Spray Area, Hanson Aggregates Mission Valley Rock Facility. August 3.

LFR. 2008a. Air Sparge Pilot Test Completion Report, Hanson Aggregates Mission Valley Rock Facility, 7999 Athenour Way, Sunol, Alameda County, California. March 28.

LFR. 2008b. Work Plan to Conduct Air Injection and Implement Monitored Natural Attenuation, Hanson Aggregates Mission Valley Rock Facility, 7999 Athenour Way, Sunol, Alameda County, California. October 3.

LFR Inc. and ARCADIS Company. 2010. Fourth Quarter Air Injection System and Groundwater Monitoring Report, Hanson Aggregates Mission Valley Rock Facility, 7999 Athenour Way, Sunol, Alameda County, California. February 12.

Tank Protect Engineering of Northern California Inc., May 13, 1997, Preliminary Site Assessment Report, Mission Valley Rock Company, 7999 Athenour Way, Sunol, California 94586.



Tables

Table 1
Groundwater Monitoring Well Details
Hanson Aggregates
7999 Athenour Way, Sunol, California

WELL ID #	NORTHING (FT.) / LATITUDE (D.MS)	EASTING (FT.) / LONGITUDE (D.MS)	ELEVATION (FT.)	DESCRIPTION
MW-1	2033631.2	6162569.3	258.68	PVC
	37.5718715	-121.8771414	259.03	Box
MW-2S	2033560.2	6162561.6	258.84	PVC
	37.5716762	-121.8771643	259.09	Box
MW-2M	2033560.2	6162561.6	258.99	PVC
	37.5716762	-121.8771643	259.09	Box
MW-2D	2033560.2	6162561.6	258.91	PVC
	37.5716762	-121.8771643	259.09	Box
MW-3	2033545.9	6162615.1	259.08	PVC
	37.5716392	-121.8769792	259.64	Box
MW-4S	2033585.5	6162653.7	259.14	PVC
	37.5717493	-121.8768479	259.57	Box
MW-4D	2033585.5	6162653.7	259.22	PVC
	37.5717493	-121.8768479	259.57	Box
MW-5S	2033577.7	6162610.5	259.43	PVC
	37.5717264	-121.8769967	259.78	Box
MW-5D	2033577.7	6162610.5	259.40	PVC
	37.5717264	-121.8769967	259.78	Box
MW-6S	2033559.6	6162581.5	258.75	PVC
	37.5716753	-121.8770956	259.62	Box
MW-6D	2033559.6	6162581.5	259.27	PVC
	37.5716753	-121.8770956	259.62	Box
MW-7S	2033611.9	6162537.7	258.82	PVC
	37.5718173	-121.8772494	259.09	Box
MW-7D	2033611.9	6162537.7	258.07	PVC
	37.5718173	-121.8772494	259.09	Box
MW-8	2033607.6	6162516.9	258.84	PVC
	37.5718047	-121.8773211	259.40	Box
MW-9S	2033664.2	6162537.6	258.41	TOP 2" PVC N. SIDE
	37.341905897	-121.523810911	259.12	LID
			258.82	GROUND
MW-9D	2033657.0	6162535.6	258.86	TOP 2" PVC N. SIDE
	37.341898750	-121.523813263	259.21	LID
			258.92	GROUND
MW-9LF	2033650.0	6162534.0	258.94	TOP 2" PVC N. SIDE
	37.341891807	-121.523815123	259.20	LID
			258.94	GROUND
MW-10S	2033614.1	6162622.3	260.67	TOP 2" PVC N. SIDE
	37.341857601	-121.523704793	261.01	LID

Table 1
Groundwater Monitoring Well Details
Hanson Aggregates
7999 Athenour Way, Sunol, California

WELL ID #	NORTHING (FT.) / LATITUDE (D.MS)	EASTING (FT.) / LONGITUDE (D.MS)	ELEVATION (FT.)	DESCRIPTION
			260.63	GROUND
MW-10D	2033619.6	6162621.8	260.64	TOP 2" PVC N. SIDE
	37.341863031	-121.523705515	261.34	LID
			261.08	GROUND
MW-10LF	2033615.6	6162638.9	260.58	TOP 2" PVC N. SIDE
	37.341859325	-121.523684203	261.02	LID
			259.59	GROUND
MW-11S	2033488.3	6162571.1	258.96	TOP 2" PVC N. SIDE
	37.341732489	-121.523766087	259.33	LID
			258.87	GROUND
MW-11D	2033493.5	6162569.1	258.98	TOP 2" PVC N. SIDE
	37.341737601	-121.523768666	259.27	LID
			258.93	GROUND
MW-11LF	2033488.0	6162566.0	259.01	TOP 2" PVC N. SIDE
	37.341732119	-121.523772416	259.32	LID
			258.97	GROUND
MW-12S	2033494.7	6162438.2	262.69	TOP 2" PVC N. SIDE
	37.341736883	-121.523931272	263.17	LID
			262.93	GROUND
MW-12D	2033498.8	6162439.1	262.70	TOP 2" PVC N. SIDE
	37.341740949	-121.523930229	262.23	LID
			262.86	GROUND
MW-12LF	2033504.3	6162441.4	262.90	TOP 2" PVC N. SIDE
	37.341746420	-121.523927472	263.17	LID
			262.82	GROUND

BENCH MARK: MW-6(D) TOP PVC

MORROW SURVEYING PLATE DATED 2-8-05

Elevation =259.27 FEET NAVD88 Datum

HORIZONTAL CONTROL: MW2 AND MW 4 COORDINATES PER LFR

MW-2

NORTHING =2,033,560.2 , EASTING = 6,162,561.6 FEET; EPOCH DATE = 2000.35

MW-4

NORTHING =2,033,585.5 , EASTING = 6,162,653.7 FEET; EPOCH DATE = 2000.35

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

Table 2
Historical Soil Gas Analytical Data
Hanson Aggregates
7999 Athenour Way, Sunol, California

Soil-Gas Probe ID	SG-1		SG-2		SG-3				SG-4				Tier 1 ESL				
	12/18/09		12/18/09		2/18/08		2/19/08		12/18/09		2/18/08			2/19/08		12/18/09	
Date Sampled	12/18/09		12/18/09		2/18/08		2/19/08		12/18/09		2/18/08		2/19/08		12/18/09		
Sample Collection Timing	2 - 4 Hours After Turning Off Air Injection		2 - 4 Hours After Turning Off Air Injection		During Continuous Air Injection Test		One Day After Test Air Injection Ceased		2 - 4 Hours After Turning Off Air Injection		During Continuous Air Injection Test		One Day After Test Air Injection Ceased		2 - 4 Hours After Turning Off Air Injection		
Sample Volume (ml)	1,037		943		2,015		2,003		1,003		2,000		2,003		962		
Units	ng	mg/m ³	ng	mg/m ³	ng	mg/m ³	ng	mg/m ³	ng	mg/m ³	ng	mg/m ³	ng	mg/m ³	ng	mg/m ³	mg/m ³
TPHd	< 1,000	< 960	< 1,000	< 1,100	< 1,000	< 500	< 1,000	< 500	< 1,000	< 1,000	< 1,000	< 500	< 1,000	< 500	< 1,000	< 1,100	1,300,000
TPHg	< 1,000	< 960	< 1,000	< 1,100	150,000	74,000	1,000 J	500 J	480,000 E	480,000 E	1,100,000	550,000	1,400	700	74,000	77,000	3,066,000
Benzene	< 10	< 9.6	< 10	< 11	< 5.0	< 2.5	< 5.0	< 2.5	< 10	< 10	41	21	< 5.0	< 2.5	11	11	420
Toluene	< 5.0	< 4.8	< 5.0	< 5.3	12	6	5.8	2.9	< 5.0	< 5.0	130	65	69	34	< 5.0	< 5.2	1,300,000
Ethylbenzene	< 5.0	< 4.8	< 5.0	< 5.3	21	10	< 5.0	< 2.5	< 5.0	< 5.0	280	140	< 5.0	< 2.5	< 5.0	< 5.2	4,900
m, p-Xylene	< 10	< 9.8	< 10	< 11	26	13	< 10	< 5.0	< 10	< 10	70	35	< 10	< 5.0	< 10	< 11	440,000
o-Xylene	< 5.0	< 4.8	< 5.0	< 5.3	< 5.0	< 2.5	< 5.0	< 2.5	< 5.0	< 5.0	21	11	< 5.0	< 2.5	< 5.0	< 5.2	440,000
Napthalene	< 5.0	< 4.8	< 5.0	< 5.3	< 5.0	< 2.5	< 5.0	< 2.5	< 5.0	< 5.0	< 5.0	< 2.5	< 5.0	< 2.5	< 5.0	< 5.2	360
MTBE	< 50	< 48	< 50	< 53	< 50	< 25	< 50	< 25	< 50	< 50	< 50	< 25	< 50	< 25	< 50	< 52	47,000

Notes:

"< " = analyte not detected at or above the noted laboratory reporting limit

ml = milliliters

ng = nanograms

µg/m³ = micrograms per cubic meter

J = estimated value

TPHg = total petroleum hydrocarbons as gasoline

TPHd = total petroleum hydrocarbons as diesel

MTBE = methyl tertiary-butyl ether

E = Exceeds instrument calibration range

Bolded values are above the 2013 Tier 1 ESL

Tier 1 ESL = Commercial/Industrial 2013 Tier 1 Environmental Screening Levels (ESLs) put forth by the San Francisco Bay Regional Water Quality Control Board

Figures



HANSON AGGREGATES, 7999 ATHENOUR WAY,
SUNOL, CALIFORNIA

SITE LOCATION MAP



FIGURE
1



GRAPHIC SCALE



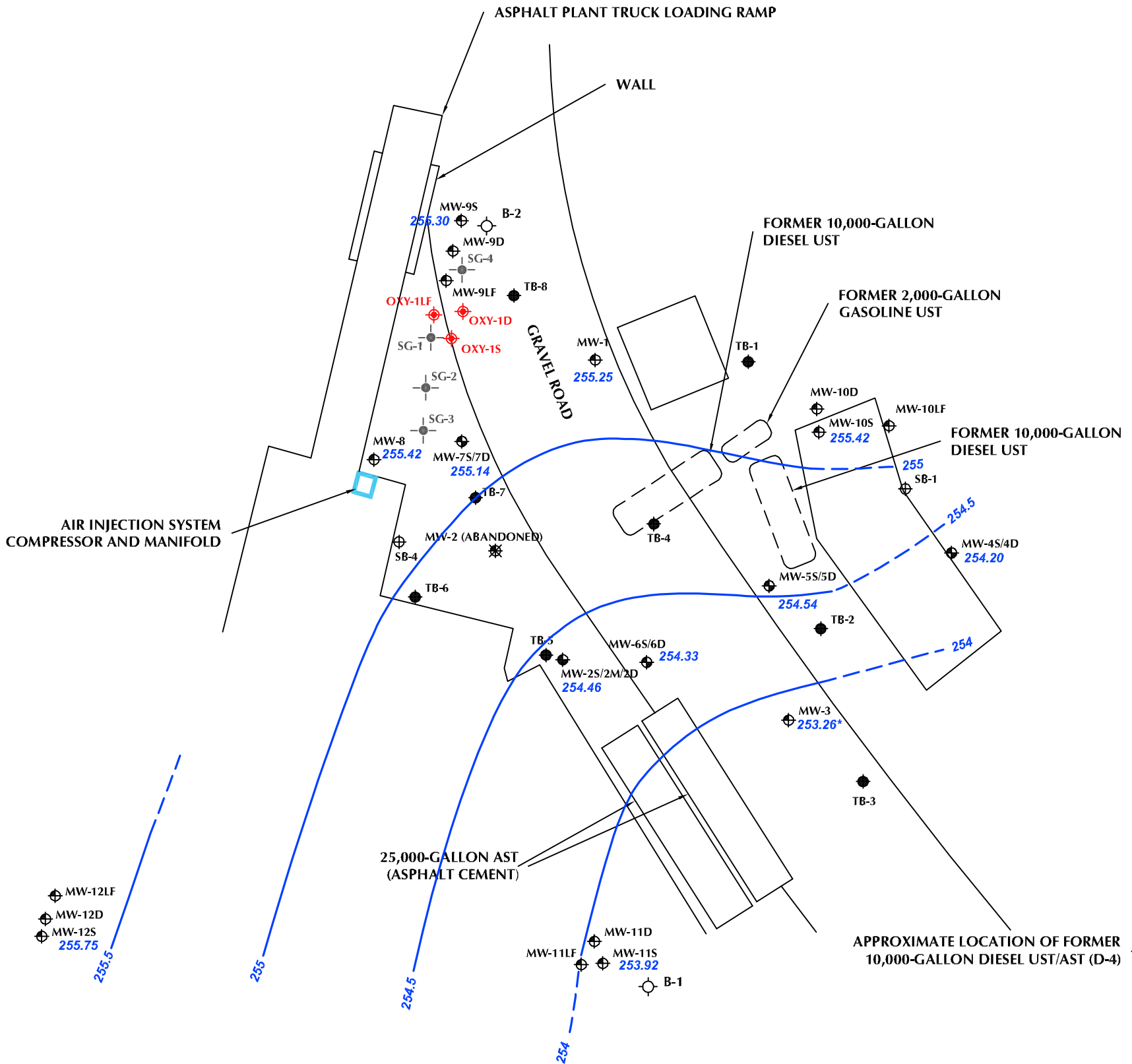
- EXPLANATION:**
- MW-9S Groundwater monitoring well (single completion; well cluster)
 - MW-7S/7D Groundwater monitoring well (dual nested)
 - MW-2S/2M/2D Groundwater monitoring well (triple nested)
 - MW-2 Abandoned groundwater monitoring well
 - TB-6 Grab groundwater sample location
 - SB-4 Temporary soil boring location
 - B-2 Sonic boring / grab groundwater
 - MIP-3 MIP boring / grab groundwater
 - OXY-1S Air injection well (approximate location)
 - SG-1 Soil gas monitoring probe (approximate location)
 - LIF-1 CPT/LIF boring location
 - AST = Aboveground storage tank
 - UST = Underground storage tank
 - MIP = Membrane Interface Probe
 - CPT = Cone Penetrometer
 - LIF = Laser induced Fluorescence
 - Portion of the site subject to the Soil and Groundwater Site Management Plan



HANSON AGGREGATES 7999 ATHEOUR WAY SUNOL, CALIFORNIA	
SITE PLAN	
	FIGURE 2

XREFS: IMAGES: PROJECTNAME: ---
 AERIAL HANSON SUNOL.jpg

MIP-1



EXPLANATION:

- MW-9S Groundwater monitoring well (single completion; well cluster)
- MW-7S/7D Groundwater monitoring well (dual nested)
- MW-2S/2M/2D Groundwater monitoring well (triple nested)
- MW-2 Abandoned groundwater monitoring well
- TB-6 Grab groundwater sample location
- SB-4 Temporary soil boring location
- B-2 Sonic boring / grab groundwater
- MIP-3 MIP boring / grab groundwater
- SG-1 Soil gas monitoring probe (approximate location)
- OXY-1S Air injection well (approximate location)

258 Groundwater elevation contour (feet above mean sea level), dashed where inferred

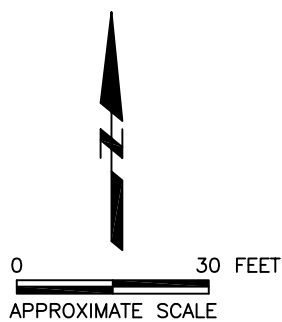
256.89 Groundwater elevation (feet above mean sea level)

* Not used in contouring

AST = Aboveground storage tank
 UST = Underground storage tank
 MIP = Membrane Interface Probe

MIP-3

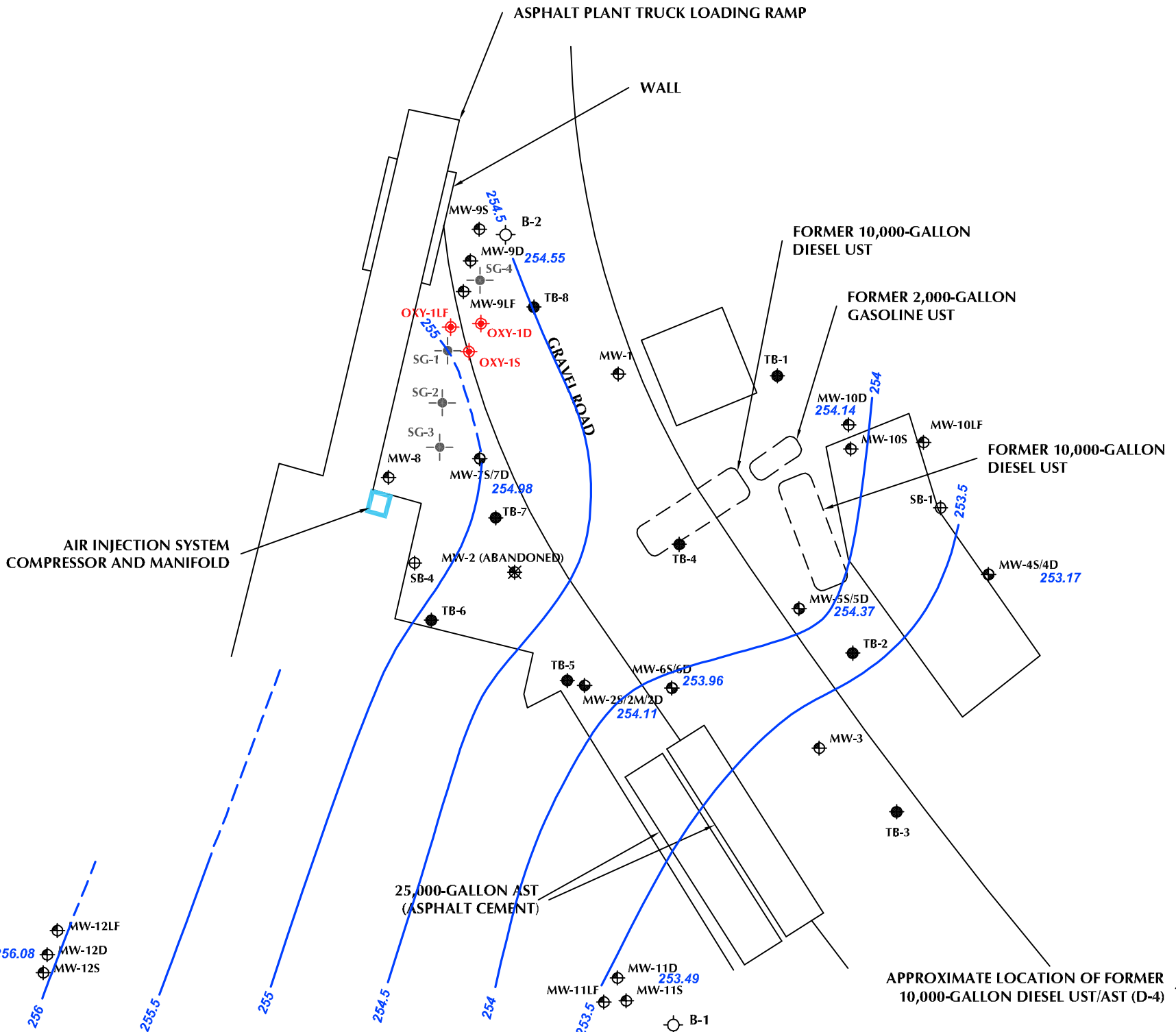
MIP-6



HANSON AGGREGATES 7999 ATHEOUR WAY SUNOL, CALIFORNIA	
GROUNDWATER ELEVATION CONTOURS FOR THE SHALLOW INTERVAL (SEPTEMBER 27, 2010)	
	FIGURE 3

XREFS: IMAGES: PROJECTNAME: --
 AERIAL HANSON SUNOL.jpg

MIP-1



EXPLANATION:

- MW-9S Groundwater monitoring well (single completion; well cluster)
- MW-7S/7D Groundwater monitoring well (dual nested)
- MW-2S/2M/2D Groundwater monitoring well (triple nested)
- MW-2 Abandoned groundwater monitoring well
- TB-6 Grab groundwater sample location
- SB-4 Temporary soil boring location
- B-2 Sonic boring / grab groundwater
- MIP-3 MIP boring / grab groundwater
- SG-1 Soil gas monitoring probe (approximate location)
- OXY-15 Air injection well (approximate location)

258 Groundwater elevation contour (feet above mean sea level), dashed where inferred

257.57 Groundwater elevation (feet above mean sea level)

- AST = Aboveground storage tank
- UST = Underground storage tank
- MIP = Membrane Interface Probe

MIP-3

MIP-6



0 30 FEET
 APPROXIMATE SCALE

HANSON AGGREGATES
 7999 ATHEOUR WAY
 SUNOL, CALIFORNIA

**GROUNDWATER ELEVATION CONTOURS
 FOR THE DEEP INTERVAL
 (SEPTEMBER 27, 2010)**

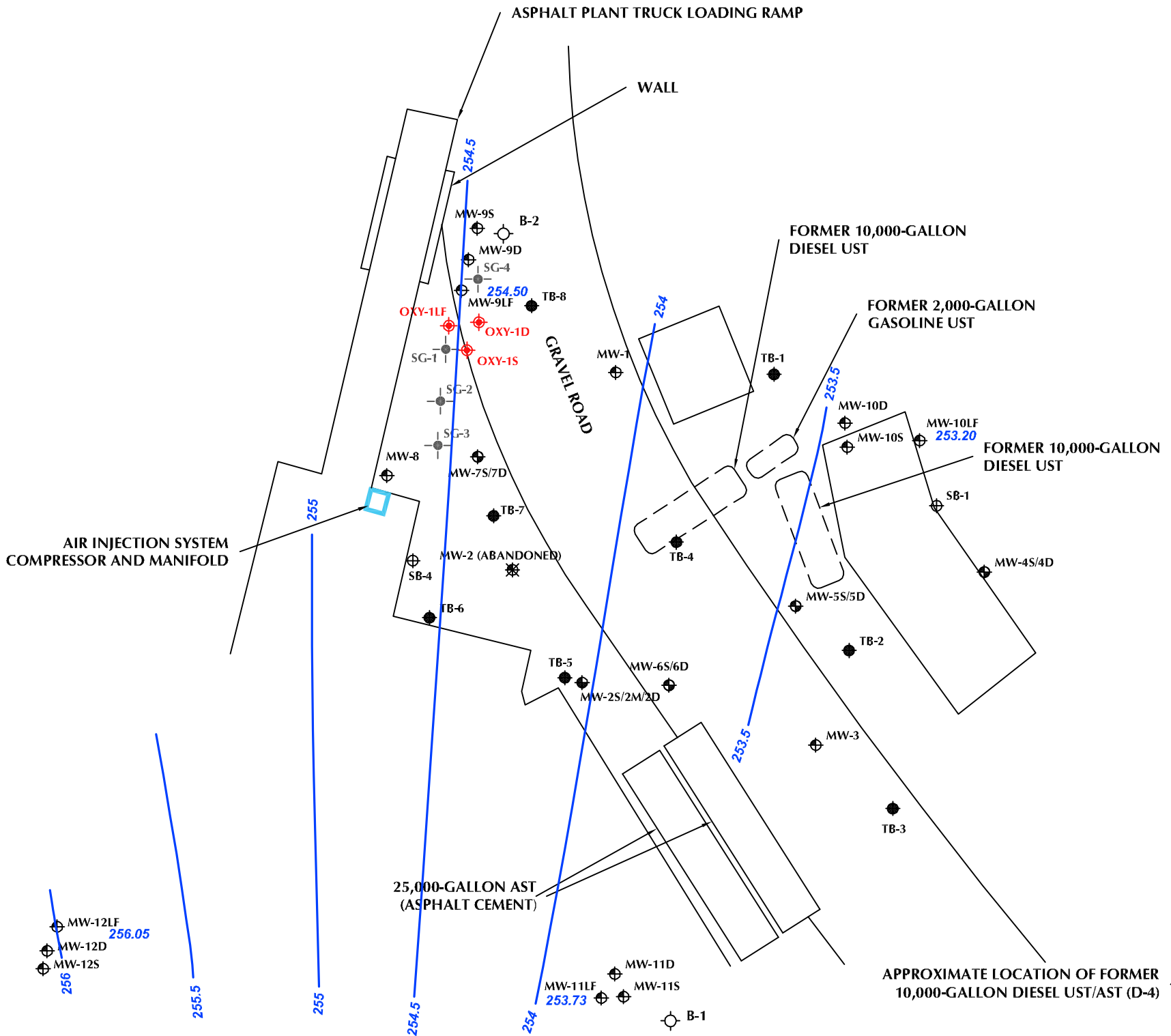


FIGURE

4

XREFS: IMAGES: PROJECTNAME: ---
 AERIAL HANSON SUNOL.jpg

MIP-1



EXPLANATION:

- MW-9S Groundwater monitoring well (single completion; well cluster)
- MW-7S/7D Groundwater monitoring well (dual nested)
- MW-2S/2M/2D Groundwater monitoring well (triple nested)
- MW-2 Abandoned groundwater monitoring well
- TB-6 Grab groundwater sample location
- SB-4 Temporary soil boring location
- B-2 Sonic boring / grab groundwater
- MIP-3 MIP boring / grab groundwater
- SG-1 Soil gas monitoring probe (approximate location)
- OXY-1S Air injection well (approximate location)

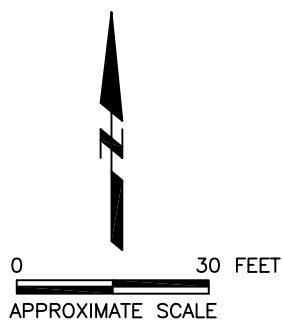
255 Groundwater elevation contour (feet above mean sea level), dashed where inferred

253.73 Groundwater elevation (feet above mean sea level)

- AST = Aboveground storage tank
- UST = Underground storage tank
- MIP = Membrane Interface Probe

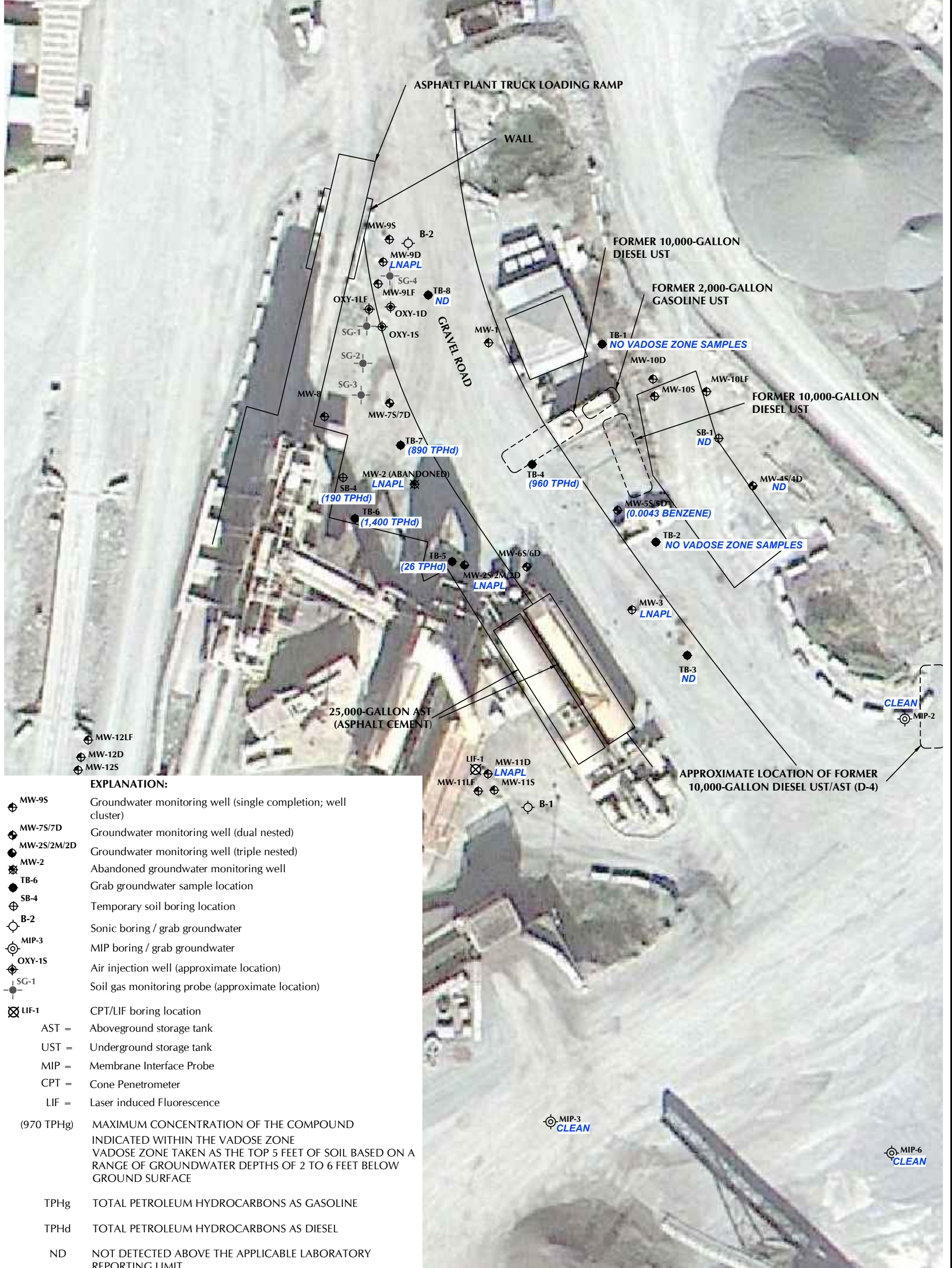
MIP-3

MIP-6



HANSON AGGREGATES 7999 ATHEOUR WAY SUNOL, CALIFORNIA	
GROUNDWATER ELEVATION CONTOURS FOR THE LIVERMORE FORMATION (SEPTEMBER 27, 2010)	
	FIGURE 5

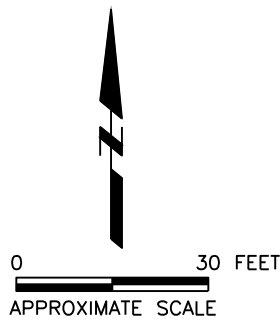
XREFS: IMAGES: PROJECTNAME: ---
 Google Earth image August 2012.jpg



EXPLANATION:

- ⊕ MW-9S Groundwater monitoring well (single completion; well cluster)
 - ⊕ MW-7S/7D Groundwater monitoring well (dual nested)
 - ⊕ MW-2S/2M/2D Groundwater monitoring well (triple nested)
 - ⊕ MW-2 Abandoned groundwater monitoring well
 - TB-6 Grab groundwater sample location
 - ⊕ SB-4 Temporary soil boring location
 - B-2 Sonic boring / grab groundwater
 - ⊕ MIP-3 MIP boring / grab groundwater
 - ⊕ OXY-1S Air injection well (approximate location)
 - ⊕ SG-1 Soil gas monitoring probe (approximate location)
 - ⊗ LIF-1 CPT/LIF boring location
- AST = Aboveground storage tank
 UST = Underground storage tank
 MIP = Membrane Interface Probe
 CPT = Cone Penetrometer
 LIF = Laser induced Fluorescence
- (970 TPHg) MAXIMUM CONCENTRATION OF THE COMPOUND INDICATED WITHIN THE VADOSE ZONE TAKEN AS THE TOP 5 FEET OF SOIL BASED ON A RANGE OF GROUNDWATER DEPTHS OF 2 TO 6 FEET BELOW GROUND SURFACE
- TPHg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
 TPHd TOTAL PETROLEUM HYDROCARBONS AS DIESEL
 ND NOT DETECTED ABOVE THE APPLICABLE LABORATORY REPORTING LIMIT
 CLEAN NO POSITIVE IDENTIFICATION OF PETROLEUM COMPOUNDS
 LNAPL OBSERVED PRESENCE OF LIGHT NON-AQUEOUS PHASE LIQUID

SOIL INVESTIGATION RESULTS OBTAINED FROM:
 TAIT ENVIRONMENTAL MANAGEMENT, INC. 2006. SUMMARY REPORT: ENVIRONMENTAL ACTIVITIES, MISSION VALLEY ROCK COMPANY, 7999 ATHENOUR WAY, SUNOL, CALIFORNIA. MAY 16.



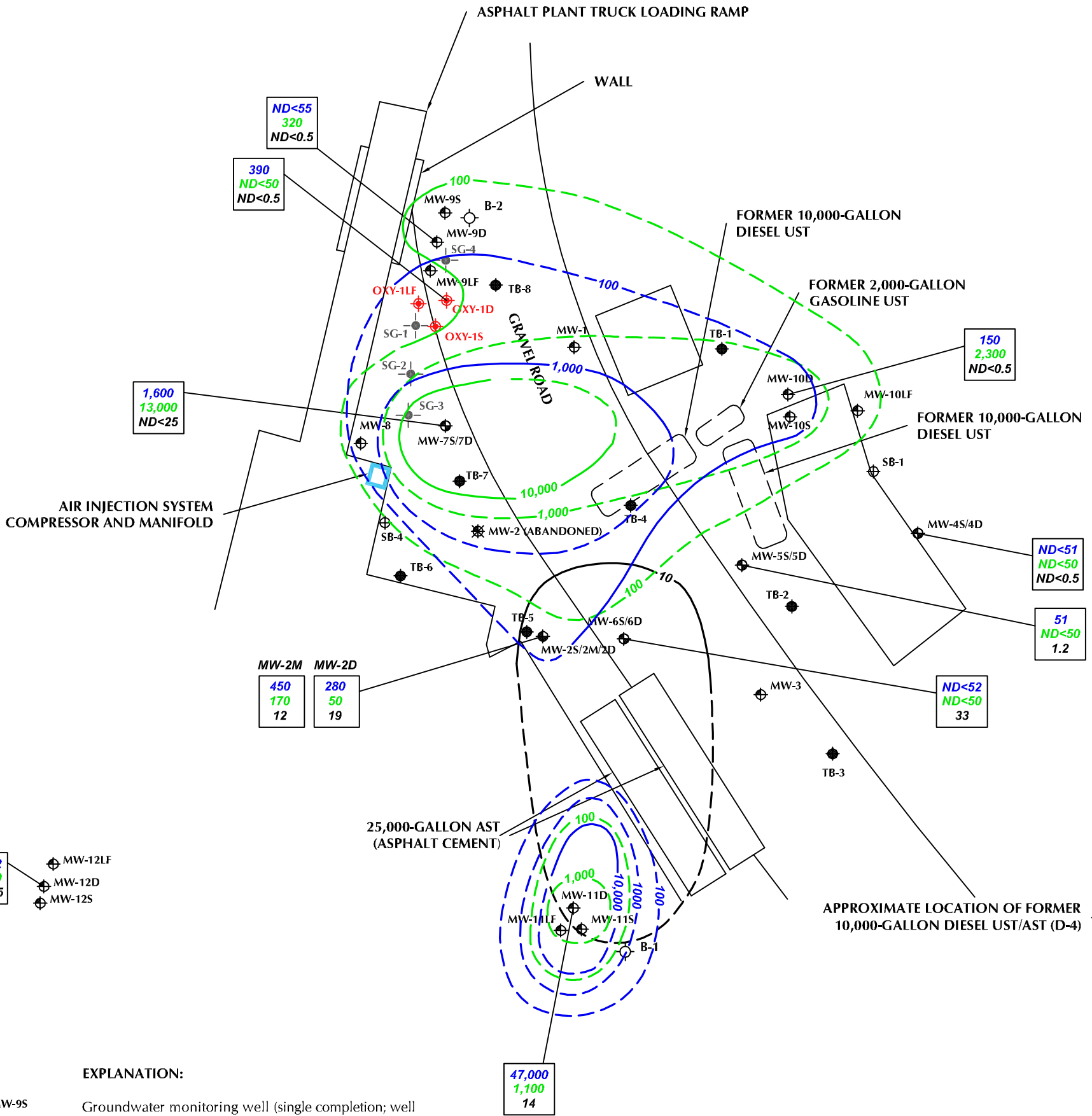
HANSON AGGREGATES
 7999 ATHEOUR WAY
 SUNOL, CALIFORNIA

VADOSE ZONE SOIL ANALYTICAL RESULTS



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 AERIAL HANSON SUNOL.jpg

MIP-1



EXPLANATION:

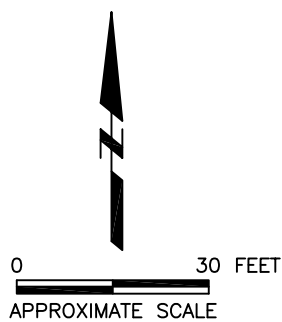
- MW-9S Groundwater monitoring well (single completion; well cluster)
 - MW-7S/7D Groundwater monitoring well (dual nested)
 - MW-2S/2M/2D Groundwater monitoring well (triple nested)
 - MW-2 Abandoned groundwater monitoring well
 - TB-6 Grab groundwater sample location
 - SB-4 Temporary soil boring location
 - B-2 Sonic boring / grab groundwater
 - MIP-3 MIP boring / grab groundwater
 - SG-1 Soil gas monitoring probe (approximate location)
 - OXY-1S Air injection well (approximate location)
- 280 TPHd - Total petroleum hydrocarbons as diesel (measured in $\mu\text{g/L}$)
50 TPHg - Total petroleum hydrocarbons as gasoline (measured in $\mu\text{g/L}$)
19 MTBE - Methyl tert-butyl ether (measured in $\mu\text{g/L}$)

- 100 TPHd
- 100 TPHg
- 10 MTBE

- AST = Aboveground storage tank
- UST = Underground storage tank
- MIP = Membrane Interface Probe
- $\mu\text{g/L}$ = Micrograms per liter
- ND< = Not detected at the given reporting limit

MIP-3

MIP-6



HANSON AGGREGATES
 7999 ATHEOUR WAY
 SUNOL, CALIFORNIA

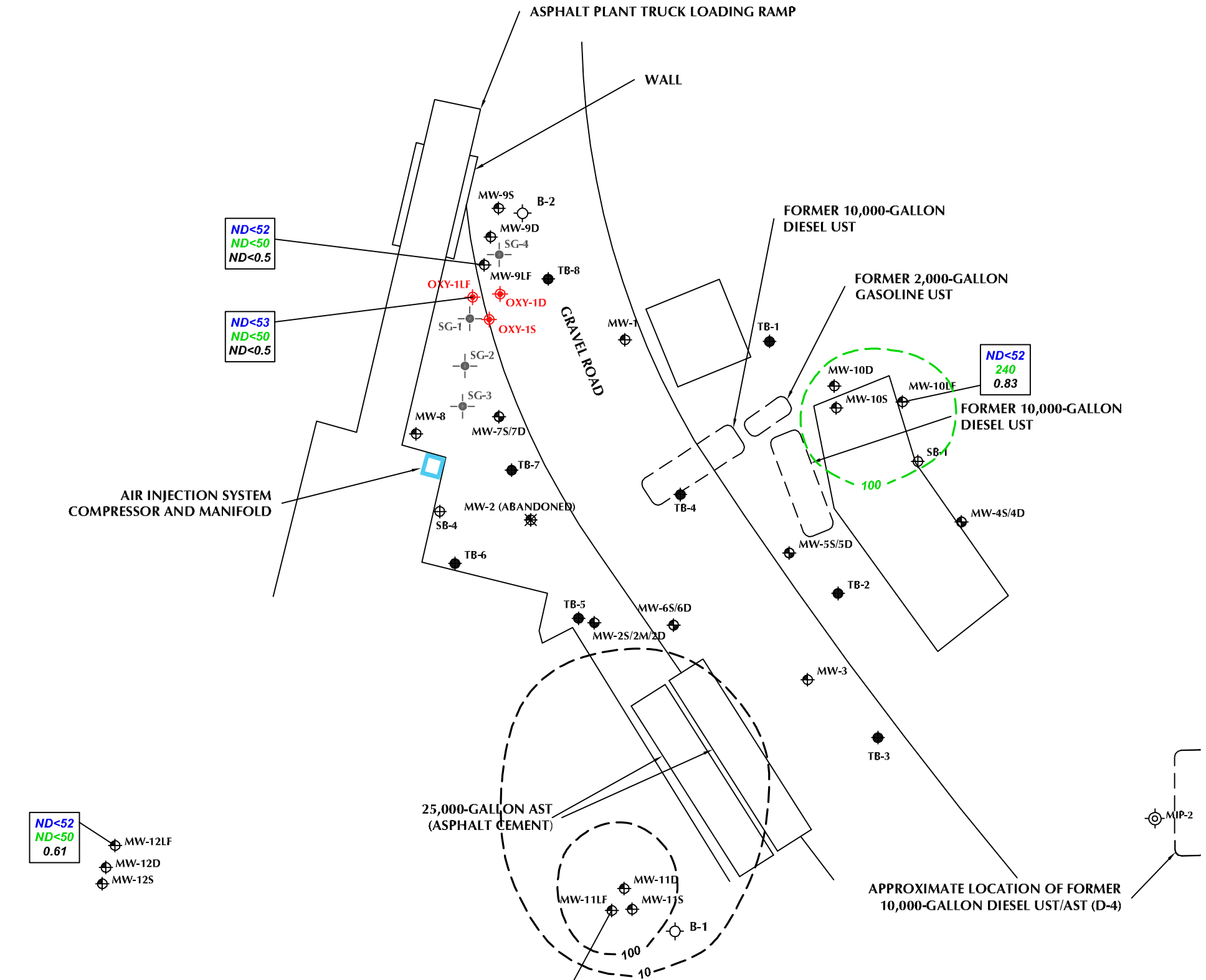
**CONCENTRATIONS OF TPHd, TPHg, AND
 MTBE IN GROUNDWATER FOR THE
 DEEP INTERVAL (SEPTEMBER 2010)**

ARCADIS

FIGURE
8

XREFS: IMAGES: PROJECTNAME: ---
 AERIAL HANSON SUNOL.jpg

MIP-1



EXPLANATION:

- MW-9S Groundwater monitoring well (single completion; well cluster)
- MW-7S/7D Groundwater monitoring well (dual nested)
- MW-2S/2M/2D Groundwater monitoring well (triple nested)
- MW-2 Abandoned groundwater monitoring well
- TB-6 Grab groundwater sample location
- SB-4 Temporary soil boring location
- B-2 Sonic boring / grab groundwater
- MIP-3 MIP boring / grab groundwater
- SG-1 Soil gas monitoring probe (approximate location)
- OXY-1S Air injection well (approximate location)

ND<50
 ND<50
 0.83

TPHd - Total petroleum hydrocarbons as diesel (measured in $\mu\text{g/L}$)
 TPHg - Total petroleum hydrocarbons as gasoline (measured in $\mu\text{g/L}$)
 MTBE - Methyl tert-butyl ether (measured in $\mu\text{g/L}$)

TPHd was not detected in samples from any of the Livermore formation wells; therefore, no concentration contours are provided.

100
 10

TPHg
 MTBE

- AST - Aboveground storage tank
- UST - Underground storage tank
- MIP - Membrane Interface Probe
- $\mu\text{g/L}$ - Micrograms per liter
- ND< - Not detected at the given reporting limit



0 30 FEET
 APPROXIMATE SCALE

HANSON AGGREGATES
 7999 ATHEOUR WAY
 SUNOL, CALIFORNIA

CONCENTRATIONS OF TPHd, TPHg, AND MTBE IN GROUNDWATER FOR THE LIVERMORE FORMATION (SEPTEMBER 2010)

ARCADIS

FIGURE **9**



Appendix A

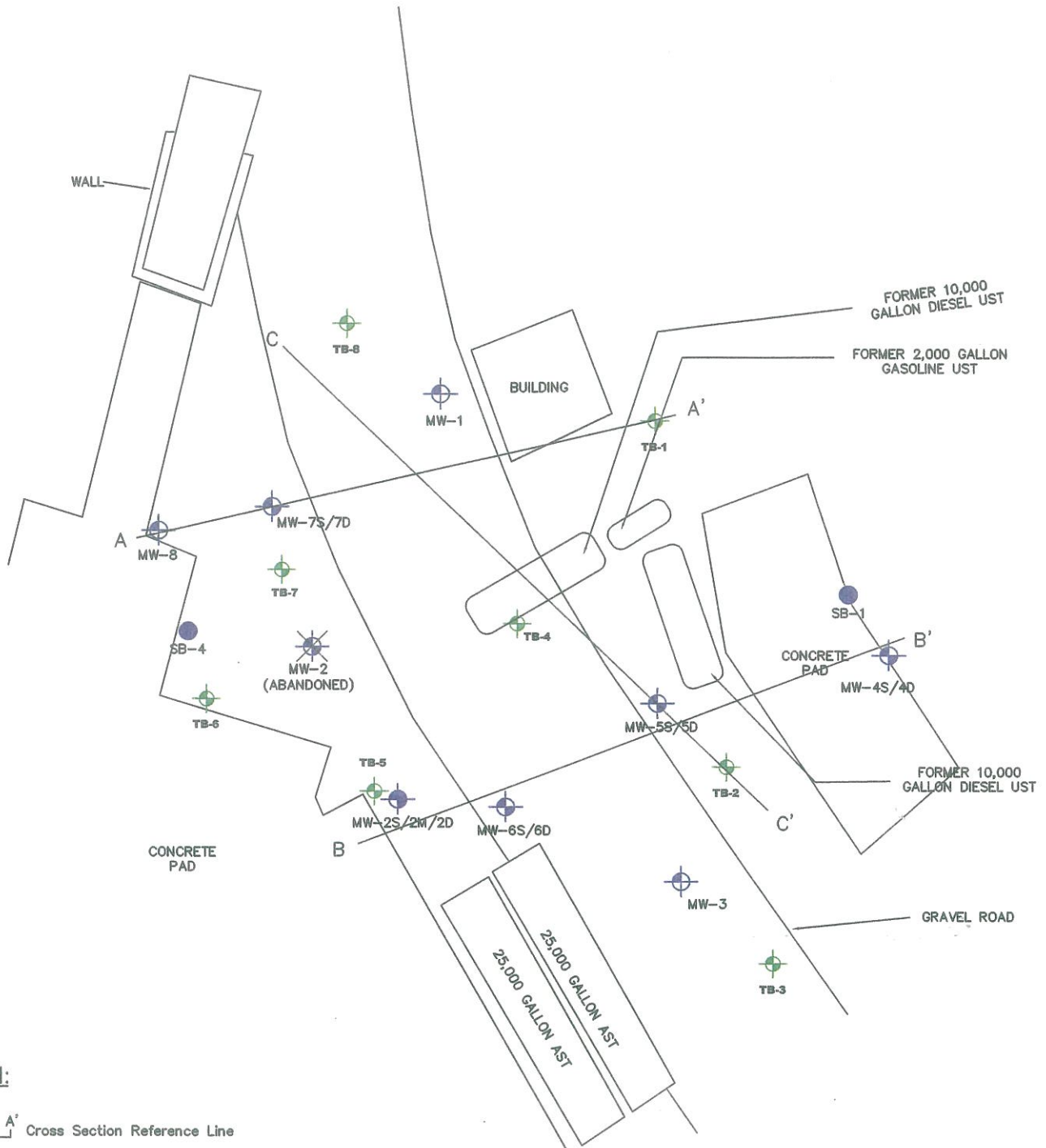
Historical Soil Data

**Summary Report
Environmental Activities**

Mission Valley Rock Company
7999 Athenour Way
Sunol, California






Prepared by:
Tait Environmental Management, Inc.

May 16, 2006



Legend:

A A' Cross Section Reference Line

-  Groundwater Monitoring Well - Single Completion
MW-1
-  Groundwater Monitoring Well - Dual Nested
MW-7S/7D
-  Groundwater Monitoring Well - Triple Nested
MW-2S/2M/2D
-  Abandoned Groundwater Monitoring Well
MW-2
-  Soil Boring
SB-1



SCALE: 1 INCH=30 FEET

 701 NORTH PARKCENTER DRIVE
SANTA ANA, CALIFORNIA 92705
(714) 580-8200
(714) 580-8235 FAX
ENVIRONMENTAL MANAGEMENT, INC.

**HISTORICAL SITE PLAN WITH
CROSS-SECTION REFERENCE LINES**
MISSION VALLEY ROCK
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009B

FIGURE 2

**TABLE 6
SOIL ANALYTICAL RESULTS - JANUARY 2005**

MISSION VALLEY ROCK
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

Sample ID	Date	Sample Depth (feet bgs)	Constituents (milligrams per kilogram)										
			TPH-D	TPH-G	Methyl-tert-Butyl Ether	Benzene	Toluene	Ethylbenzene	Total Xylenes	tert-Butanol	Di-isopropyl Ether	Ethyl-tert-Butyl Ether	tert-Amyl Methyl Ether
MW5-5	1/4/2005	5	ND<10	ND<1	ND<0.005	0.0043	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW5-10	1/4/2005	10	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW5-20	1/4/2005	20	ND<10	ND<1	ND<0.005	0.0038	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW2-5	1/4/2005	5	900	14	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.002	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW2-10	1/4/2005	10	740	15	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW2-15	1/4/2005	15	23	0.96	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW6-10	1/5/2005	10	78	6.8	0.0077	ND<0.005	ND<0.005	0.0044	0.0094	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW6-25	1/5/2005	25	12	1.2	0.024	0.0041	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW4-5	1/5/2005	5	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW4-10	1/5/2005	10	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW4-20	1/5/2005	20	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW2-30	1/5/2005	30	ND<10	ND<1	0.022	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
MW6-25	1/5/2005	25	17	5.4	0.047	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB1-5	1/6/2005	5	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB1-15	1/6/2005	15	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB1-20	1/6/2005	20	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB2-5	1/6/2005	5	ND<10	0.67	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB2-10	1/6/2005	10	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB2-15	1/6/2005	15	ND<10	0.86	ND<0.005	ND<0.005	ND<0.005	0.012	0.0273	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB2-23	1/6/2005	23	16	510	ND<0.005	ND<0.005	ND<0.005	9.7	14.86	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB2-26	1/6/2005	26	39	840	ND<0.005	ND<0.005	ND<0.005	10	16.4	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB3-5	1/6/2005	5	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB3-15	1/6/2005	15	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	0.0049	0.0107	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB3-20	1/6/2005	20	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB3-25	1/6/2005	25	ND<10	0.51	ND<0.005	0.03	ND<0.005	ND<0.005	0.0046	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB4-5	1/6/2005	5	190	42	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB4-10	1/6/2005	10	14	2.7	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB4-15	1/6/2005	15	ND<10	4.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB4-20	1/6/2005	20	17	2.7	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050
SB4-25	1/6/2005	25	ND<10	ND<1	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.10	ND<0.050	ND<0.050	ND<0.050

Notes:

bgs = Below Ground Surface

ND = Not detected at or above the indicated laboratory reporting limit.

TPH-D = Total Petroleum Hydrocarbons as Diesel

TPH-G = Total Petroleum Hydrocarbons as Gasoline

Concentrations of TPH-D and TPH-G reported using EPA Method No. 8015M.

Concentrations of Methyl-tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, Total Xylenes, tert-Butanol, Di-isopropyl Ether, Ethyl-tert-Butyl Ether, and tert-Amyl Methyl Ether reported using EPA Method No. 8260B.