

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2012-0095

**UPDATED SITE CLEANUP REQUIREMENTS and RESCISSION OF ORDER NO. 93-038
for:**

**EQUILON ENTERPRISES LLC doing business as (dba)
SHELL OIL PRODUCTS US (SHELL)**

For the:

**SAN JOSE TERMINAL
SAN JOSE, SANTA CLARA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Regional Water Board), finds that:

- 1. Site Location:** The San Jose Terminal (hereinafter referred to as the Facility or the Site) is located at 2165 O'Toole Avenue in the City of San Jose (Figure 1). The Facility is located in an industrial-commercial area of San Jose and is bordered by industrial properties to the north, south, and east, and by Coyote Creek to the west. One residence is located approximately 50 feet to the northwest of the Site.
- 2. Site Description:** The 9.6-acre Site is a petroleum product distribution terminal with four aboveground fuel storage tanks (ASTs), three additive ASTs, a below-grade transmix tank, an underground diesel storage tank (UST) and dispenser island, a four-lane fuel loading rack, three wastewater aboveground tanks, and several ancillary buildings (Figure 2).
- 3. Site Ownership and Discharger:** The Site is currently owned and operated by Equilon Enterprises LLC (Equilon) doing business as (dba) Shell Oil Products US (Shell). Equilon is the sole landowner and Facility operator and is hereinafter also named the Discharger.
- 4. Site History and Environmental Impacts:** Site operations began in the mid-1960s for local retail distribution. Several investigations to evaluate soil and groundwater conditions at the Facility have been conducted since the early 1980s. The results of these investigations indicate that Equilon discharged gasoline, diesel, fuel components benzene, toluene, ethylbenzene, xylene (BTEX), and fuel oxygenates [methyl-tertiary butyl ether (MTBE), and tert-butyl alcohol (TBA)], which have been detected in soil and groundwater beneath various portions of the Facility. Contaminated groundwater has migrated onto the adjacent property to the northwest, Conway Western Express, Inc.
- 5. Regulatory Status:** In November 1993, the Regional Water Board adopted Site Cleanup Requirements Order No. 93-038, which required investigation and remediation of onsite and potential offsite soil and groundwater contamination and required monitoring to demonstrate remediation performance.

- 6. Purpose of Order:** Equilon has discharged petroleum fuel hydrocarbons and oxygenates to soil and groundwater underlying the Facility and offsite. The petroleum fuel hydrocarbons, additives, and oxygenates have exceeded applicable water quality objectives for groundwater and could potentially threaten surface water quality in the adjacent Coyote Creek. The purpose of this Order is to require remediation of soil and groundwater contamination caused by releases from the Facility to a level that is protective of human and environmental health and beneficial uses of water resources, considering current and reasonable future land and water uses. This Order establishes appropriate cleanup standards and requires 1) performance monitoring to demonstrate remedial action effectiveness, 2) delineation of the plume boundary in groundwater beyond the Conway Western Express property to the northwest, 3) optimization of the groundwater monitoring well network, 4) establishment of trigger levels for potential offsite impacts and completion of a contingency plan should additional remedial measures become necessary, and 5) a monitoring program to provide an ongoing assessment of groundwater conditions and impacts from potential new releases at the Facility.
- 7. Geology:** The Site is located in the Santa Clara Valley between the Diablo Range to the east and the Santa Cruz Mountains to the west. The Site vicinity is underlain by the Santa Clara Formation of Pliocene-to-Holocene age continental deposits comprised of unconsolidated to semi-consolidated gravel, sand, silt, and clay. The lithology beneath the Site generally consists of silt, sandy silt, clayey sand, silty sand, sandy clay and clay between the ground surface and the total depth explored by the Discharger of 30.4 feet below the ground surface (bgs).
- 8. Hydrogeology:** The Site is located within the Santa Clara Subbasin of the Santa Clara Valley Groundwater Basin. Regionally and locally, there are two primary aquifer systems within the Santa Clara Subbasin. The shallow aquifer is unconfined and extends to a depth of approximately 200 feet. The deeper aquifer is generally confined in this area and extends from approximately 250 feet bgs to several hundred feet bgs. This portion of the Santa Clara Subbasin is underlain by an extensive clay aquitard at a depth of approximately 100 feet below grade that is 20 to 100 feet thick and generally precludes hydraulic communication between the two units. Shallow groundwater that has been impacted by Site activities is present beneath the Site at depths ranging from approximately 10 to 25 feet bgs. The predominant groundwater flow direction is to the northwest at gradients ranging from approximately 0.005 to 0.01 feet per foot.
- 9. Hydrology:** The closest surface water body is Coyote Creek, which borders the western portion of the Site. Water within the creek generally flows northward towards San Francisco Bay, approximately 10 miles to the northwest of the Site. Water levels in the creek typically range from 19 to 20.5 feet above mean sea level.
- 10. Stormwater Management:** Stormwater at the Facility is collected in six catch basins and discharged at three outfall locations around the Facility (Figure 3). The primary outfall receives flow from the terminal yard and the tank farm and discharges to Coyote Creek. This outfall valve is locked in the closed position until stormwater has been visually inspected. If the water quality appears acceptable, the valves are unlocked and, in the case of the tank farm, the sump pumps are manually activated to enable the discharge. Uncontaminated stormwater in the tank farm is usually allowed to percolate into the ground and/or evaporate; however, when the tank farm is near capacity levels, stormwater may be discharged to Coyote Creek. Stormwater collected from

the loading rack area is routed to an oil-water separator located northeast of the loading rack. Once separated, the water gets pumped into a tanker truck and hauled to the Shell refinery in Martinez for treatment.

11. Stormwater Monitoring: The Site operates under the National Pollutant Discharge Elimination System's (NPDES) Industrial Stormwater General Permit Order No. 97-03-DWQ (General Permit), which requires implementation of management measures that will achieve best conventional pollutant control. The General Permit also requires the development of a stormwater pollution prevention plan and a monitoring plan, which has been developed by Equilon and is reviewed annually. Equilon's monitoring plan includes best management practices for preventing pollution and removing pollutants from stormwater discharges.

Stormwater samples are collected from two locations on the Site prior to discharging to Coyote Creek, provided sufficient water is present: the terminal yard and the tank farm. No samples were collected from the tank farm area during the 2011-2012 wet season due to dry conditions. Samples collected from the terminal yard in October and November 2011 were analyzed for oil and grease and ethanol, as well as standard water quality parameters including total suspended solids, conductivity, and pH. In the past, Equilon analyzed stormwater for BTEX and MTBE. However, these analyses were discontinued for the terminal yard after the 2000 wet season and for the tank farm after the 2003 wet season due to low to non-detectable concentrations of each constituent. Equilon's policy to not resample for low to non-detectable constituents after two consecutive samplings is based on General Permit sections B.5.c.ii and B.5.c.iii.

Samples were collected from the stormwater holding tank (as shown in Figure 3). Results of the sampling are summarized in Table 1 below:

Table 1: Results of Stormwater Sampling Conducted in 2011

Terminal Yard		
	October 2011	November 2011
Oil and Grease (mg/L)	< 5.0	<5.7
Ethanol (µg/L)	<5.0	93

12. Remedial Investigation: Equilon has conducted numerous subsurface assessments to evaluate soil and groundwater conditions at the Site since 1983, some of which were in response to known spills and releases that occurred during tank filling and truck fueling operations or due to UST leaks. Known releases occurred in four main areas of the Site between 1972 and 1992: 1) within the tank farm near Tank 1200, 2) between tanks 320 and 260, 3) the vapor recovery unit, and 4) the transmix tank. Assessment activities included the installation of 25 groundwater monitoring wells, multiple soil borings, five soil vapor extraction wells, and a groundwater extraction (GWE) system. Tables 2 and 3 summarize the maximum contaminant concentrations in groundwater during the most recent three-year period (2010-2012) as measured in onsite and offsite wells, respectively. Figures 4A-E show the plume extent of diesel, gasoline, benzene, MTBE and TBA in groundwater at the onset of sampling for each particular analyte and the most

recent analytical results from 2012, respectively. Details of previous remedial investigation activities are presented in the Revised Feasibility Study and Corrective Action Plan, *CRA, August 13, 2012*.

Table 2: Maximum Contaminant Concentrations in Groundwater Measured in Onsite Monitoring Wells¹ (2010 through 2012)

Constituent	Contaminant Concentration (µg/l)	Basis
Gasoline (TPH-g)	32,000	MW-10 (Jan-10); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
Diesel Fuel (TPH-d)	48,000	MW-10 (Jan-12); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
Benzene	1,500	MW-10 (Nov-10); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
Toluene	32	MW-15 (Apr-11); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
Ethylbenzene	290	MW-15 (Apr-10); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
Xylenes	370	MW-15 (Apr-10); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
Methyl-tert Butyl Ether (MTBE)	21,000	MW-15 (Apr-10); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A
tert-Butyl Alcohol (TBA)	150,000	MW-10 (Nov-10); 2012 Semi-Annual Monitoring, and 2 nd Quarters, Appendix A

¹ Onsite wells include MWs: 1 through 15

Table 3: Maximum Contaminant Concentrations in Groundwater Measured in Offsite Monitoring Wells¹ (2010 through 2012)

Constituent	Contaminant Concentration (µg/l)	Basis
Gasoline (TPH-g) (C6-C12)	1,500	P-1 (Jan-10); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
Diesel Fuel (TPH-d) (C9-C25)	110	P-1 (May-12); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
Benzene	12	MW-19 (Jan-11); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
Toluene	<25	2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
Ethylbenzene	7.3	MW-19 (Jan-11); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
Xylenes	40	MW-19 (Jan-11); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
Methyl-tert Butyl Ether (MTBE)	1,900	MW-19 (Jan-11); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A
tert-Butyl Alcohol (TBA)	31,000	P-1 (Jan-12); 2012 Semi-Annual Monitoring, 1 st and 2 nd Quarters, Appendix A

¹Offsite wells include MWs: 17 through 25, and piezometer P-1.

13. Risk Assessment: Human and ecological health risks from exposure to impacted soil, groundwater, or associated vapors were assessed by comparison of contaminant levels to the Regional Water Board's May 2008 Environmental Screening Levels (ESLs) based on the current land use of the Facility and surrounding properties. This risk evaluation is presented in the August 2012 Feasibility Study/Corrective Action Plan (FS/CAP). This type of "tier 1" screening level risk assessment is appropriate for the Facility because ESLs are conservative indicators considering human and environmental exposure. Specific potential exposure pathways and/or receptors considered include: 1) direct Facility worker contact with soil contamination, 2) groundwater ingestion, 3) groundwater discharge into Coyote Creek and potential risk to ecological receptors and wildlife habitat, and 4) vapor intrusion from soil or groundwater. There is a residence within 50 feet of the Site; however, soil and groundwater concentrations detected in borings and monitoring wells near the residence indicate contaminants of concern (COCs) are below applicable ESLs. Therefore, vapor intrusion into that residence is not considered a complete exposure pathway. Findings suggest that there are currently no unacceptable risks for any of the other potential exposure pathways listed above, based on the current land use.

An updated and/or more detailed human and/or ecological health risk assessment will be required: 1) if data indicate that reasonable potential human or ecological exposures exist as determined by the Discharger or Regional Water Board staff, 2) upon presentation of a credible, specific reuse/redevelopment plan to Regional Water Board staff by the property owner for areas immediately adjacent to the Site where potential offsite impacts exist, or 3) upon any actual or proposed material change to the Facility as determined by the Discharger or Regional Water Board staff. The purpose of the risk assessment would be to identify risks to potential human or ecological receptors posed by petroleum fuel hydrocarbons discharged from the Facility both onsite and offsite, when applicable.

14. Corrective Action Plan: Several phases of remedial activities have been conducted at the Site since 1986 in response to documented releases of petroleum fuel hydrocarbons to soil and groundwater and to address the presence of separate phase hydrocarbons (SPH) in specific portions of the Site. Remedial actions have included UST removal and soil excavation, groundwater extraction, and soil vapor extraction. Historically, SPH has been detected at different times in wells MW-4 and MW-10; however, SPH has been absent in both monitoring wells since 2005. A detailed discussion of remedial actions is presented in the August 2012 FS/CAP.

Regional Water Board staff concurred with the FS/CAP in a letter dated September 5, 2012. The FS/CAP evaluated GWE, sulfate injection, air injection, ozone injection and monitored natural attenuation (MNA) as potential remedial technologies for the Site. Findings presented in the FS/CAP indicate:

- a) the GWE system that operated onsite from 1999 to 2008 did not demonstrate sufficient effectiveness to justify re-implementing extraction;
- b) aquifer characteristics and soil heterogeneities may inhibit an adequate volume of sulfate for injection;
- c) soil heterogeneities may also affect the dispersion of air; and

- d) ozone injection may be technically infeasible due to heterogeneous and low permeability soils.

The Discharger selected MNA as the preferred remedial alternative based on technical feasibility, the adequacy of environmental protection at and around the Site as determined by the absence or very low concentrations of COCs in perimeter monitoring wells, the distance of drinking water wells from the Site, and the low risk to sensitive receptors from site contaminants. The Regional Water Board agrees with this proposed remedial approach based on planned continued use of the Site as an active fueling facility.

15. Order Requirements: This Order establishes appropriate cleanup standards and requires:

- a) performance monitoring to demonstrate MNA effectiveness (Task #1),
- b) delineation of offsite contaminants in groundwater (Task #2),
- c) optimization of the monitoring well network (Task #3),
- d) trigger levels for potential offsite impacts (Task #4a) and completion of a contingency plan should additional remedial measures become necessary (Task #4b), and
- e) a monitoring program to provide an ongoing assessment of groundwater conditions and impacts from potential new releases at the Facility (Self-Monitoring Program, attached).

16. Basis for Cleanup Standards:

- a. **General:** State Water Resources Control Board (State Water Board) Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires the highest water quality consistent with the maximum benefit of the people.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304," applies to this discharge. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b. **Beneficial Uses:** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law where required.

Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region with limited exceptions for areas of high total dissolved solids, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the Site qualifies as a potential source of drinking water; however, the Santa Clara Valley Water District's (SCVWD) July 2001 *Groundwater Management Plan* states, "High mineral salt concentrations have been identified in the upper aquifer zone along San Francisco Bay..." and also indicates that manganese concentrations in the Upper Aquifer Zone of the Santa Clara Subbasin range from 120 to 769 µg/L, which

exceeds the Secondary Maximum Contaminant Level (SMCL) for drinking water of 50 µg/L. In addition, final conductivity measurements collected prior to sampling site wells in the fourth quarter of 2011 ranged from 517.4 to 2,312 microsiemens (µS). All conductance measurements except one exceeded the California Department of Public Health's (CDPH) recommended SMCL of 900 µS. The average conductivity measurement from site wells was 1,685 µS, which exceeds CDPH's upper limit SMCL of 1,600 µS.

The Site is located within the Santa Clara Valley Groundwater Basin, Santa Clara Subbasin, as defined in the Basin Plan. The Basin Plan designates the following existing and potential beneficial uses of groundwater in this basin, including underlying and adjacent to the Site, at depths greater than 150 feet bgs:

- 1) Municipal and domestic supply
- 2) Industrial process supply
- 3) Industrial service supply
- 4) Agricultural supply

However, as previously stated, shallow groundwater (from approximately 10-25 feet bgs) contains natural contaminants (manganese and high conductivity caused by salt water intrusion); therefore, shallow groundwater is unlikely to be used as a municipal or domestic supply.

Groundwater discharge to Coyote Creek occurs at different times of the year, based on measured shallow groundwater and surface water levels. Therefore, the shallow groundwater beneath the Site has the following potential beneficial uses as defined in the Basin Plan for Coyote Creek:

- 1) Freshwater replenishment to surface waters
- 2) Water contact recreation
- 3) Non-contact water recreation
- 4) Cold fresh water habitat
- 5) Wildlife habitat
- 6) Preservation of rare and endangered species
- 7) Fish migration and spawning

- c. **Basis for Groundwater Cleanup Standards:** The groundwater cleanup standards for the Site are based on applicable water quality objectives. Although no current beneficial use of the shallow groundwater-bearing zone in the Site vicinity has been identified, there are 19 water-producing wells within the deep water-bearing zone within a one-mile radius of the Site. According to SCVWD and the California Department of Water Resources, all water-producing wells in this area are screened in the confined aquifer below an extensive clay aquitard. Two of the wells are designated as active municipal/industrial water-supply wells, one is designated as an active irrigation well, one is designated as an active domestic supply well, three are designated as "standby" water-supply wells, and 12 are designated as "unknown status" water-supply wells. Six of these wells are located downgradient from the Site, 11 are located cross-gradient, and two are located upgradient. According to SCVWD, shallow groundwater is not generally used for drinking water (CRA, 2012). Therefore, the

groundwater cleanup standards for the Site are based on aquatic habitat goals and odor or nuisance values. Cleanup to these levels will protect existing and potential future beneficial uses of Coyote Creek.

- 17. Reuse or Disposal of Extracted Groundwater:** Regional Water Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.
- 18. Basis for 13304 Order:** CWC section 13304 authorizes the Regional Water Board to issue orders requiring the Discharger to cleanup and abate waste where the Discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.
- 19. Cost Recovery:** Pursuant to California Water Code Section 13304, the Discharger is hereby notified that the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
- 20. California Environmental Quality Act (CEQA):** The remedial option chosen for the Site is MNA, and no activities other than continued Site monitoring will be associated with the chosen remedy. Consistent with California Code of Regulations., title 14, § 15061(b)(3), the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where, as here, it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.
- 21. Notification:** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to update waste discharge requirements and has provided them with an opportunity to submit their written views and recommendations.
- 22. Public Hearing:** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the proposed waste discharge requirements for the Site.

IT IS HEREBY ORDERED, pursuant to CWC sections 13304 and 13267, that the Discharger shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. REMEDIAL ACTION PLAN AND CLEANUP STANDARDS

1. **Implement Corrective Action:** The Discharger shall implement corrective action as necessary to comply with the requirements of this Order.
2. **Groundwater Cleanup Standards:** Groundwater, on- and offsite, that is impacted by petroleum fuel hydrocarbons attributable to releases at the Site shall be cleaned up to the final standards identified by the Discharger in the FS/CAP, as accepted by Regional Water Board staff on September 5, 2012, presented below:

Constituent	Standard (µg/l)	Basis
TPHd	210	Aquatic habitat goal ¹
TPHg	210	Aquatic habitat goal
Benzene	46	Aquatic habitat goal
Toluene	130	Aquatic habitat goal
Ethylbenzene	43	Aquatic habitat goal
Xylenes	100	Aquatic habitat goal
MTBE	1,800	Ceiling Value ²
TBA	18,000	Aquatic habitat goal
Lead	2.5	Aquatic habitat goal

¹ Aquatic Habitat Goals can be found in the ESLs document Table B and F-1b, in Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater, Regional Water Board, Interim Final – November 2007 [Revised May 2008].

² Ceiling Value is based on an odor threshold, half the solubility or 50,000 µg/L maximum, whichever is lower. Intended to limit nuisances and general resource degradation.

C. TASKS

1. **Implementation of Feasibility Study/Corrective Action Plan (FS/CAP) and Self-Monitoring Program (SMP):** The Discharger shall immediately begin collection and review of bioparameter data to evaluate subsurface biological conditions as proposed in the FS/CAP, although the remedial actions may be subsequently revised. At a minimum, implementation of remedial actions shall be demonstrated through compliance with the SMP attached to this Order and as may be revised by the Executive Officer. The SMP is designed to collect information necessary

to evaluate the potential migration of COCs associated with known releases at the Site and the effectiveness of remedial actions implemented to address those releases. The SMP may be revised at the discretion of the Executive Officer, as necessary to better evaluate Site conditions, discharges, and remedial action effectiveness.

COMPLIANCE DATE: Upon adoption of Order

2. **Delineation of Offsite Groundwater Plume:** The Discharger shall submit a technical report, acceptable to the Executive Officer, which evaluates the extent of petroleum hydrocarbon and fuel additive impacts to groundwater northwest of the Facility. Impacted groundwater has been detected beneath the adjacent Conway Western Express property and at the northwest property boundary of the adjacent business park. The report shall identify the lateral extent of contaminated groundwater and, if necessary, propose containment and remediation options to mitigate offsite impacts.

COMPLIANCE DATE: March 30, 2013

3. **Optimization of Monitoring Well Network:** The Discharger shall submit a technical report, acceptable to the Executive Officer, which evaluates and optimizes the location, condition, and effectiveness of all monitoring wells that comprise the Site groundwater monitoring network. The evaluation shall consider well location, total well depth, screen interval, as well as the total number and spatial distribution of wells in terms of providing adequate monitoring data for plume monitoring and remediation effectiveness evaluation. The report shall propose destruction, repair, and/or replacement of any wells that are damaged, improperly screened, or poorly located. The report shall also propose construction of any new wells necessary to provide sufficient monitoring data needed to adequately perform the tasks specified in this Order.

COMPLIANCE DATE: May 30, 2013

- 4a. **Trigger Levels for Potential Offsite Impacts:** The Discharger shall submit a technical report, acceptable to the Executive Officer, which proposes concentration limits for petroleum fuel hydrocarbons and/or fuel additives in groundwater, which will serve as triggers for additional remediation (note that these are not the cleanup goals listed in section B.2 above).

Trigger levels are meant to apply to groundwater impacts, at the Facility boundary and near Coyote Creek (such as monitoring wells MW-1, MW-7, MW-9, MW-11, MW-13 and MW-15) and offsite (such as monitoring wells MW- 22, MW-23, and MW-25) on the Conway Western Express property to the northwest, which are attributable to releases at the Facility. At a minimum, trigger levels shall be based on the magnitude of contaminant concentrations in groundwater at the Facility boundary and offsite for the most recent three-year period. Trigger levels shall be set at a level, which when exceeded, is a strong indication of a new release or significant change in Site conditions or plume behavior. Trigger levels shall be re-evaluated every three years as long as groundwater impacts, attributable to releases at the Facility, exceed cleanup standards. The report shall identify specific monitoring wells where trigger levels will apply and shall propose procedures, such as immediate Regional Water Board staff notification, and re-sampling to be used as confirmation of a trigger level exceedance. A confirmed

exceedance of a trigger level shall be followed by bi-monthly or more frequent sampling of the suspect monitoring well for at least one year, or until constituent concentrations drop below trigger levels for three consecutive bi-monthly sampling events.

COMPLIANCE DATE: July 30, 2013, then every three years thereafter

- 4b. **Contingency Remediation Plan:** In the event that a trigger level is exceeded for any three of six consecutive bi-monthly sampling events, including the initial sample exceedance, the Discharger shall submit a technical report, acceptable to the Executive Officer, which proposes a contingency remediation plan. The contingency remediation plan shall identify the source of the exceedance and shall propose a method for active source control and/or cleanup. The contingency remediation plan shall also propose a method to control and/or cleanup all impacts in excess of trigger levels at the Facility boundary and offsite for impacts attributable to the Facility, regardless if a new source is identified.

COMPLIANCE DATE: 60 days after third confirmed exceedance

5. **Remedial Action Effectiveness Evaluation:** The Discharger shall submit a technical report, acceptable to the Executive Officer, which evaluates the effectiveness of all remedies implemented at the Site to contain and/or cleanup contamination or contaminated media such as soil and groundwater, addressed by this Order. At a minimum, demonstration of remedial action effectiveness shall be based on adequately measured soil, geologic, hydrologic, and water quality parameters, including contaminant concentrations and water levels, and on appropriately calculated hydraulic, pressure, and chemical gradients, as necessary. The remedial action effectiveness evaluation shall also address the following:
- a) Summary of effectiveness in controlling contaminant migration and protecting human health and the environment;
 - b) Comparison of contaminant concentration trends with cleanup standards;
 - c) Remediation performance data (e.g., contaminant mass removed or destroyed, volume and mass of separate-phase product removed, volume of groundwater extracted, mass removed per million gallons extracted, mass flux reduction);
 - d) Cost effectiveness data (e.g., total cost, cost per unit mass of contaminant removed or destroyed, cost per unit mass flux reduction);
 - e) Summary of additional investigations (including results) and significant modifications to remediation systems; and
 - f) Additional remedial actions proposed to meet cleanup standards (if applicable) including a time schedule for implementing such actions.

The remedial action effectiveness evaluation shall include a visual presentation of the full current extent of groundwater impacts, in excess of established cleanup standards, using posted contaminant concentrations next to each well or point where measured. For remediation by natural attenuation, which relies on intrinsic biodegradation, remedial action effectiveness shall be based on established spatial and temporal trends of contaminant concentrations and indicator parameters. At a minimum, indicator parameters for intrinsic biodegradation in groundwater (aerobic and anaerobic) shall include dissolved oxygen, nitrate, sulfate, ferrous iron, methane, carbon dioxide, oxygen-reduction (redox) potential, Total Kjeldahl Nitrogen, phosphate, and pH.

The following data presentation methods shall be used to demonstrate spatial and temporal trends of contaminant concentrations and indicator parameters:

- a) Figures showing the current and historic extent of contamination,
- b) Graphs showing current and historic contaminant concentrations and water levels versus time in the direction of groundwater flow and at plume boundaries,
- c) Graphs showing current and historic contaminant concentrations versus distance in the direction of groundwater flow,
- d) Figures showing the current and historic spatial distribution of indicator parameters for intrinsic biodegradation,
- e) Graphs showing current and historic indicator parameter concentrations versus time in the direction of groundwater flow and at plume boundaries, and
- f) Graphs showing current and historic indicator parameter concentrations versus distance in the direction of groundwater flow.

In addition, the remedial action effectiveness evaluation shall estimate the time to reach cleanup standards in groundwater, both onsite and offsite, using regression analysis of temporal contaminant concentration trends. The evaluation must evaluate whether other feasible and implementable remedial methods might significantly accelerate the attainment of cleanup standards.

COMPLIANCE DATE: January 30, 2015, and every three years thereafter

6. **Risk Assessment:** When required, the Discharger shall submit a technical report, acceptable to the Executive Officer, which contains a human and/or ecological health risk assessment (risk assessment). An updated and/or more detailed human and/or ecological health risk assessment will be required: 1) if data indicate that reasonable potential human or ecological exposures exist as determined by the Discharger or Regional Water Board staff, 2) upon presentation by the property owner of a credible, specific reuse and/or redevelopment plan to Regional Water Board staff and the Discharger for areas immediately adjacent to the Site where offsite impacts may exist, or 3) upon any actual or proposed material change to the Facility as determined by the Discharger or Regional Water Board staff. The purpose of the risk assessment would be to identify risks to potential human or ecological receptors posed by petroleum fuel hydrocarbons discharged from the Facility both onsite and offsite, when applicable.

COMPLIANCE DATE: 90 days after trigger

7. **Proposed Curtailment:** Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes monitoring program reduction or termination (e.g., abandonment of some or all monitoring wells). The report should include the rationale for curtailment. Proposals for final closure shall demonstrate that cleanup standards have been met, contaminant concentrations are stable, and contaminant migration potential is minimal.

COMPLIANCE DATE: 60 days prior to proposed curtailment

8. **Implementation of Curtailment:** Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 7.

COMPLIANCE DATE: 60 days after Executive Officer approval

9. **Evaluation of New Health-Based Criteria:** Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising one or more cleanup standards in response to any revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

COMPLIANCE DATE: 90 days after requested by Executive Officer

10. **Evaluation of New Technical Information:** Submit a technical report acceptable to the Executive Officer evaluating new technical information that bears on the approved remedial action plan and cleanup standards for this Site. In the case of a new cleanup technology, the report shall evaluate the technology using the same criteria used in the feasibility study. Such technical reports will not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup standards.

COMPLIANCE DATE: 90 days after requested by Executive Officer

11. **Delayed Compliance:** If the Discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Discharger shall promptly notify the Executive Officer, and the Regional Water Board or the Executive Officer may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in CWC section 13050(m).
2. **Operations and Maintenance:** The Discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Cost Recovery:** The Discharger is liable, pursuant to CWC section 13304, to the Regional Water Board for all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records:** The Discharger shall permit the Regional Water Board or its authorized representative:
 - a) Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b) Access to copy any records required to be kept under the requirements of this Order.
 - c) Inspection of any monitoring or remediation facilities installed in response to this Order.
 - d) Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Discharger.

5. **Contractor / Consultant Qualifications:** All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

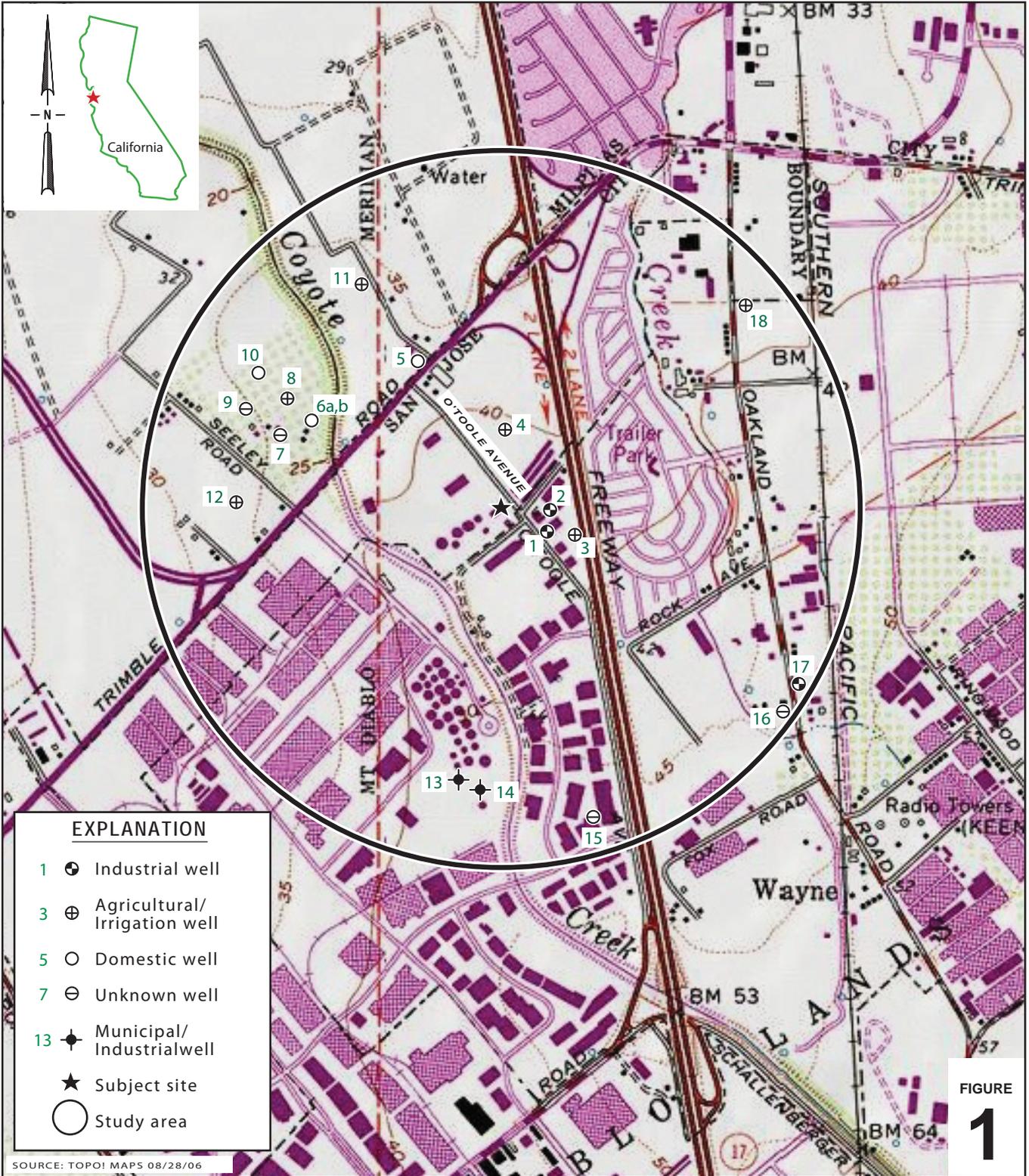
6. **Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Regional Water Board using approved U.S. EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Regional Water Board review. This provision does not apply to analyses that can only reasonably be performed onsite (e.g., temperature).

7. **Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies. The Executive Officer may modify this list as needed:
 - a) Regional Water Board
 - b) City of San Jose
 - c) Santa Clara County Department of Environmental Health
 - d) Santa Clara Valley Water District

8. **Electronic Reporting:** All reports submitted pursuant to this Order shall be submitted as electronic files in PDF format. The Regional Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Regional Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures & tables.

Upon request by Regional Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel[®] or similar spreadsheet format. This format facilitates data computations and/or plotting that Regional Water Board staff may undertake during their review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public review as long as a PDF version is included.

All electronic files shall be submitted via the Regional Water Board's Geotracker website, email (only if the file size is less than 3 MB) or on CD. CD submittals may be included with a print



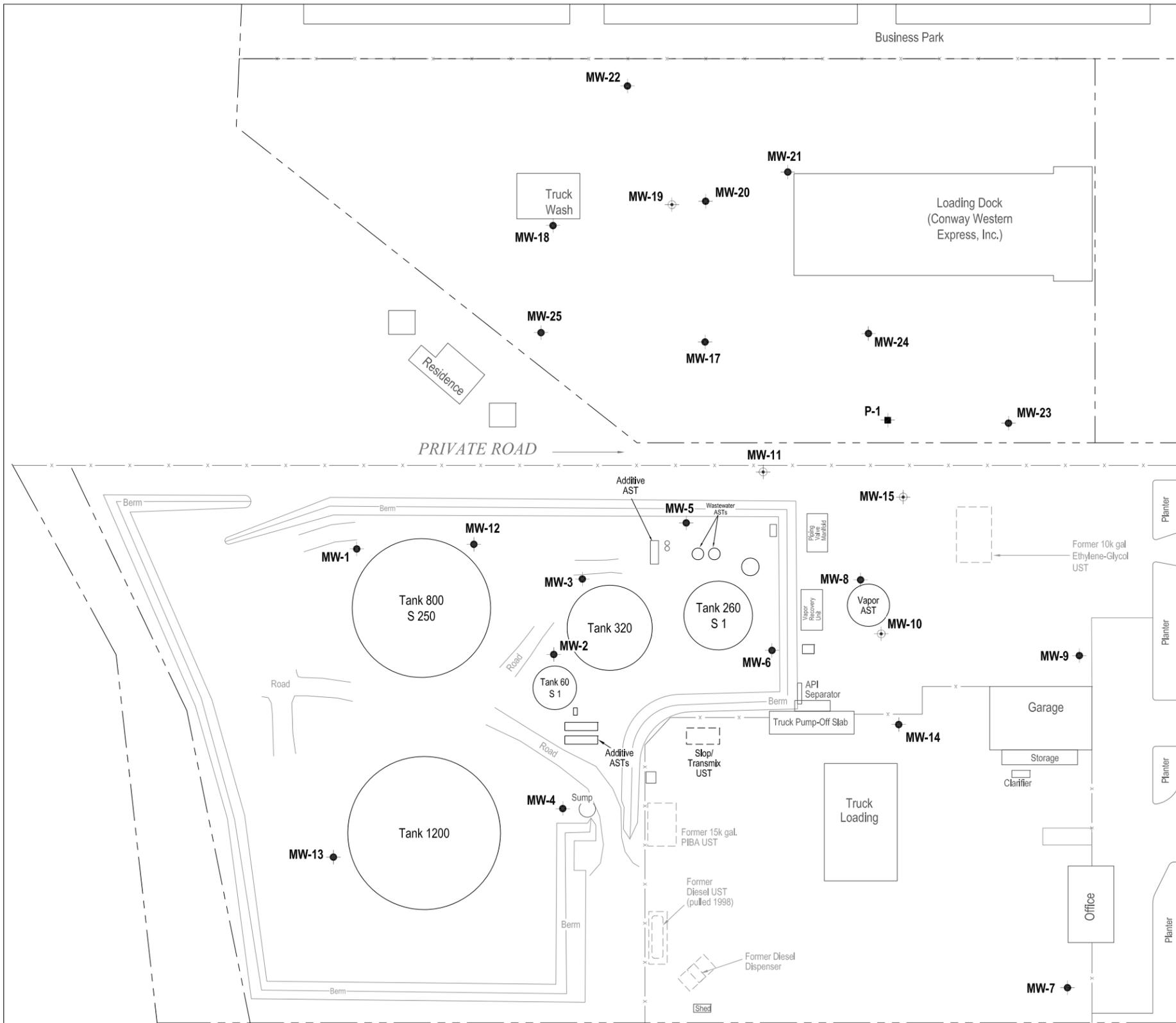
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Shell San Jose Terminal
 2165 O'Toole Avenue
 San Jose, California



**CONESTOGA-ROVERS
& ASSOCIATES**

Site Location Map



LEGEND

- MW-1 ● Groundwater monitoring well location
- P-1 ■ Piezometer well location
- MW-10 ⊕ Groundwater extraction well location

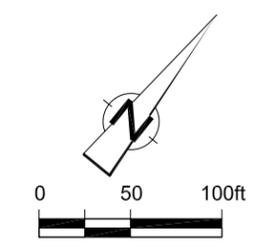
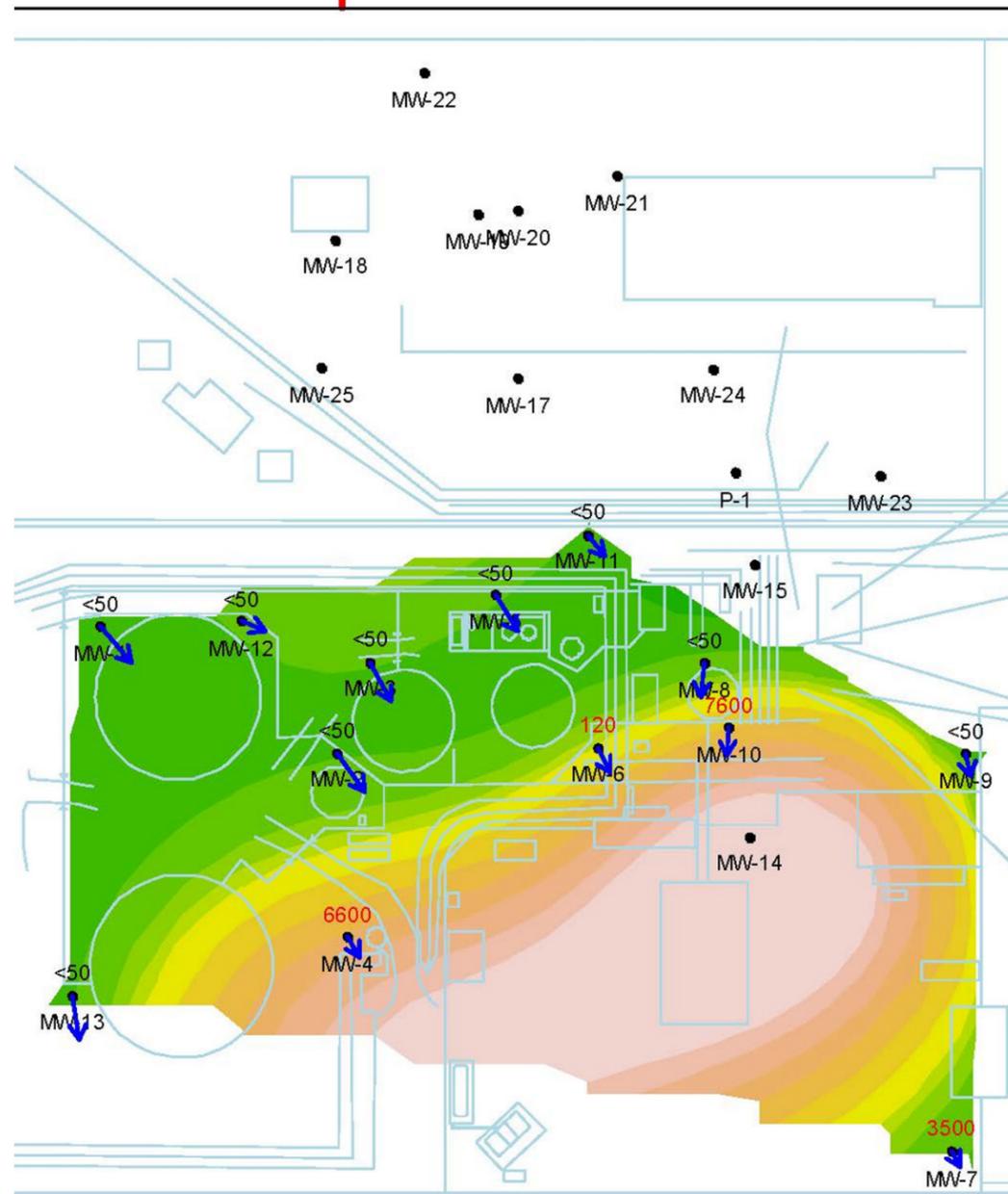


Figure 2
 Groundwater Monitoring Locations
 Shell San Jose Terminal
 2165 O'Toole Avenue
 San Jose, California



TPHd : 11-Nov-1993 to 10-Feb-1994



TPHd : 11-Nov-2011 to 10-Feb-2012

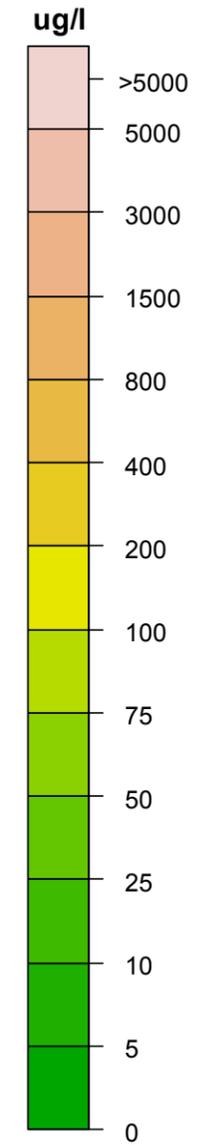
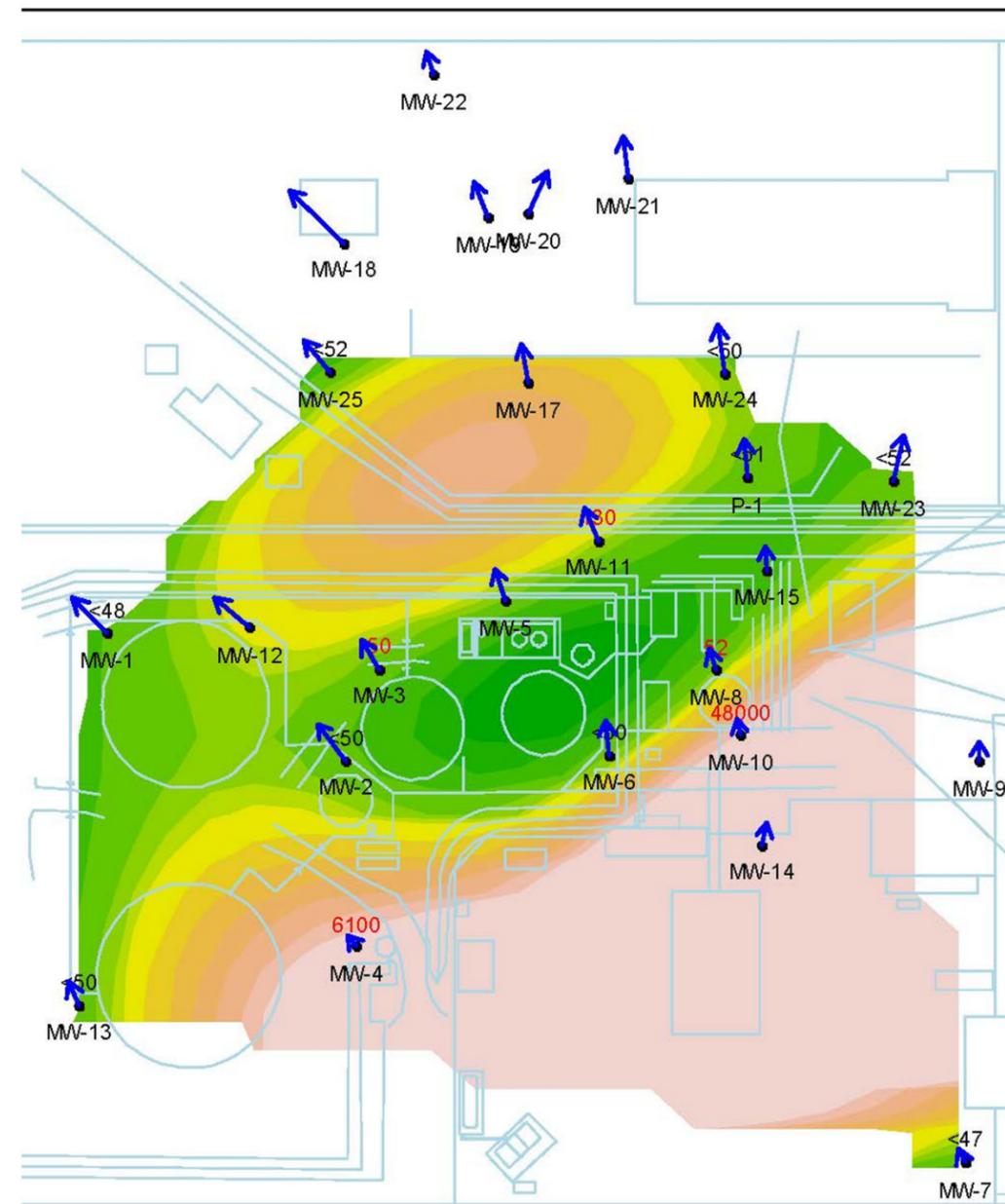


Figure
4A

TPHd in Groundwater
Shell San Jose Terminal
2165 O'Toole Avenue
San Jose, California

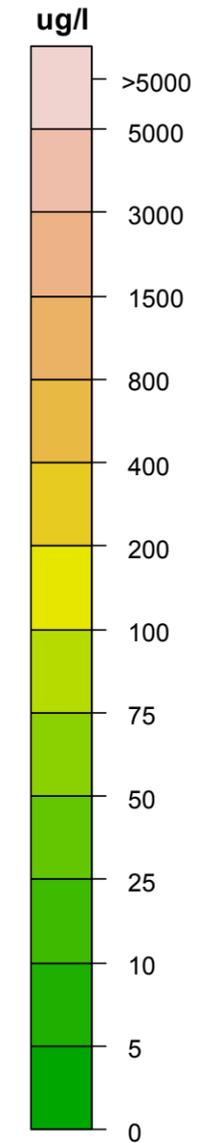
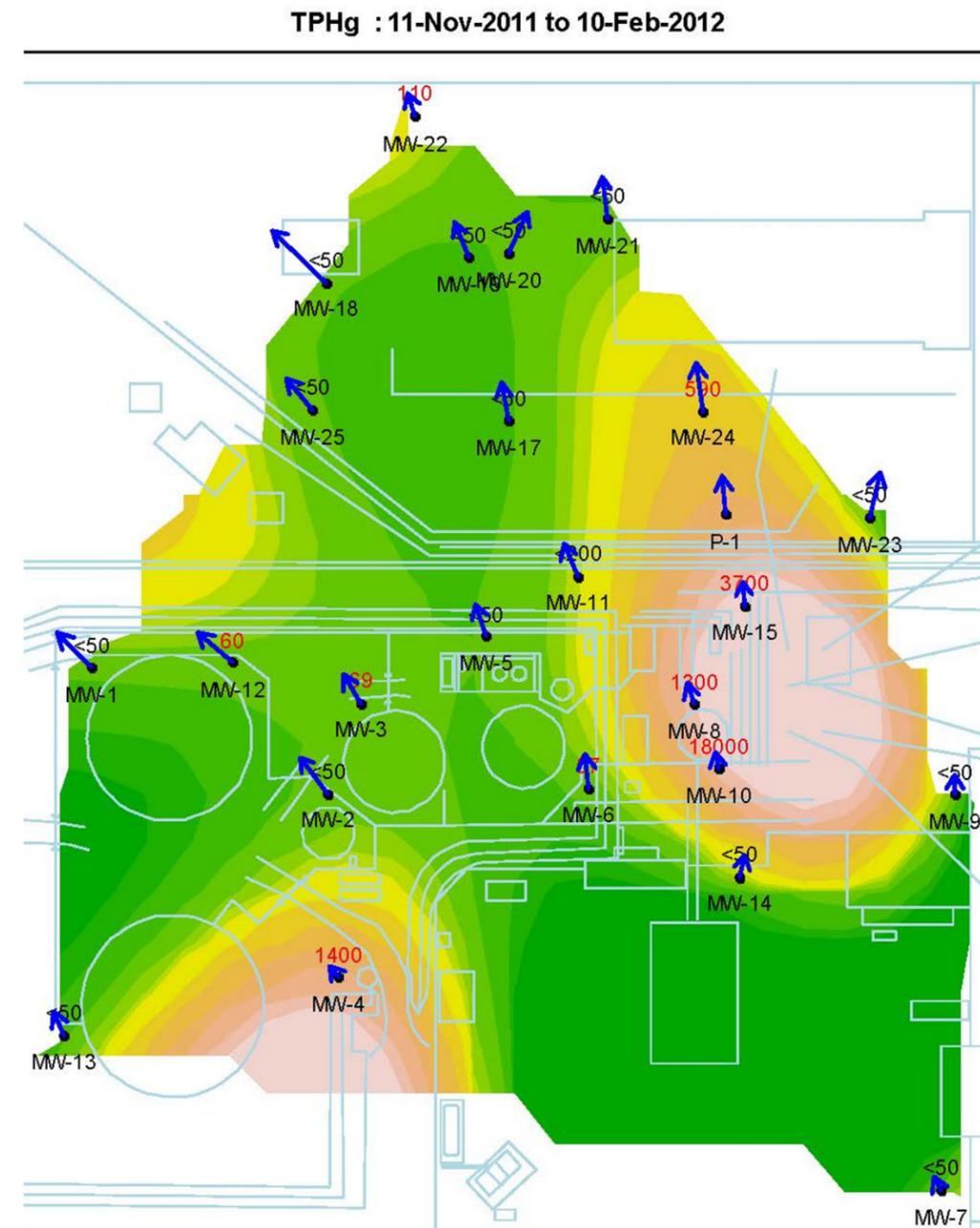
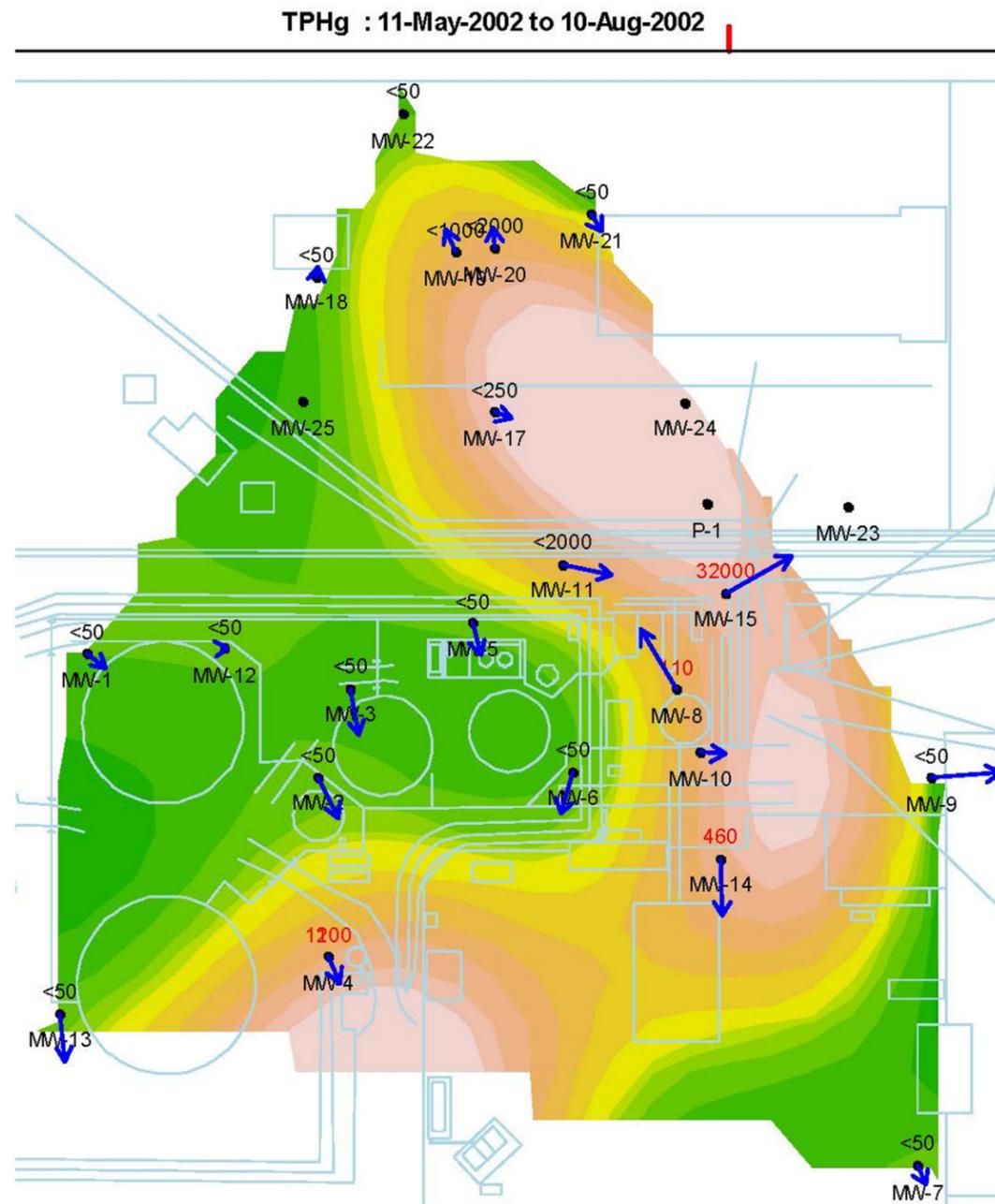
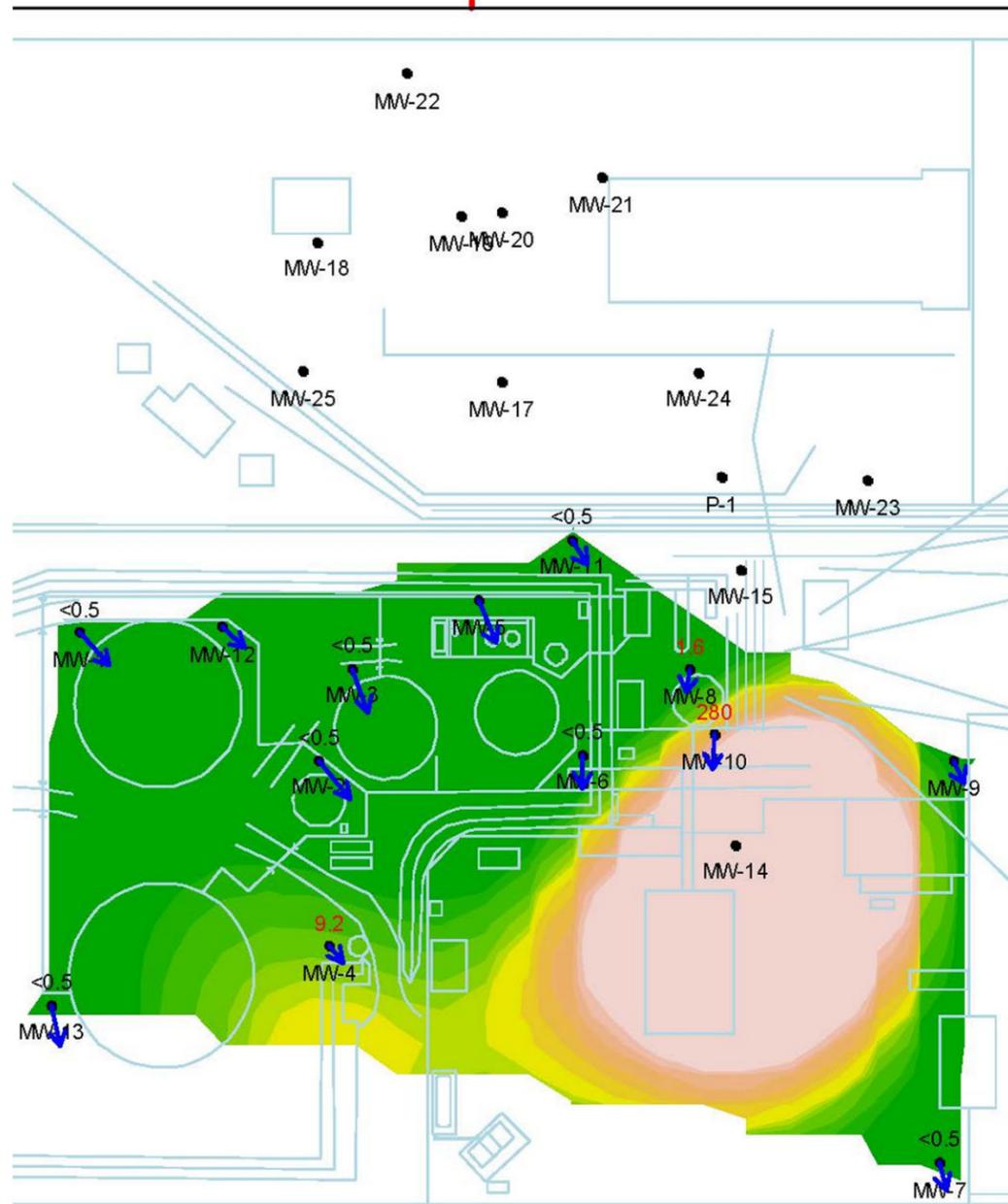


Figure
4B

TPHg in Groundwater
Shell San Jose Terminal
2165 O'Toole Avenue
San Jose, California



Benzene : 11-Nov-1996 to 10-Feb-1997



Benzene : 11-Nov-2011 to 10-Feb-2012

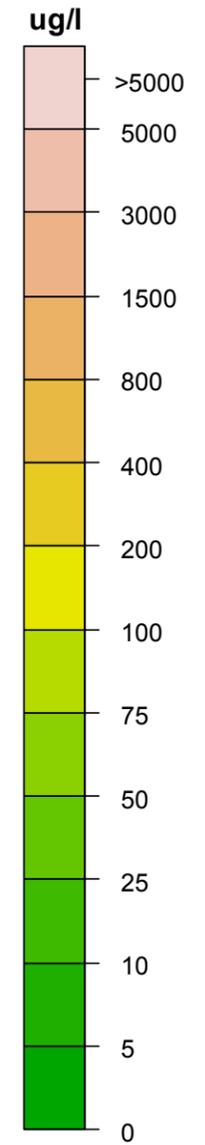
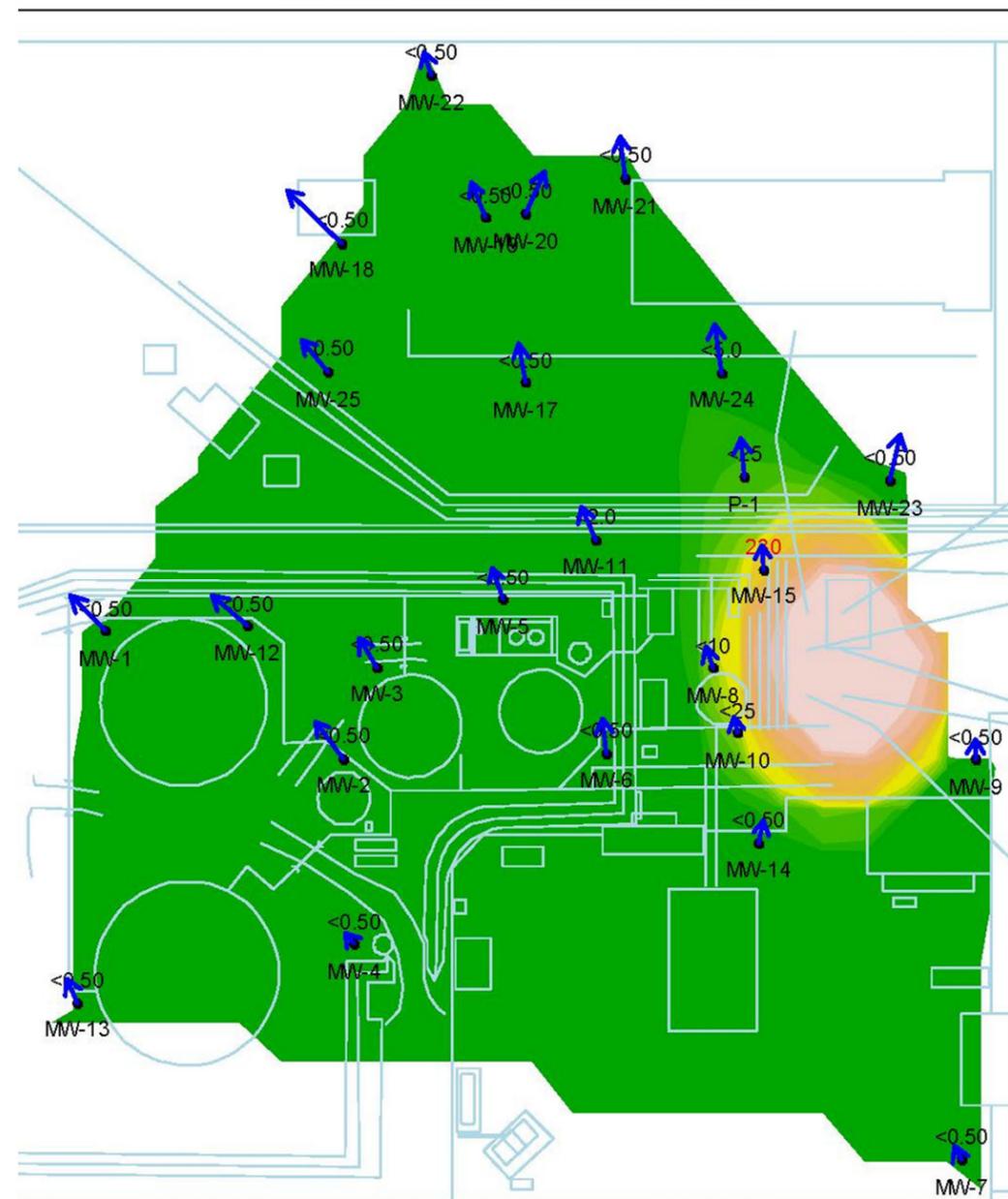


Figure
4C

Benzene in Groundwater
Shell San Jose Terminal
2165 O'Toole Avenue
San Jose, California



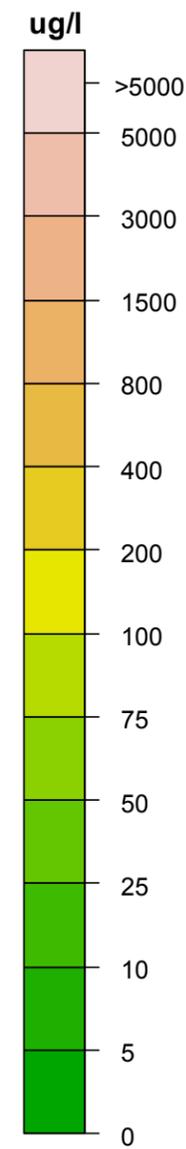
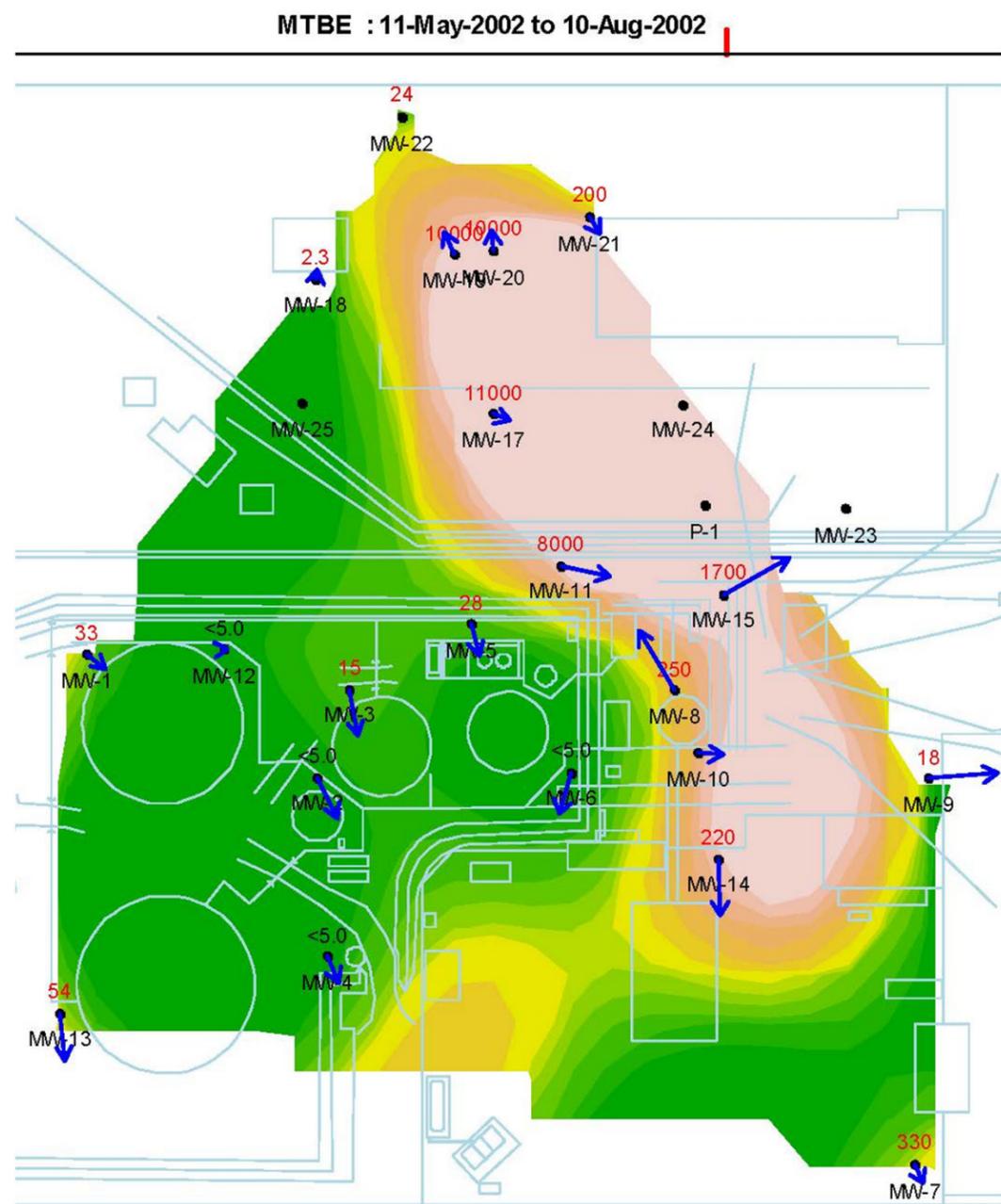


Figure
4D

MTBE in Groundwater
Shell San Jose Terminal
2165 O'Toole Avenue
San Jose, California



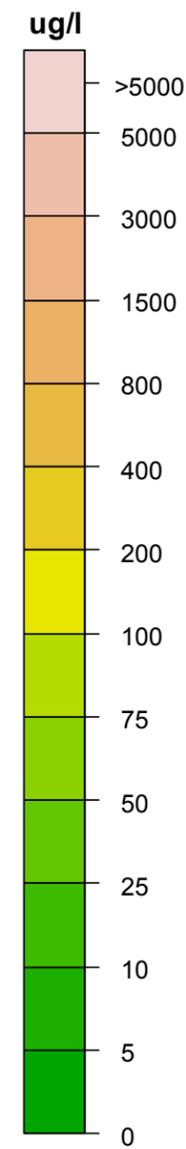
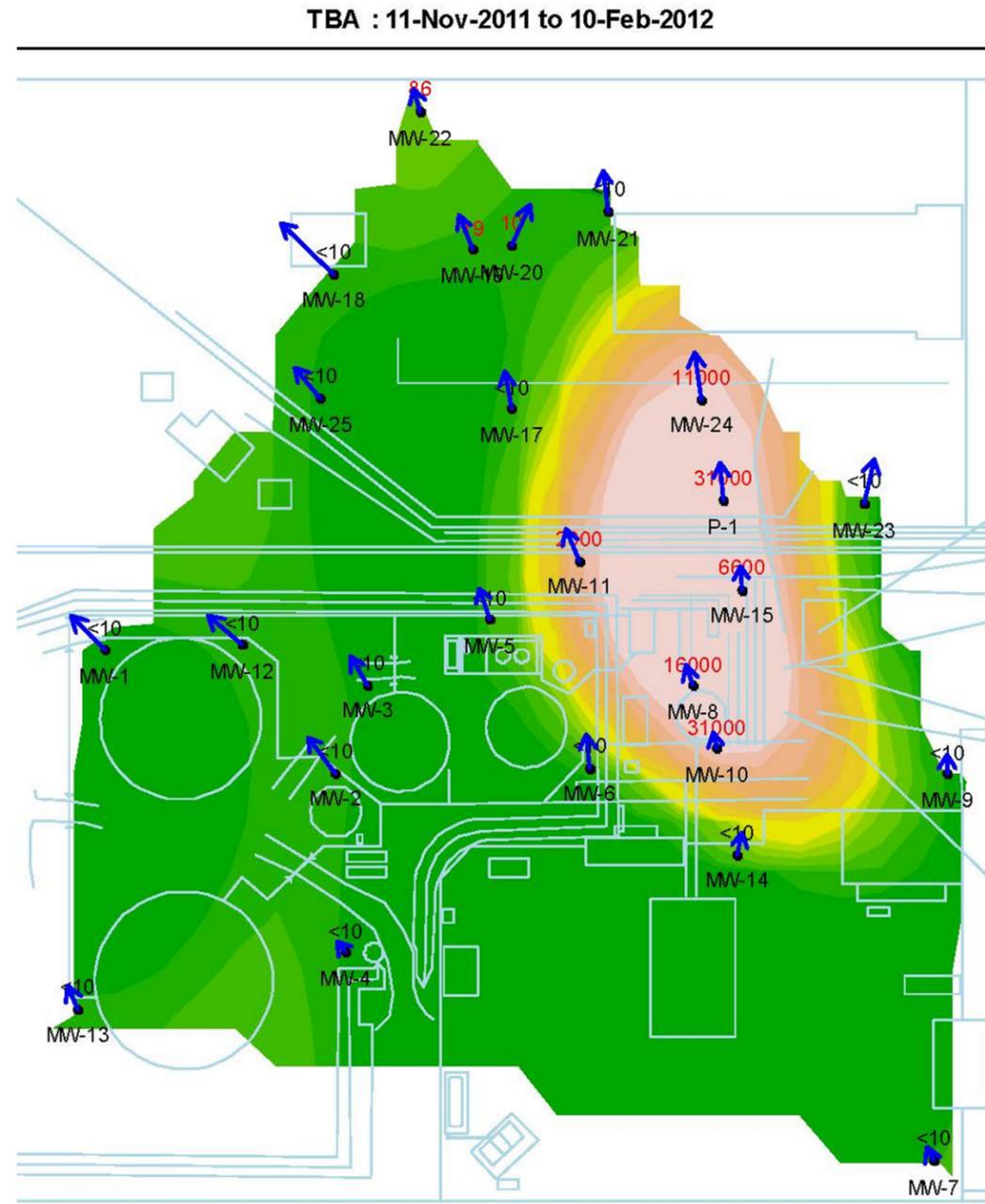
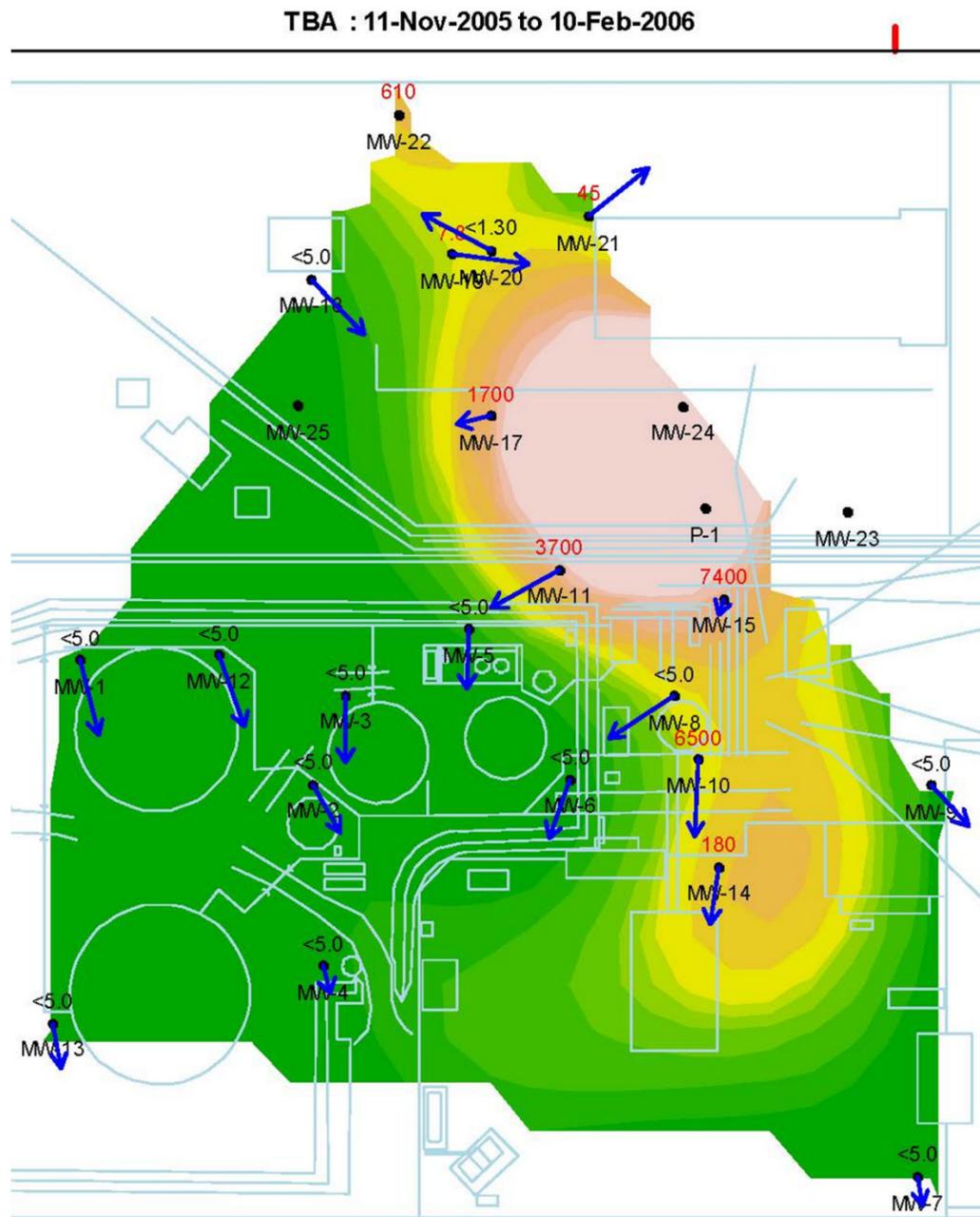


Figure
4E

TBA in Groundwater
Shell San Jose Terminal
2165 O'Toole Avenue
San Jose, California



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for
SITE CLEANUP REQUIREMENTS ORDER No. R2-2012-0095
EQUILON ENTERPRISES LLC dba
SHELL OIL PRODUCTS US (SHELL)

For the:

SHELL SAN JOSE TERMINAL
SAN JOSE, SANTA CLARA COUNTY

1. **Authority and Purpose:** The Regional Water Board requests the technical reports required in this Self-Monitoring Program (SMP) pursuant to CWC sections 13267 and 13304. This SMP is intended to document compliance with Order No. R2-2012-0095.
2. **Monitoring Requirements:** The Discharger shall perform monitoring (water level measurement, observations, and analytical sampling) according to Table SMP-1, which specifies monitoring location ID, frequencies, parameters, and analytes. Monitoring locations are shown in Figure SMP-1. The Discharger shall sample any new monitoring wells quarterly and analyze groundwater samples for the same constituents as shown in Table SMP-1. The Discharger may propose changes in the below table; any proposed changes are subject to Executive Officer approval.
3. **Reporting Requirements:** The Discharger shall submit self-monitoring reports (SMRs) to Regional Water Board staff in accordance with the following schedule. Reports due at the same time may be combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable.

Reporting Frequency	Report Due Dates
Semi-Annual	February 15, August 15

At a minimum, each SMR shall include the following information:

- a. **Transmittal Letter:** A cover letter transmitting the essential points shall be included with each SMR. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall also certify the completion of all monitoring requirements. The letter shall be signed by the Discharger's principal executive officer, or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
- b. **Graphic Presentation:** The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:

- (1) Plan-view maps showing all monitoring and sampling locations, surface water bodies, and the Site's boundaries;
 - (2) Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing calculated groundwater gradients and flow directions under/around the Site, based upon the past and present water level elevations and pertinent visual observations;
 - (3) Post-plot maps with analyte concentration posted adjacent to each sampling location and/or iso-concentration contour maps displaying analyte concentrations and sample locations;
 - (4) Concentration vs. time graphs for key sampling parameters for select sampling locations; and
 - (5) Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this SMP.
- c. **Tabular Presentation:** The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow quick and easy reference:
- (1) Well designations
 - (2) Well location coordinates (latitude and longitude)
 - (3) Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation)
 - (4) Groundwater depths
 - (5) Groundwater elevations
 - (6) Horizontal groundwater gradients
 - (7) Vertical groundwater gradients (including comparison wells from different zones) when appropriate
 - (8) Phase-separated product elevations
 - (9) Phase-separated product thicknesses
 - (10) Current analytical results (including analytical method and detection limits for each constituent)
 - (11) Historical analytical results (including at least the past five years unless otherwise requested)
 - (12) Measurement dates
 - (13) Groundwater extraction, including:
 - (a) Average daily extraction rate
 - (b) Total volume extracted for monitoring period
 - (c) Cumulative total volume extracted since system inception
 - (14) Contaminant mass removal, including:
 - (a) Average daily removal rate
 - (b) Total mass removed for monitoring period
 - (c) Cumulative total mass removed since system inception

- d. **Discussion:** Discussion of the following information, based on field and laboratory data results, shall be provided in each SMR:
 - (1) Data Interpretations
 - (2) Conclusions
 - (3) Recommendations
 - (4) Newly implemented or planned investigations & remedial measures
 - (5) Data anomalies
 - (6) Variations from protocols
 - (7) Condition of wells
 - (8) Explanation why monitoring could not be performed at any required location

- e. **Appendices:** The following information shall be provided as appendices in electronic format (PDF format). Hard copies of the following information should be submitted only if requested by Regional Water Board staff:
 - (1) New boring and well logs
 - (2) Method and time of water level measurements (field data sheets)
 - (3) Purging methods and results including the type of pump used, pump placement in the well, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity, calibration of the field equipment, pH, temperature, conductivity, and turbidity measurements, and method of disposing of the purge water
 - (4) Sampling procedures, field and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations
 - (5) Documentation of laboratory results, analytical methods, detection limits, and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

4. **Violation Reports:** If the Discharger violates requirements in the Site Cleanup Requirements, then the Discharger shall notify the Regional Water Board office by telephone as soon as practicable once the Discharger has knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the Discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports:** The Discharger shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for Site investigation.

6. **Record Keeping:** The Discharger or its agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Regional Water Board upon request.

7. **SMP Revisions:** Revisions to this SMP may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Discharger. Prior to making SMP revisions, the

Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

8. **Electronic Reporting:** All SMRs submitted pursuant to this SMP shall be submitted as electronic files in PDF format. The Regional Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Regional Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures and tables.

Upon request by Regional Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel[®] or similar spreadsheet format. This format facilitates data computations and/or plotting that Regional Water Board staff may undertake during their review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public review as long as a PDF version is included.

All electronic files shall be submitted via the Regional Water Board's Geotracker website (<http://geotracker.waterboards.ca.gov>). Files may additionally be sent via email (only if the file size is less than 3 MB) or on CD. CD submittals may be included with a print report. Email notification should be provided to Regional Water Board staff whenever a file is uploaded to Geotracker.

9. **Maintenance of Written Records:** The Discharger shall maintain information required pursuant to this SMP for at least five years. The five-year period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Water Board.

Attachments: Table SMP-1
Figure SMP-1

**Table SMP-1
Shell San Jose Terminal, Self-Monitoring Program**

Well ID	Well Construction Details				Monitoring Parameters and Frequency								
	date installed	well depth	well elevation	screen interval	Water Level	TPH-d ⁽¹⁾	TPH-g ⁽²⁾	BTEX ⁽³⁾	MtBE ⁽⁴⁾	Fuel Oxygenates ⁽⁵⁾	TBA ⁽⁶⁾	Field ⁽⁷⁾	Dissolved Lead ⁽⁸⁾
		fbgs	ft, MSL	fbgs									
GROUNDWATER													
MW-1	Mar-88	29.3	40.28	19.9	Q	A-4	A-4	A-4	A-4	--	--	A-4	A-4
MW-2	Mar-88	29.3	40.26	20.3	TO BE DESTROYED								
MW-3	Mar-88	29.3	39.92	20.3	DESTROYED								
MW-4	Mar-88	29.6	39.94	20.3	Q	SA-2,4	SA-2,4	A-4	A-4	--	--	A-4	--
MW-5	Mar-88	29.4	40.36	20.3	TO BE DESTROYED								
MW-6	Mar-99	30.4	38.94	20.3	Q	A-4	--	--	A-4	--	--	A-4	A-4
MW-7	Mar-88	30.2	38.73	20.3	Q	A-4	A-4	A-4	A-4	--	A-4	A-4	--
MW-8	Mar-88	29.8	40.06	20.3	Q	SA-2,4	SA-2,4	A-4	Q	A-4	Q	A-4	--
MW-9	Mar-88	29.7	39.41	20.3	Q	--	A-4	A-4	A-4	--	A-4	A-4	--
MW-10	Nov-89	30	41.69	20	Q	Q	Q	Q	Q	A-4	Q	Q	SA-2,4
MW-11	Nov-89	30	39.33	20	Q	A-4	SA-2,4	A-4	SA-2,4	A-4	SA-2,4	A-4	SA-2,4
MW-12	Nov-89	29	39.29	20	TO BE DESTROYED								
MW-13	Sep-93	28	38.74	20	Q	A-4	A-4	A-4	A-4	--	A-4	A-4	A-4
MW-14	May-02	25	38.89	15	Q	--	A-4	A-4	A-4	--	A-4	A-4	--
MW-15	May-02	30	38.57	15	Q	--	Q	Q	Q	A-4	Q	A-4	--
MW-17	May-02	30	38.43	15	Q	--	SA-2,4	SA-2,4	SA-2,4	--	SA-2,4	SA-2,4	--
MW-18	May-02	25	39.24	15	Q	--	A-4	A-4	A-4	--	A-4	A-4	--
MW-19	May-02	30	38.70	15	Q	--	A-4	A-4	A-4	--	A-4	A-4	--
MW-20	May-02	25	38.59	15	Q	--	SA-2,4	SA-2,4	SA-2,4	--	SA-2,4	SA-2,4	--
MW-21	May-02	25	39.04	15	Q	--	SA-2,4	SA-2,4	SA-2,4	--	SA-2,4	SA-2,4	--
MW-22	May-02	30	38.13	15	Q	--	SA-2,4	SA-2,4	Q	--	SA-2,4	SA-2,4	--
MW-23	Dec-07	25	38.86	15	Q	A-4	A-4	A-4	SA-2,4	--	A-4	A-4	--
MW-24	Dec-07	25	37.80	15	Q	SA-2,4	SA-2,4	SA-2,4	Q	A-4	Q	A-4	--
MW-25	Dec-07	25	38.90	15	Q	A-4	A-4	A-4	SA-2,4	--	A-4	A-4	--
P-1	Dec-07	30	38.87	15		SA-2,4	Q	A-4	Q	A-4	Q	A-4	--
SOIL VAPOR													
SV-1	Oct-95	13.5	--	5	--	--	--	--	--	--	--	--	--
SV-2	Oct-95	13.5	--	5	--	--	--	--	--	--	--	--	--
SV-3	Oct-95	13.5	--	5	--	--	--	--	--	--	--	--	--
SV-4	Oct-95	13.5	--	5	--	--	--	--	--	--	--	--	--
SV-5	Oct-95	15.5	--	5	--	--	--	--	--	--	--	--	--
STORM WATER													
Terminal Yard										TA		TA	

Footnotes:

- (1) Total Petroleum Hydrocarbons as Diesel by EPA Method 8015B.
- (2) Total Petroleum Hydrocarbons as Gasoline by EPA Method 8260B.
- (3) Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) by EPA Method 8260B.
- (4) Methyl Tert Butyl Ether, by EPA Method 8260B.
- (5) Fuel Oxygenates include Di-isopropyl (DIPE), Ethyl tertiary-butyl ether (ETBE), and tertiary-amyl methyl ether (TAME)
- (6) Tert Butyl Ether, by EPA Method 8260B.
- (7) Field parameters including pH, conductivity, temperature, turbidity, and dissolved oxygen (DO)
- (8) Dissolved Lead, by EPA Method ICPMS 200.8

KEY

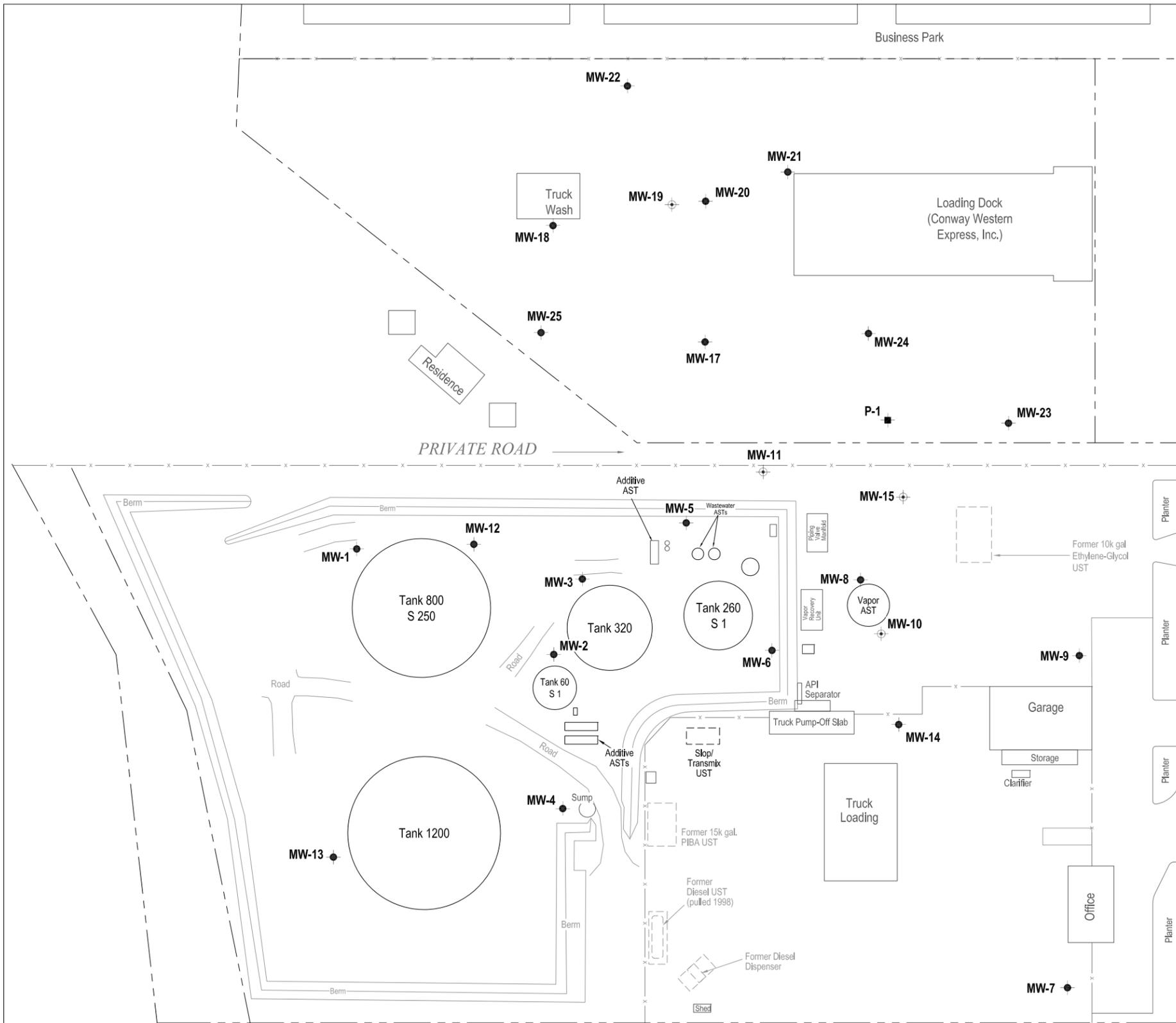
Q = quarterly monitoring according to the following schedule:

- 1st quarter = Jan thru Mar
- 2nd quarter = Apr thru Jun
- 3rd quarter = Jul thru Sep
- 4th quarter = Oct thru Dec

SA-2,4 = semi-annual monitoring during second and fourth quarters

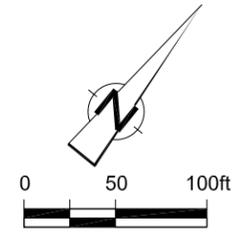
A-4 = annual monitoring during fourth quarter

TA = Twice annually during the wet season. Storm water sampling should be conducted during the first storm event of the wet season, which produces runoff, and during one other storm event during the same wet season.



LEGEND

- MW-1 ● Groundwater monitoring well location
- P-1 ■ Piezometer well location
- MW-10 ⊕ Groundwater extraction well location



O'TOOLE AVENUE

SMP-1

Monitoring Locations
 Shell San Jose Terminal
 2165 O'Toole Avenue
 San Jose, California

