Draft Remedial Investigation
Former Standard Oil Bulk Terminal
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

December 15, 2014

Prepared for:
Washington State Department of Ecology
PO Box 47775
Olympia, Washington 98504-7774

Prepared by:
Leidos Engineering, LLC
18912 North Creek Parkway, Suite 101
Bothell, Washington 98011

On Behalf of:
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, California 94583

leidos

Draft Remedial Investigation
Former Standard Oil Bulk Terminal
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

December 15, 2014

Prepared for:
Washington State Department of Ecology
PO Box 47775
Olympia, Washington 98504-7774

Prepared by:

Leidos Engineering, LLC
18912 North Creek Parkway, Suite 200
Bothell, Washington 98011

On Behalf of:
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, California 94583

Don Wyll
Senior Project Manager

Ruth Otteman, LG #xxx
Project Manager Geologist

TABLE OF CONTENTS

FIGURES

TABLES

APPENDIX

DRAFT REMEDIAL INVESTIGATION REPORT

1. INTRODUCTION

1.1 OBJECTIVE

Leidos Engineering, LLC (Leidos), formerly SAIC Energy, Environmental & Infrastructure, LLC (SAIC), on behalf of Chevron Environmental Management (CEMC), prepared this Remedial Investigation (RI) report to document the activities and findings into the nature and extent of contamination at the former Standard Oil Bulk Terminal/Chevron Facility No. 1001348.

This report is intended to fulfill the requirements of the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Washington Administrative Code (WAC) 173-340-350[7] and WAC 173-340-430(7), and is being submitted in accordance with Agreed Order No. DE-7111.

An RI work plan was developed and approved by Ecology in June 2010 (SAIC, 2010a). RI activities, including a soil and groundwater investigation, began in July 2010. Due to difficulties gaining access to adjacent properties to complete the off-property investigation, an RI Work Plan addendum was submitted to Ecology in September 2010, which proposed the installation of additional soil borings to complete on-property investigation activities (SAIC, 2010b). A second work plan addendum was submitted to Ecology in April 2013, which proposed additional investigation to close data gaps and fully delineate the extent of the dissolved phase plume in the shallow water-bearing zone (SAIC, 2013).

2. SITE BACKGROUND

2.1 SITE DESCRIPTION

The fenced 3.5-acre former Standard Oil bulk terminal is located in an industrial area at 1656 East J Street (subject property) in Tacoma, Washington (Figure 1). The property is within the Commencement Bay Nearshore/Tideflats Superfund boundary and the Tacoma Tar Pits (former coal gassification plant, 1924-1956) study area boundary. The subject property is located approximately 1,500 feet northwest and down-gradient to cross-gradient of the Tacoma Tar Pits proper. The former bulk terminal is situated approximately 2,200 feet east of the Thea Foss Waterway and approximately 2,000 feet west of the Puyallup River. The property is relatively flat with an elevation of approximately 10 feet above mean sea level. Assessment activities have taken place on several adjacent parcels, including the Northwest Detention Center to the east; Rainier Plywood to the north; Steeler, Inc. and Port of Tacoma properties to the west and a railroad switchyard owned by Burlington Northern Railroad to the south (Figure 2).

Two buildings are present on the property. The building in the center of the property is a tent hangar structure that is currently used for storage. The building located adjacent to East J Street is used for office space. The property is used for transportation offices, parking for transportation vehicles, and employee parking for the adjacent Northwest Detention Center.

2.2 SITE HISTORY

The former bulk terminal and surrounding area were part of a tidal marsh at the mouth of the Puyallup River. The current industrial area was filled with sediments dredged from the mouth of the river in the early 1900s. Standard Oil purchased the subject property around 1905.

The property was used as a fuel storage and distribution facility from approximately 1905 through 1988. When in operation, the bulk terminal supported thirteen above-ground tanks (ASTs), four underground storage tanks (USTs), two tanker truck-loading racks, two office buildings, several garages, and a barrel platform. The capacities of the ASTs and USTs ranged from approximately 10,000 to 1.6 million gallons and stored gasoline, diesel, light and industrial fuel oil, aviation gasoline, stove and furnace oil, and additives. Lube oil was stored in barrels placed on platforms. Historical bulk terminal features and pipeline configurations are depicted in Figure 3. Between 1989 and 1990, all structures and docks associated with the bulk terminal were decommissioned and removed, including all underground pipes located on the property. The northern four bulk petroleum supply lines leading to the former dock (shown in blue and red on Figure 2) were removed and/or flushed and cleaned and subsequently abandoned in place in 1989 (Hart Crowser, 1989).

Chevron sold the subject property to Bowman Propane in 1999. The property was acquired by Reinhard Petroleum in November 2004 for staging of petroleum transport trucks and then subsequently purchased by GEO Group through the Correctional Services Corporation in 2009. The property was leased to a variety of occupants (Griffin-Galbraith Fuel Company, Lubking Petroleum, Mathews Heating Oil, and Bowman Propane and Reinhard Petroleum) until 2010. An asbestos recycling plant previously operated in the tent hangar.

2.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS AND REMEDIAL ACTIONS

Several environmental investigations and remedial activities were performed at the site between 1984 and 2001. These investigations identified the presence of gasoline-, diesel-, and oil-range hydrocarbons in the soil and groundwater at the Site. Historical soil boring and test pit locations are presented as Figure 4. Historical soil analytical results are presented in Table 2-1. Analytical results for several samples were not available for review.

1984

Chevron installed ten monitoring wells, C-1 through C-10. No soil samples were submitted for laboratory analysis.

1989

In early 1989, light non-aqueous phase liquid (LNAPL) bailing was conducted from select wells (Chevron Marketing Department, 1989 and Gettler-Ryan, Inc., 2006).

Hand borings HB-1 to HB-8 were completed in March 1989 and forty-nine test pits (TP-01 through TP-49) were excavated to depths between 5 and 10 feet below ground surface (bgs) in October 1989 (GeoEngineers, Inc., 1990 as cited in Cambria Environmental Technology [Cambria], 1997).

Four petroleum supply lines under East 15th Street, which extended from the dock on the east shore of the Thea-Foss Waterway to the subject property were removed in May 1989. No evidence of petroleum hydrocarbon impacts was observed in the trench of the excavated pipelines (Hart Crowser, 1989).

Monitoring wells MW-1 to MW-17 were installed in the upper water-bearing zone between February and September 1989 (GeoEngineers, Inc., 1989a and GeoEngineers, Inc., 1990 as cited in Cambria, 1997).

1990

Five additional monitoring wells (D-1 through D-5) were installed in 1990 to monitor the lower water-bearing zone (GeoEngineers, Inc., 1990 as cited in Cambria, 1997). Fourteen hand auger borings (HH-1 through HH-14) and 34 test pits (TP-50 through TP-83) were drilled and excavated along the western and southern property boundary in January 1990 (GeoEngineers, Inc., 1989b).

In the early 1990s Chevron planted approximately 500 trees along the property boundary as an experimental test of phytoremediation. The test was designed to minimize offsite groundwater migration and accelerate hydrocarbon biodegradation. These trees were subsequently removed from the property (Cambria, 1997).

1995

Twenty test pits (TP-1 through TP-20) were excavated to depths between 3.5 and 8.5 feet bgs and five shallow borings (B-1 through B-3, D-2A, and D-5A) were drilled to depths between 11.5 and 21.5 feet bgs at the Site in September 1992. Two borings were constructed as monitoring wells (D-2A and D-5A) to replace previously abandoned wells.

1995

Five well points were drilled in the northeast corner of the property in August 1995 where petroleum was previously detected in groundwater (P-1 through P-5). Possible LNAPL was measured in two wells, but attempts to sample the LNAPL were unsuccessful and it was not detected in subsequent investigations (GeoEngineers, Inc., 1995).

2001

Approximately 58 tons of petroleum-impacted soil in the vicinity of the sewer and electrical lines at the intersection of F Street and J Street were excavated and disposed of off-site. Impacted soil was removed and disposed at TPS Technologies in Lakewood, Washington (Delta Environmental Consultants, Inc., 2001).

3. REMEDIAL INVESTIGATION ACTIVITIES

3.1 INVESTIGATION TIMELINE

In accordance with the Agreed Order No. DE-711 issued in October 2010, an RI work plan developed and approved by Ecology in June 2010, and an RI Work Plan addendum, the following assessment activities were performed:

July 2010

Seventeen soil borings (SB-1 through SB-17) and seven monitoring wells (D-6, D-7, and MW-18 through MW-22) were installed and sampled to further define the petroleum impacts at the site (Figure 5).

Soil borings were advanced to depths between 6.5 and 20 feet bgs using a direct-push Geoprobe® rig or hand auger. Two attempts were made to complete soil boring SB-18; however, due to fill material, concrete debris, and water encountered at 1.5 feet bgs it could not be completed.

Groundwater monitoring wells were installed using a hollow stem auger drill rig into the lower water-bearing zone (D-6 and D-7) and upper water-bearing zone (MW-18 through MW-22). Each of the newly installed wells was surveyed and top-of-casing elevations were established based on a nearby benchmark.

October 2010

Eighteen soil borings (SB-19 through SB-26 and SB-28 through SB-37) were installed and sampled to further define the petroleum impacts at the site (Figure 5).

Soil borings were advanced to 12 feet bgs (with the exception of SB-29 which was advanced to 7 feet bgs) using a direct-push Geoprobe® rig.

Four attempts were made to complete soil boring SB-27; however, due to shallow groundwater the boring was not completed.

June 2012

Eight soil borings (SB-38 through SB-45) were installed off-property using a hand auger or air knife to a depth ranging from 5 to 6.5 feet bgs. Activities assessed the presence of petroleum hydrocarbons on two parcels owned by the Port of Tacoma along historical pipelines on the north and south side of each parcel (Figure 6).

July 2013

Fourteen soil borings (SB-46 through SB-60) were advanced to a depth of 5 to 13 feet bgs using a direct-push Geoprobe® rig, with the exception of borings SB-49 and SB-50 which were advanced to 4.5 feet bgs using a hand auger. The investigation was completed to better define the extent of onsite petroleum impacts (Figure 5).

July 2014

Ten soil borings (SB-61 through SB-71) were installed to a depth of 6 to 7 feet on the south side of the Steeler property to evaluate the potential for petroleum impacts along a former historical pipeline (Figure 6).

Existing groundwater monitoring well RMW-1, located on the Rainier Plywood Company parcel (Figure 5), was sampled for the presence of petroleum hydrocarbons.

Soil analytical results are presented in Table 3-1 for on-property investigation samples and in Table 3-2 for off-property pipeline investigations samples.

3.2 ON-PROPERTY SOIL BORING INSTALLATION

A total of 57 soil borings were completed on the property, including seven that were completed as monitoring wells. Soil borings were advanced using a combination of air knife and hand auger for the first eight feet bgs, and a hollow-stem auger or Geoprobe® below eight feet bgs.

All soil borings were geologically logged and field screened for sheen and organic vapors with a photo-ionization detector (PID). In general, borings were advanced until soil no longer appeared impacted or refusal was met. Boring logs are presented as Appendix A.

At least one grab soil sample was collected from each boring was submitted for laboratory analysis, based on field observations and measurements. Additional samples were collected in borings where petroleum impacts were present in multiple and/or lengthy intervals. All samples were shipped to Lancaster Laboratories, Inc. of Lancaster, Pennsylvania under proper chain of custody protocols.

Soil samples were analyzed for the following parameters:

- Gasoline-range hydrocarbons by Ecology Method NWTPH-Gx;
- Diesel-range and heavy-oil range hydrocarbons by Ecology Method NWTPH-Dx with silica gel cleanup; and
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by United States Environmental Protection Agency (EPA) Method 8260B.

Selected soil samples were analyzed for the following additional parameters:

- n-hexane and naphthalenes by EPA Method 8260B;
- Carcinogenic-polycyclic aromatic hydrocarbons (cPAHs) by EPA Method 8270 using selective ion monitoring (SIM);
- Volatile petroleum hydrocarbons (VPH) by Ecology Method WA-VPH;
- Extractable petroleum hydrocarbons (EPH) by Ecology Method WA-EPH;
- Lead by EPA Method 6020; and
- Ethylene dibromide (EDB) and ethylene dichloride (EDC) by EPA Method 8260B.

Based on the results from soil samples collected during assessment activities, gasoline-, diesel-, and heavy oil-range hydrocarbons, and benzene were identified as contaminants of potential concern at the former bulk terminal property. Analytical results are presented in Table 3-1. Laboratory analytical reports are presented as Appendix B.

3.3 PIPELINE SOIL BORING INSTALLATION

A total of nineteen soil borings were installed using a hand auger or air knife to a depth ranging from 5 to 6.5 feet bgs. Activities assessed the presence of petroleum hydrocarbons on parcels owned by the Port of Tacoma and Steeler, Inc., along historical pipelines west of the former bulk terminal on the north and south side of each parcel.

All soil borings were geologically logged and field screened for sheen and organic vapors with a PID. Boring logs are presented as Appendix A.

At least one grab soil sample was collected from each boring for laboratory analysis, based on field observations and measurements. Additional samples were collected based on field

screening results. All samples were shipped to Lancaster Laboratories, Inc. of Lancaster, Pennsylvania under proper chain of custody protocols.

Soil samples were analyzed for the following parameters:

- Gasoline-range hydrocarbons by Ecology Method NWTPH-Gx;
- Diesel-range and heavy-oil range hydrocarbons by Ecology Method NWTPH-Dx with silica gel cleanup; and
- BTEX by EPA Method 8260B.

Based on the results from soil sampling activities on the Steeler and Port of Tacoma properties, petroleum constituents are not present in the vicinity of the former bulk plant pipelines. Analytical results are presented in Table 3-2. Laboratory analytical reports are presented as Appendix B.

3.4 MONITORING WELL INSTALLATIONS

Groundwater monitoring wells D-6 and MW-18 were installed in the northwest corner of the former bulk terminal; well MW-19 was installed northeast of former Tank #30; well MW-20 was installed west of the existing building, located in the central portion of the site; well MW-21 was installed south of the former Tank # 4; and wells D-7 and MW-22 were installed in the northeast corner of the site. The lower water-bearing zone groundwater monitoring wells (D-6 and D-7) were completed at a depth of 20.5 feet bgs and screened from 15 to 20 feet bgs. Groundwater monitoring wells in the upper water-bearing zone were completed at a depth of 9.5 feet bgs and screened from 3 to 9 feet bgs, with the exception of well MW-22 which was completed at a depth of 8.5 feet bgs and screened from 3 to 8 feet bgs. These wells are depicted on Figure 5.

The monitoring well boring log and construction details are included in Appendix A.

3.5 GROUNDWATER MONITORING AND SAMPLING

All newly installed and existing onsite groundwater monitoring wells were gauged and sampled during the RI activities between 2010 and 2014, with the exception of well D-4, which could not be located. Based on information provided by Bowman Propane staff the area in the approximate location of D-4 was paved over in 2006. Monitoring well RMW-1, located on the Rainier Plywood property, was sampled once in July 2014.

Groundwater samples were collected by low-flow purging and sampling techniques in accordance with *Appendix A, Sampling and Analysis Plan* of RI Work Plan (SAIC, 2010a). All samples were submitted to Lancaster Laboratories, Inc. of Lancaster, Pennsylvania under proper chain of custody protocols.

Groundwater samples were analyzed for the following parameters:

- Gasoline-range hydrocarbons by Ecology Method NWTPH-Gx;
- Diesel-range and heavy-oil range hydrocarbons by Ecology Method NWTPH-Dx;
- BTEX, MTBE, EDB/EDC, naphthalene, and n-hexane by EPA Method 8260B;
- Dissolved lead by EPA Method 6020; and
- cPAHs by EPA Method 8270 SIM.

Based on the results from groundwater samples collected from groundwater sampling activities, gasoline-, diesel-, and heavy oil-range hydrocarbons, benzene, and total xylenes have been detected in groundwater above MTCA Method A cleanup levels. Analytical results are presented in Table 3-3. Laboratory analytical reports for groundwater samples collected between the 4th quarter of 2010 and the 4th quarter of 2013 were included with the quarterly groundwater monitoring reports issued for the Site. Laboratory analytical reports for groundwater samples collected during the 1st and 2nd quarters of 2014 are included in Appendix B.

3.6 FIELD QUALITY ASSURANCE SAMPLES

Quality assurance/quality control (QA/QC) field duplicates and trip blank samples were collected and analyzed per *Appendix A Sampling and Analysis Plan* and *Appendix B Quality Assurance Project Plan of* the RI Work Plan (SAIC, 2010a).

4. SUBSURFACE CONDITIONS

4.1 GEOLOGY

The site soil lithology is composed of three units. The top 3.5 to 11 feet consists of dredged fill, composed of fine to medium sand with varying amounts of silt and some marine shell fragments. Underlying the fill unit is 3 to 6 feet of native soil consisting of silt with varying amounts of sand, organic matter and clay. Beneath this is a unit of fine to medium sand with varying amounts of silt. The top of this unit is 10 to 16 feet deep and the unit varies in thickness between approximately 5 and 70 feet.

Cross-section transect lines can be found on Figure 7 with the corresponding cross-sections depicted on Figures 8 and 9.

4.2 HYDROGEOLOGY

Two water-bearing zones have been identified beneath the site. The upper water-bearing zone is unconfined in the fill material and is separated from the underlying water-bearing zone by an aquitard of clayey silt and sandy silt. The upper water-bearing zone may be dewatered during periods of prolonged dry weather. The depth to groundwater in the upper water-bearing zone has ranged from about 0.25 to 9.85 feet bgs. This groundwater appears to mound and flow radially away from the center of the subject property; mostly east and southeast towards the Puyallup River, though flow direction can fluctuate to the north, northwest and southwest. It does not appear to be tidally influenced. Potentiometric maps from January 2014 for the shallow water-bearing zone are included as Figure 10.

The lower confined water-bearing zone in the sandy unit is influenced by tidal fluctuations in the Puyallup River and possibly the Wheeler-Osgood Waterway. The lower groundwater water-bearing zone flow direction during low tide is to the northwest. The depth to groundwater in the lower confined water-bearing zone ranged from 7 to 15 feet bgs and has a general groundwater flow direction ranging from northwest to northeast depending on the tidal influence; northwest flow is toward the waterway. Potentiometric maps from January 2014 for the deep water-bearing zone are included as Figure 11.

5. NATURE AND EXTENT OF PETROLEUM IMPACTS

5.2 SOIL IMPACTS

Soil sample analytical results from the RI are summarized in Tables 3-1 and 3-3. Laboratory reports are presented in Appendix B.

Gasoline-, diesel-range hydrocarbons, and benzene are the most widespread contaminants, occurring throughout the former bulk terminal property (Figure 12). The areas of heavy oil-range hydrocarbons are encompassed by the area of gasoline- and diesel-range hydrocarbon impacts. Soil impacts in these areas are consistent with releases of petroleum products during historical terminal operations.

The extent of ethylbenzene, and total xylenes impacts are much more restricted and were primarily observed in historical soil samples. A comparison of recent soil analytical results to historical data indicates natural attenuation has reduce petroleum concentrations

Impacts to soil are present in shallow soils, typically 2 to 3 feet below ground surface and extend to maximum depths of approximately 14 feet bgs near areas where historical ASTs were present and to approximately 10 feet bgs in other areas of the Site.

5.3 GROUNDWATER IMPACTS

Groundwater monitoring and sampling has been performed periodically at the former bulk terminal since the early 1990s and is currently conducted on a quarterly basis. Analytical results are summarized in Table 3-3.

LNAPL was first detected at the former bulk terminal property in MW-20 in July 2012; with maximum LNAPL thickness of 0.29 feet. LNAPL has not been observed in any other groundwater monitoring well at the Site.

Within the shallow water-bearing zone, the most prevalent petroleum constituents in groundwater are diesel- and heavy-oil range hydrocarbons (Figure 10). Benzene has historically exceeded the MTCA Method A cleanup level for groundwater; however, benzene concentrations in all wells have been non-detectable or below the cleanup level for the past eight quarterly groundwater monitoring events. Based on comparison of Ecology NWTPH-Dx analyses that were performed with silica-gel cleanup to those performed without silica-gel cleanup, recent detections of diesel-range hydrocarbons in groundwater at the Site are believed to be the result of non-petroleum polar compounds resulting from biodegradation of gasoline-range contamination at the Site.

Analytical results indicate natural attenuation is occurring and petroleum constituent concentrations are decreasing. The highest concentrations of diesel- and heavy-oil range hydrocarbons typically occur in monitoring wells along the north side of the former bulk terminal property, near former AST #30. The lateral extent of gasoline- and diesel-range hydrocarbon impacts is delineated to the northwest by wells MW-18 and RMW-1, to the west by wells MW-13 and MW-14, to the southwest by wells MW-10 and MW-21, to the northeast by well MW-11, and to the north by wells MW-12 and MW-22.

Groundwater monitoring results within the deep water-bearing zone indicate only diesel- and heavy oil-range hydrocarbons are present (Figure 11). The highest concentrations of diesel-range hydrocarbons typically occur in monitoring wells along the north and west sides of the former bulk terminal property. Second quarter 2014 groundwater monitoring data indicates

reduced diesel-range hydrocarbon concentrations and plume delineation to the northwest by well D-6, to the west by wells D-1, to the south by D-3, and to the north by monitoring wells D-2A and D-7.

Monitoring results suggest that the areal extent of groundwater impacts includes the area of soil impacts. Based on the analytical data, the dissolved-phase plume is delineated in both the shallow and deep water-bearing zone and the spatial distribution of groundwater monitoring wells indicates impacts have not migrated offsite. Analytical data and hydrographs depicting gasoline- and diesel-range, and benzene concentrations from monitoring wells MW-10, MW-11, MW-12, MW-13, MW-14, D-1, D-2A, and D-3 show a generally stable or decreasing concentration trend line. Hydrographs are presented in Appendix C.

6. CONCEPTUAL SITE MODEL

In order to more fully understand the relationship between contaminants, affected environmental media, indoor media, and human receptors, a conceptual site model was developed. MTCA defines a conceptual site model as "a conceptual understanding of a site that identifies potential or suspected sources of hazardous substances, types and concentrations of hazardous substances, potentially impacted media, and actual and potential exposure pathways and receptors." These components will be discussed in the sections below, as an introduction to presenting the conceptual site model.

6.1 CURRENT AND POTENTIAL LAND USE

The former bulk terminal is fenced and located in an industrial area. The former bulk terminal property was purchased by GEO Group through the Correctional Services Corporation in 2009. GEO Group uses the property for transportation offices, parking for transportation vehicles, and employee parking for the adjacent Northwest Detention Center. The property owner plans to continue to use the property for parking. The tent hangar from an asbestos recycling plant remains in the center of the former bulk terminal property.

Restrictive covenants were placed on the property in 1999, which prohibit residential uses of the property. The Environmental Indemnification Agreement between Chevron and Bowman Propane and the restrictive covenants are applicable to each successor, assignee or leasee of the property; therefore, land use is anticipated to remain industrial.

The City of Tacoma is served by a municipal water supply whose source is from the Green River watershed and 24 wells located approximately 1.5 miles southeast of the subject property. The Site is downgradient from these supply wells and no drinking water wells are present at the Site itself. There are two deep production wells installed at 1623 East J Street that were formerly used for domestic and process water for a former meat packing plant. Currently the wells are used as monitoring wells for EPA to monitor the Superfund portion of the 1623 East J Street property. The groundwater at the Tacoma Tar Pits site, located to the southeast of the bulk terminal, was designated as non-potable by EPA in 1987 (EPA, 1987). The *Thea Foss Redevelopment Cleanup Action Plan* (Ecology, 1994), Exhibit C to the *Thea Foss Area-Wide Consent Decree*, made the determination that shallow groundwater is considered non-potable beneath upland properties in the vicinity of the Thea Foss Waterway, and that the highest and best groundwater use is discharge to surface water.

6.2 EXPOSURE PATHWAYS AND POTENTIAL RECEPTORS

Previous activities have released petroleum hydrocarbons to the soil and groundwater. MTCA [WAC 173-340-200] defines an exposure pathway as: "the path a hazardous substance takes or could take from a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from a site." Primary exposure pathways are those routes that are known to be currently transporting petroleum contaminants to or within a certain medium (such as soil contamination to groundwater). Secondary exposure pathways are those routes that: (a) have transported contaminants in the past, but may not be currently (such as releases from ASTs); or (b) may transport contaminants in the future, but do not currently. Precluded exposure pathways are those that are not possible at any time, based on physical evidence, and are therefore considered closed pathways.

Soil and groundwater (with LNAPL), are impacted media, but may also be considered secondary contaminant sources because contaminants may move through the unsaturated zone, either by lateral and downward transport to the water table or by lateral transport within the water table.. The potential exposure pathways associated with each medium/source are discussed below, along with the rationale for excluding or including that pathway.

6.2.1 Potential Groundwater Exposure Pathways

Shallow groundwater at or near the Site is not potable due to its proximity to the Thea Foss Waterway. The fact that impacted groundwater is not potable excludes the potential for human ingestion and dermal contact with affected groundwater at this time. The exposure pathway from dermal contact and vapor inhalation during subsurface work are considered primary exposure pathways.

In August 1995, Ecology issued a letter stating that the former Chevron bulk terminal is not currently impacting surface water conditions at the nearby waterways (Ecology, 1995). Two surface water bodies, Puyallup River and the Thea Foss Waterway are located approximately 2,000 feet east and 2,200 feet west of the Site, respectively. Reportedly there are no storm lines that run from the property to the Thea Foss Waterway/Wheeler-Osgood Waterway. Surface water currently drains to the southwest corner of the subject property in a drainage swale and the parcel is surrounded by a 3-foot high concrete wall reducing surface water runoff potential. Impacts to surface water are considered to be low. The groundwater discharge to surface water pathway is considered to be a potential exposure pathway; however, current groundwater analytical data indicate that the dissolved plume does not extend to the Thea Foss Waterway or Puyallup River.

A summary of the potential groundwater exposure pathways at the site is presented in the table below.

Potential Groundwater Exposure Pathways	Applicability
Ingestion/household contact	Precluded: The shallow and deep water-bearing zones are not sources of drinking water in the vicinity of the Site. However, groundwater cleanup levels are based on estimates of the highest beneficial use, which is drinking water.

Potential Groundwater Exposure Pathways	Applicability
Incidental exposure resulting from site development or utility construction	Primary: Because groundwater is encountered at a depth of 4 to 8 feet bgs, groundwater could be encountered during routine site development or utility construction activities.
Groundwater to surface water	Precluded: The shallow and deep water-bearing zones extend to the north and discharge to the Thea Foss Waterway and Puyallup River. An off-property monitoring well demonstrates that groundwater conditions are protective of surface water.
Inhalation of hazardous vapors in outdoor air	Primary: Volatilization of petroleum hydrocarbons may create an inhalation exposure pathway during future redevelopment and subsurface activities.
Inhalation of hazardous vapors in indoor air	Secondary: The presence of petroleum hydrocarbons and LNAPL in the shallow water-bearing zone could result in sub-slab vapors if structures are built over the contaminant plume.

The groundwater ingestion pathway is precluded in the vicinity of the Site because the water-bearing zones are not potable. The primary pathways of concern are the groundwater to surface water and groundwater to subsurface worker pathways.

6.2.2 Potential Soil Exposure Pathways

The impacted soil is considered to be a potential direct contact exposure pathway. Access to the Site is restricted by fencing and the property is partially paved. Depth to impacted soil is approximately 3 feet bgs, which eliminates the potential for workers to come in contact with impacted soil during typical use of the property for parking. However, the potential exists for construction workers to contact impacted soil during paving or property development activities, if these activities occur in the future. The property is not used for residential or recreational purposes and routine exposure of humans to potentially-contaminated soil, or to vapors from such soil, is considered to be low.

A summary of the potential soil exposure pathways at the site is presented in the table below.

Potential Soil Exposure Pathways	
Potential Soil Exposure Pathway/Scenario	**Applicability**
Ingestion/Dermal Contact	Primary. The area of soil impacted by COCs at the site is currently limited to the property below 2 to 3 feet bgs. Therefore, the current potential for ingestion or dermal contact is limited. However, potential ingestion or direct contact exposures are possible for future workers performing excavation, site assessment, or subsurface utility work at the Site.
Soil to Dust Emissions (Outdoor Air)	Primary. Volatilization of hazard substances or dust from contaminated soil may create an inhalation exposure pathway for future workers performing excavation, site assessment, or subsurface utility work at the site.
Hazardous substances leaching from soil to groundwater	Secondary. Soil contamination in contact with groundwater has resulted in LNAPL and concentrations of dissolved-phase petroleum contamination in groundwater.
Soil to Vapor (Indoor Air)	Secondary. The presence of petroleum hydrocarbon impacts could result in sub slab vapors if structures are built over the contaminant plume.

The soil vapor to indoor air pathway has been identified as secondary, as the only occupied structure on the property is located outside the areas of the property that are impacted by petroleum hydrocarbons. Potential receptors for the contaminants in soil vapor could include occupants in any future building; however, currently there are no plans to construct a building at the property. Because evaluation of potential exposure risks to indoor occupants due to soil vapor is dependent on the specific building design and use, a quantitative evaluation is infeasible to perform at this time. If construction of a building were proposed at the property, the evaluation will be performed using the design parameters for the specific building.

6.2.3 Terrestrial Ecological Evaluation

In addition to evaluation of human health risk, MTCA (WAC 173-340-7490) requires that one of the following actions be taken following the release of hazardous substances to the soil at a site to determine the potential impacts to terrestrial organisms at the site:

- Documentation of an exclusion from any further terrestrial ecological evaluation using the criteria in WAC 173-340-7491.
- Completion of a simplified terrestrial ecological evaluation as specified in WAC 173-340-7492.
- Completion of a site-specific terrestrial ecological evaluation as specified in WAC 173-340-7493.

A site may be excluded from the requirement for a terrestrial ecological evaluation if any of the following criteria are met at the site:

- All soil contaminated with hazardous substances is, or will be located below the point of compliance established under WAC 173-340-7490(4).
- All soil contaminated with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination.
- There is less than 0.25 acres of contiguous undeveloped land on or within 500 feet of any area of the site contaminated with chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene.
- There is less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet of any area of the site and the contamination at the site does not include any of the contaminants listed in the preceding bullet.

The Site does not meet the above-listed requirements for TEE exclusion. Therefore, a simplified TEE was completed for the Site using WAC 173-340-7492, Table 749-1.

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest ½ acre (1/4 acre if the area is less than 0.5 acre).

1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	11
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	3
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	3
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	2

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	12

Based on the results of Table 749-1 the TEE is ended at this point; the Site does not pose a threat of adverse effects to terrestrial ecological receptors.

6.3 CRITERIA FOR ESTABLISHING PRELIMINARY CLEANUP LEVELS

Under MTCA [WAC 173-340-200], a cleanup level means: "the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions." Cleanup levels, in combination with points of compliance, typically define the area or volume of soil, water, air, or sediment at a site that must be cleaned up. MTCA further specifies that the first step in determining cleanup levels is to identify the potentially contaminated media, the current and potential pathways of exposure, the current and potential receptors, and the current and potential land and resource uses.

6.3.1 Groundwater Cleanup Levels

Groundwater cleanup levels are based on estimates of the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future site use. Under MTCA 173-340-720, drinking water is the beneficial use requiring the highest groundwater quality. Therefore, exposure to contaminants through ingestion and other domestic uses represents the reasonable maximum exposure for all sites unless the groundwater at the site can be demonstrated to be not potable. The Site is located on filled tidelands, and based on the proximity to the Thea Foss Waterway, groundwater in the shallow and deep water-bearing zones has been determined to be not potable. The point of compliance for groundwater is throughout the Site.

MTCA states that groundwater cleanup levels shall be attained in all groundwater from the point of compliance to the outer boundary of the hazardous substance plume. The standard point of compliance as defined by MTCA is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the site.

In cases where it is not practicable to meet the cleanup level throughout the site in a reasonable restoration time frame, MTCA allows establishment of a conditional point of compliance. The conditional point of compliance shall be as close as practicable to the source of hazardous substance and not exceed the property boundary. An appropriate conditional point of compliance for protection of surface water at this Site is at the former bulk terminal property boundary. Groundwater monitoring indicates that the groundwater plume does not extend to the Thea Foss Waterway and Puyallup River, the nearest bodies of surface water to the Site.

6.3.3 Soil Cleanup Levels

MTCA provides three approaches for establishing soil cleanup levels: Method A, Method B, and Method C.

Method A may be used on sites involving relatively few hazardous substances or where cleanup action may be routine. Under Method A, cleanup levels are determined by the most stringent criteria specified under state and federal laws and Tables 720-1, 740-1, and 745-1 of MTCA.

Method B is the universal method for determining cleanup levels at all sites. For sites contaminated with TPH, Method B cleanup levels are determined by using the fractionated analytical approach for petroleum. This approach involves testing of the samples to determine the LNAPL composition. Cleanup levels must consider the measured or predicted ability of the fractions to migrate from one medium to other media. When multiple exposure pathways are identified for a single media, the most stringent cleanup level is selected.

Method C is used in situations such as industrial sites. Site cleanups under Method C will require restrictions placed on the property to ensure future protection of human health and the environment.

An evaluation of the appropriate point of compliance for soil cleanup levels for the Site is presented in table below.

Determination of Point of Compliance for Cleanup Levels

Potential Exposure Pathway	MTCA defined point of compliance	Applicability to Site	Site-specific Point of Compliance
Surface water receptor	Throughout the Site.	Applicable. Groundwater in the shallow and deep water-bearing zones is non-potable; however, groundwater discharges to surface water downgradient of the Site.	Throughout the Site.
Soil to vapors (indoor air)	Throughout the Site from the ground surface to the uppermost groundwater saturated zone.	Applicable. The potential exists for vapors in any future commercial building.	Throughout the Site from the ground surface to the uppermost groundwater saturated zone.
Human direct contact	Throughout the Site from ground surface to 15 feet bgs.	Applicable. Subsurface soil could be potentially disturbed during utility and paving activities or future development activities.	Surface to 15 feet bgs.

Potential Exposure Pathway	MTCA defined point of compliance	Applicability to Site	Site-specific Point of Compliance
Ecological	Point of compliance to 6 feet bgs with institutional controls to prevent disturbance of subsurface soils.	Because the Site includes private property, it is not feasible to implement an institutional control to prevent subsurface soil disturbance.	Surface to 6 feet bgs.

Based on the results presented above, the point of compliance for the Site is based on the potential for direct contact by both humans and ecological receptors; therefore, the point of compliance for soil cleanup levels is from ground surface to 15 feet bgs.

6.4 PRELIMINARY CLEANUP LEVELS

6.4.1 Groundwater

The primary pathways of concern with regard to contaminants in groundwater is the groundwater to subsurface worker pathways. The Method A cleanup levels for groundwater presented in Table 720-1 (Method A Cleanup Levels for Groundwater) are applicable to this Site. The Method A Cleanup Levels are:

- Gasoline-range hydrocarbons: 800 µg/L,
- Diesel- and heavy oil-range hydrocarbons: 500 µg/L,
- Benzene: 5 µg/L,
- Toluene and total xylenes: 1,000 µg/L, and
- Ethylbenzene: 700 µg/L.

6.4.2 Soil

MTCA states that cleanup levels shall be based on the reasonable maximum exposure to occur during both current and future land uses. MTCA Method C cleanup levels for soil are applicable to the Site because the potential contaminants of concern at the Site are limited to petroleum products and petroleum additives, and the Site is located in an area that is currently and is likely to remain industrial.

A cleanup level that addresses the direct contact/incidental ingestion risk was developed for this Site using the Ecology Workbook for Calculating Cleanup Levels for Petroleum Contaminated Sites (MTCATPH Version 11). Using analytical data from soil samples collected at the Site, a direct contact cleanup level over 50,000 mg/kg total TPH was calculated for this pathway. The excess cancer risk associated with this cleanup level is less than 1 in 1E-05 and the hazard index is less than 1 (See Appendix D for MTCA Method C calculations).

This calculated Method C cleanup level exceeds residual soil saturation values (WAC 173-340-747.55, Table 15-14). Therefore, modified Method C cleanup values are proposed for gasoline-, diesel-, and heavy oil-range hydrocarbons. These proposed preliminary cleanup levels are based on the residual soil saturation values for medium- to coarse-sand as listed in Table 15-14 of the MTCA Concise Explanatory Statement (Ecology, 2001). The residual soil saturation values are listed below.

- Gasoline: 3,266 mg/kg
- Middle distillates: 7,742 mg/kg
- Fuel oils: 17,419 mg/kg

These preliminary cleanup levels are considered in the development of the alternative components evaluated in the Feasibility Study.

7.0 CONCLUSIONS

Soil and groundwater beneath the Site have been impacted by the historical bulk terminal operations. As part of this RI, the horizontal and vertical extent of petroleum hydrocarbon impacts to soil and groundwater have been delineated.

Gasoline-, diesel-range hydrocarbons, and benzene are the most widespread contaminants, occurring throughout the former bulk terminal property (Figure 12). The areas of heavy oil-range hydrocarbons are encompassed by the area of gasoline- and diesel-range hydrocarbon impacts. Soil impacts in these areas are consistent with releases of petroleum products during historical terminal operations.

Impacts to soil are present in shallow soils, typically 2 to 3 feet below ground surface and extend to maximum depths of approximately 14 feet bgs near areas where historical ASTs were present and to approximately 10 feet bgs in other areas of the Site.

Two water-bearing zones have been identified beneath the site. The upper water-bearing zone is unconfined in the fill material and is separated from the underlying water-bearing zone by an aquitard of clayey silt and sandy silt. The upper water-bearing zone may be dewatered during periods of prolonged dry weather. The depth to groundwater in the upper water-bearing zone has ranged from about 0.25 to 9.85 feet bgs. The lower confined water-bearing zone in the sandy unit is influenced by tidal fluctuations in the Puyallup River and possibly the Wheeler-Osgood Waterway. The lower groundwater water-bearing zone flow direction during low tide is to the northwest. The depth to groundwater in the lower confined water-bearing zone ranged from 7 to 15 feet bgs and has a general groundwater flow direction ranging from northwest to northeast depending on the tidal influence.

Within the shallow water-bearing zone, the most prevalent petroleum constituents in groundwater are diesel- and heavy-oil range hydrocarbons (Figure 10). Benzene has historically exceeded the MTCA Method A cleanup level for groundwater; however, benzene concentrations in all wells have been non-detectable or below the cleanup level for the past eight quarterly groundwater monitoring events. Analytical results indicate natural attenuation is occurring and petroleum constituent concentrations are decreasing. The highest concentrations of diesel- and heavy-oil range hydrocarbons typically occur in monitoring wells along the north side of the

former bulk terminal property, near former AST #30. Groundwater monitoring results within the deep water-bearing zone indicate only diesel- and heavy oil-range hydrocarbons are present (Figure 11). The highest concentrations of diesel-range hydrocarbons typically occur in monitoring wells along the north and west sides of the former bulk terminal property. Monitoring results suggest that the areal extent of groundwater impacts includes the area of soil impacts. Based on the analytical data, the dissolved-phase plume is delineated in both the shallow and deep water-bearing zone and the spatial distribution of groundwater monitoring wells indicates impacts have not migrated off the former bulk terminal property.

The soil vapor to indoor air pathway has been identified as secondary, as the only occupied structure on the property is located outside the areas of the property that are impacted by petroleum hydrocarbons. Potential receptors for the contaminants in soil vapor could include occupants in any future building; however, currently there are no plans to construct a building at the property. Because evaluation of potential exposure risks to indoor occupants due to soil vapor is dependent on the specific building design and use, a quantitative evaluation is infeasible to perform at this time. If construction of a building were proposed at the property, the evaluation will be performed using the design parameters for the specific building.

Method C cleanup levels based on the residual soil saturation values for medium- to coarse-sand are proposed as preliminary cleanup levels for soil.

8.0 REFERENCES

Cambria Environmental Technology, Inc. (Cambria), 1997. *Site Summary and Remedial Approach*. July 18.

Chevron Marketing Department, 1984. *Memorandum-Hydrogeologic Investigation, Tacoma Bulk Plant, Tacoma, Washington*, October 9.

Delta Environmental Consultants, Inc., 2001. *Memorandum, Soil Disposal, Bowman Oil*. September 12.

Ecology (Washington State Department of Ecology), 1994. Thea Foss Redevelopment Cleanup Action Plan.

Ecology, 1995. *Wheeler Osgood Waterway, Chevron Bulk Plant.* August 21.

Ecology, 2001. *Concise Explanatory Statement for the Amendments to the Model Toxics Control Act, Cleanup Regulation, Chapter 173-340 WAC*. Publication Number: 01-09-043. Prepared by Washington State Department of Ecology, Toxics Cleanup Program. February 12.

EPA, 1987. *Record of Decision, Decision Summary and Responsiveness Summary for Final Remedial Action, Commencement Bay – Nearshore/Tideflats, Tacoma Tar Pits Site, Tacoma, Washington*. United State Environmental Protection Agency, Region 10. December.

GeoEngineers, Inc., 1989a. *Report of Geotechnical Services, Subsurface Contamination Study, Tacoma Bulk Fuel Terminal, Tacoma, Washington, for Chevron U.S.A.*, March 22.

GeoEngineers, Inc., 1989b. *Report of Phase 3 Services, Off-site Subsurface Petroleum Hydrocarbon Study, Former Tacoma Bulk Fuel Terminal, Tacoma, Washington, For Chevron U.S.A. Inc.*, June 20.

GeoEngineers. 1993. *Report of Geoenvironmental Services, Supplemental Site Characterization Study, Former Chevron Bulk Fuel Terminal, Tacoma, Washington* for Chevron U.S.A. Products Company. April 29.

GeoEngineers, 1995. *Phase Separated Hydrocarbon Assessment, Former Chevron Bulk Fuel Terminal, Tacoma, Washington.* September 21.

Gettler-Ryan, Inc., 2006. *Event of April 27, 2006, Groundwater Monitoring & Sampling Report,* June 5.

Hart Crowser, 1989. *Observation of Removal of Bulk Supply Lines, Chevron Tacoma Bulk Plant, Tacoma, Washington.* May 16.

SAIC, 2010a. *Remedial Investigation Work Plan, Former Standard Oil Bulk Terminal, Facility No. 1001348, 1656 East J Street, Tacoma, Washington.* Prepared for Washington State Department of Ecology, Southwest Regional Office, Olympia, Washington. June 4.

SAIC 2010b. *Remedial Investigation Work Plan Addendum, Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348, 1656 East J Street, Tacoma, Washington.* September.

SAIC, 2013. *Remedial Investigation Work Plan Addendum for Off-Property Investigation, Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348, 1656 East J Street, Tacoma, Washington.* April 30.

.

REPORT LIMITATIONS

This technical document was prepared on behalf of CEMC and is intended for its sole use and for use by the local, state, or federal regulatory agency that the technical document was sent to by Leidos. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and that Leidos shall have no responsibility or liability for the consequences thereof.

Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from CEMC and others. Leidos has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of Leidos site visits or site work and cannot be applied to conditions and features of which Leidos is unaware and has not had the opportunity to evaluate.

All sources of information on which Leidos has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied on by Leidos in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.

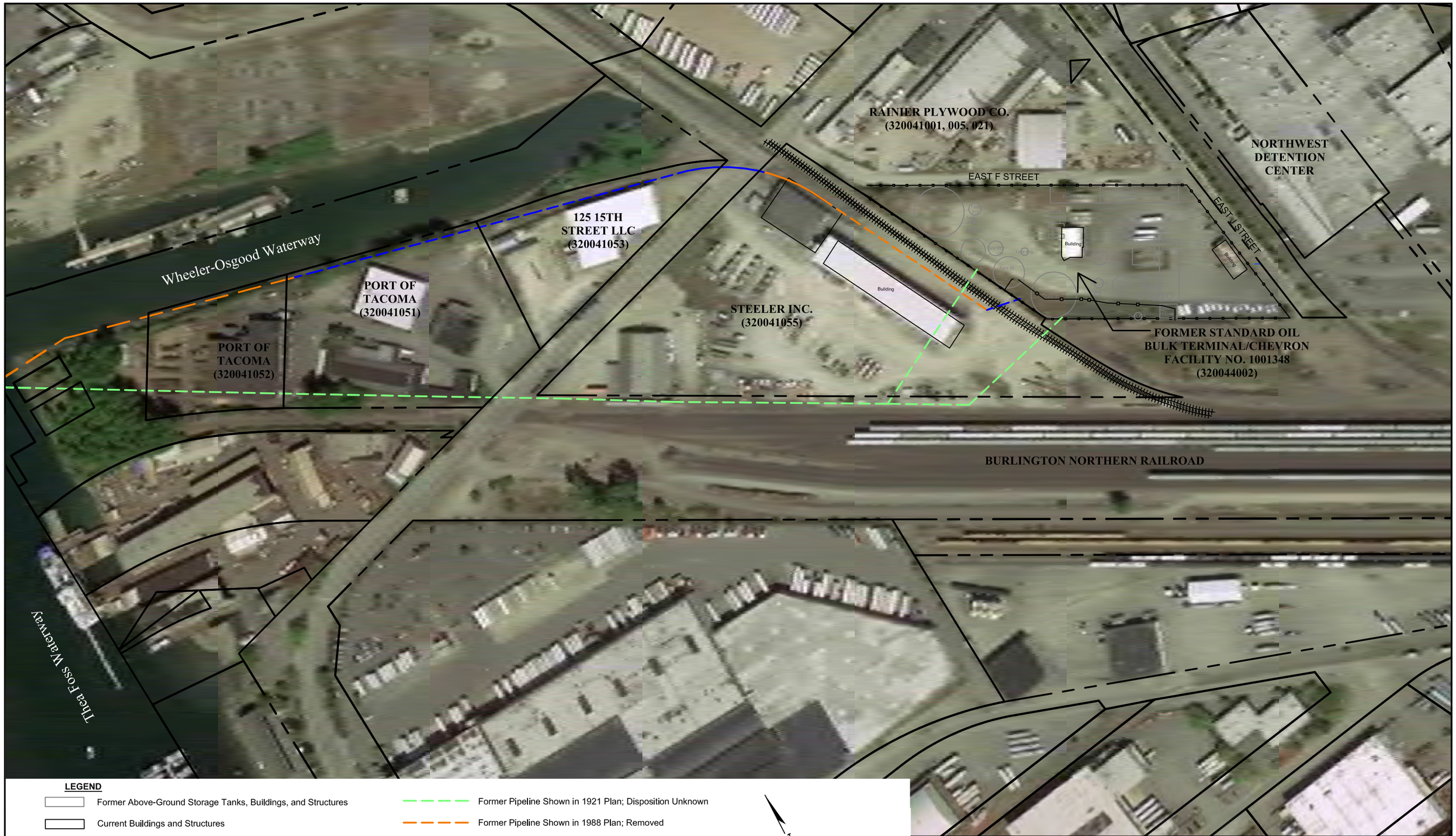
Figures

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 1
Vicinity Map

DATE: 08/19/2014 | DRAWING: 1001348_Site Vicinity Map.dwg



Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Figure 2
Site Map

DATE: 8/19/2014

DRAWING: 1001348 2010 Site Figures.dwg

EAST "F" STREET

Former Office

Former Garage

P-5

Tank #30

Tank #33

Tank #32

Tank #31

Loading Racks

Building

P-4

P-3

P-1

EAST "J" STREET

Tank #3

Tank #29

Tank #19

Tank #2

Tank #5

Former Garage

Former Buliding

P-2

Building

Building

Tank #1

Tank #10

Tank #11

Tank #4

Tanks #24 - 28

Tanks #20-23

Boiler House

Tank #18

Standard Oil Spur #1

Standard Oil Spur #2

Tank Car Loading

STEELER INC.

RAILROAD RIGHT-OF-WAY

N

0' 60' 120'

LEGEND

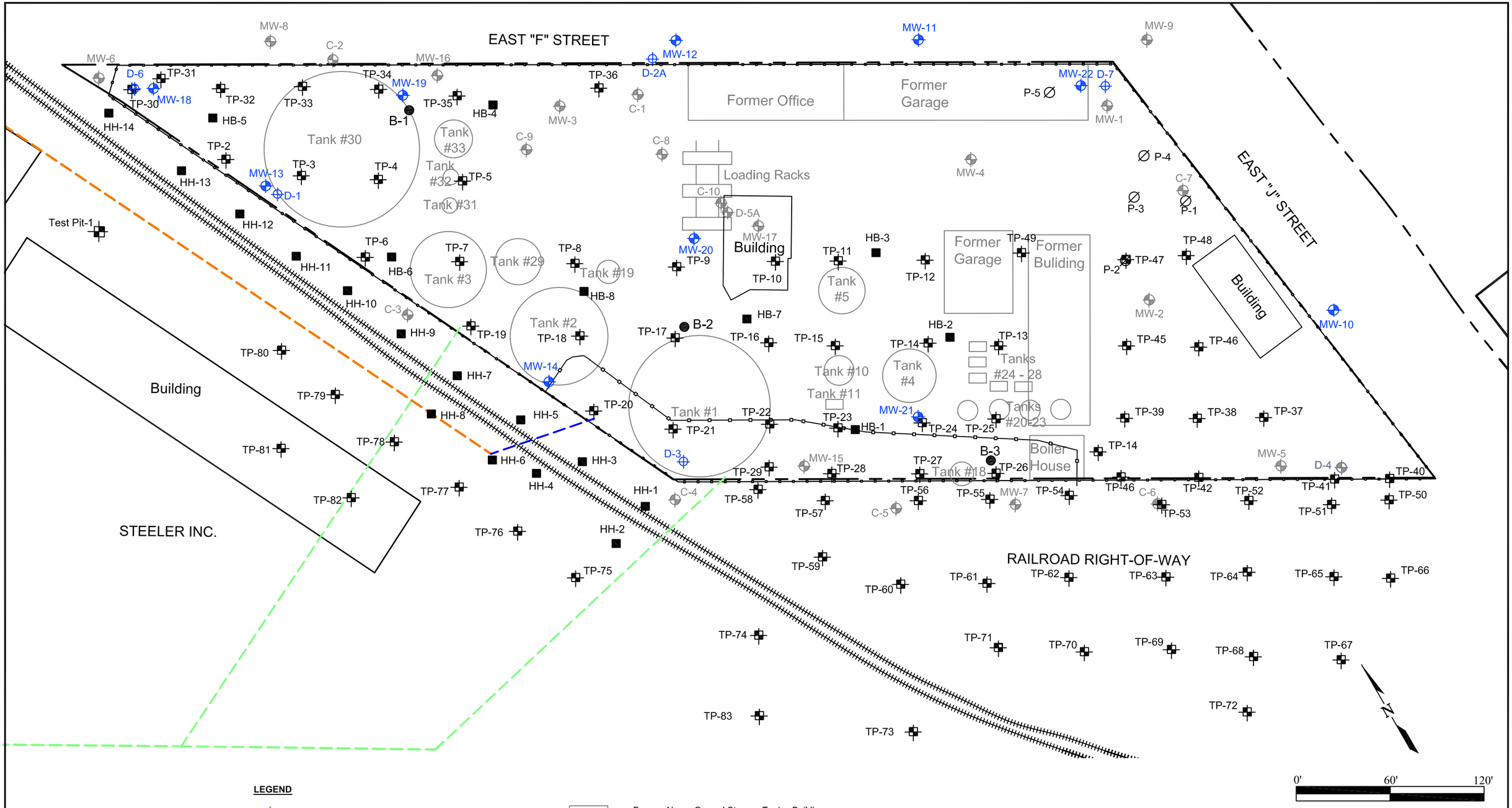
- Former Above-Ground Storage Tanks, Buildings, and Structures
- Current Buildings and Structures
- Property Boundary
- Former Pipeline Shown in 1921 Plan; Disposition Unknown
- Former Pipeline Shown in 1988 Plan; Removed
- Former Pipeline Shown in 1988 Plan; Left in Place

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 3
Historical Bulk Terminal Features

DATE: 8/19/2014 | DRAWING: 1001348 2010 Site Figures.dwg



LEGEND

- MW-14 — Monitoring Well Location (Shallow Aquifer)
- D-3 — Monitoring Well Location (Deep Aquifer)
- MW-6 — Abandoned/Destroyed Monitoring Well Location
- P-4 — Former Piezometer Location
- B-1 — Soil Boring Location (1992)
- TP-1 — Test Pit Location (1989-1990)
- Test Pit-1 — Test Pit Location (1997)
- HH-1 — Hand Auger Boring Location (1989 and 1990)

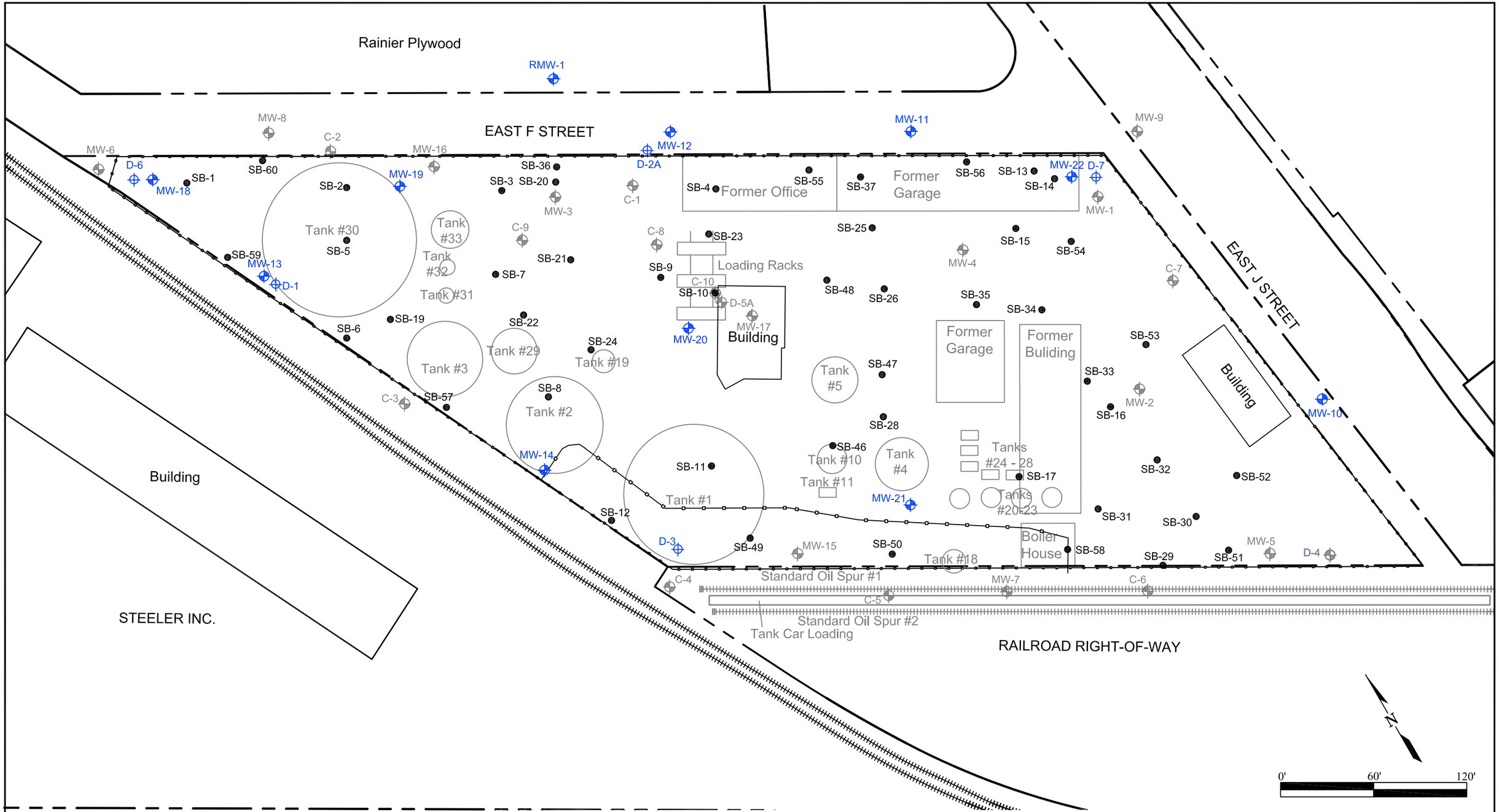
- Former Above-Ground Storage Tanks, Buildings, and Structures
- Current Buildings and Structures
- Property Boundary
- Former Pipeline Shown in 1921 Plan; Disposition Unknown
- Former Pipeline Shown in 1988 Plan; Removed
- Former Pipeline Shown in 1988 Plan; Left in Place

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 4
Historical Soil Boring and Test Pit Locations (1984 to 2001)

DATE: 8/19/2014 | DRAWING: 1001348 2010 Site Figures.dwg



LEGEND

MW-10	Monitoring Well Location (Shallow Aquifer)
D-1	Monitoring Well Location (Deep Aquifer)
MW-6	Abandoned/Destroyed Monitoring Well Location
SB-1	SAIC Soil Boring Locations
	Former Above-Ground Storage Tanks, Buildings, and Structures
	Current Buildings and Structures
	Property Boundary

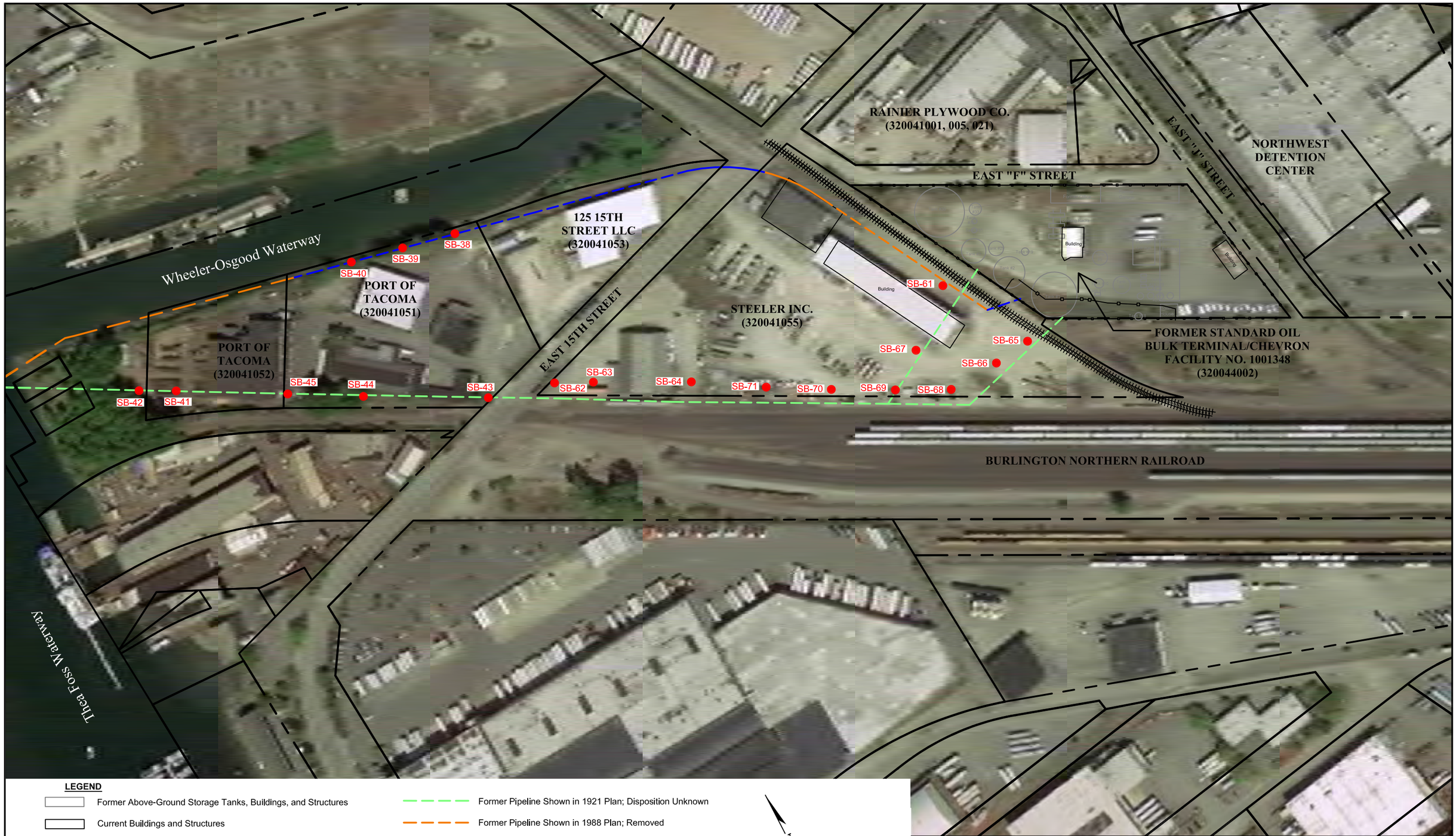
leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Figure 5
Remedial Investigation
Soil Boring Locations

DATE: 8/19/2014

DRAWING: 1001348 2010 Site Figures.dwg



LEGEND

- Former Above-Ground Storage Tanks, Buildings, and Structures
- Current Buildings and Structures
- Property Boundary
- Parcel Boundary
- Former Pipeline Shown in 1921 Plan; Disposition Unknown
- Former Pipeline Shown in 1988 Plan; Removed
- Former Pipeline Shown in 1988 Plan; Left in Place
- SB-38 Pipeline Soil Boring Locations

N

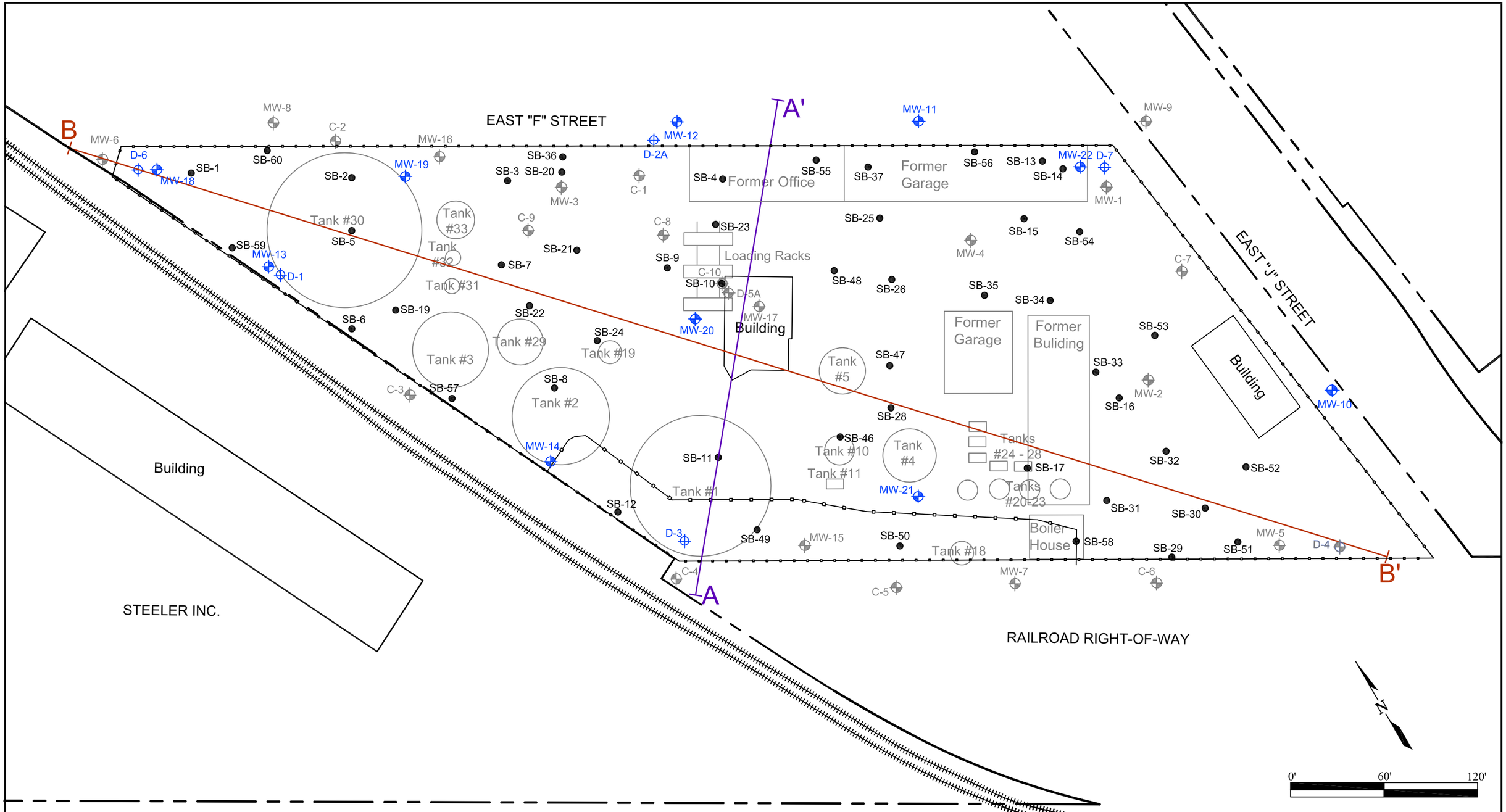
0 40' 80'

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Figure 6
Remedial Investigation Pipeline Soil Boring Locations

DATE:12/6/2014 | DRAWING: 1001348 2010 Site Figures.dwg



LEGEND

- MW-10 — Monitoring Well Location (Shallow Aquifer)
- D-1 — Monitoring Well Location (Deep Aquifer)
- MW-6 — Abandoned/Destroyed Monitoring Well Location
- SB-1 — SAIC Soil Boring Locations
- Former Above-Ground Storage Tanks, Buildings, and Structures
- Current Buildings and Structures
- Property Boundary
- A — A' Geologic Cross-Section Transect Line A-A'
- B — B' Geologic Cross-Section Transect Line B-B'

leidos

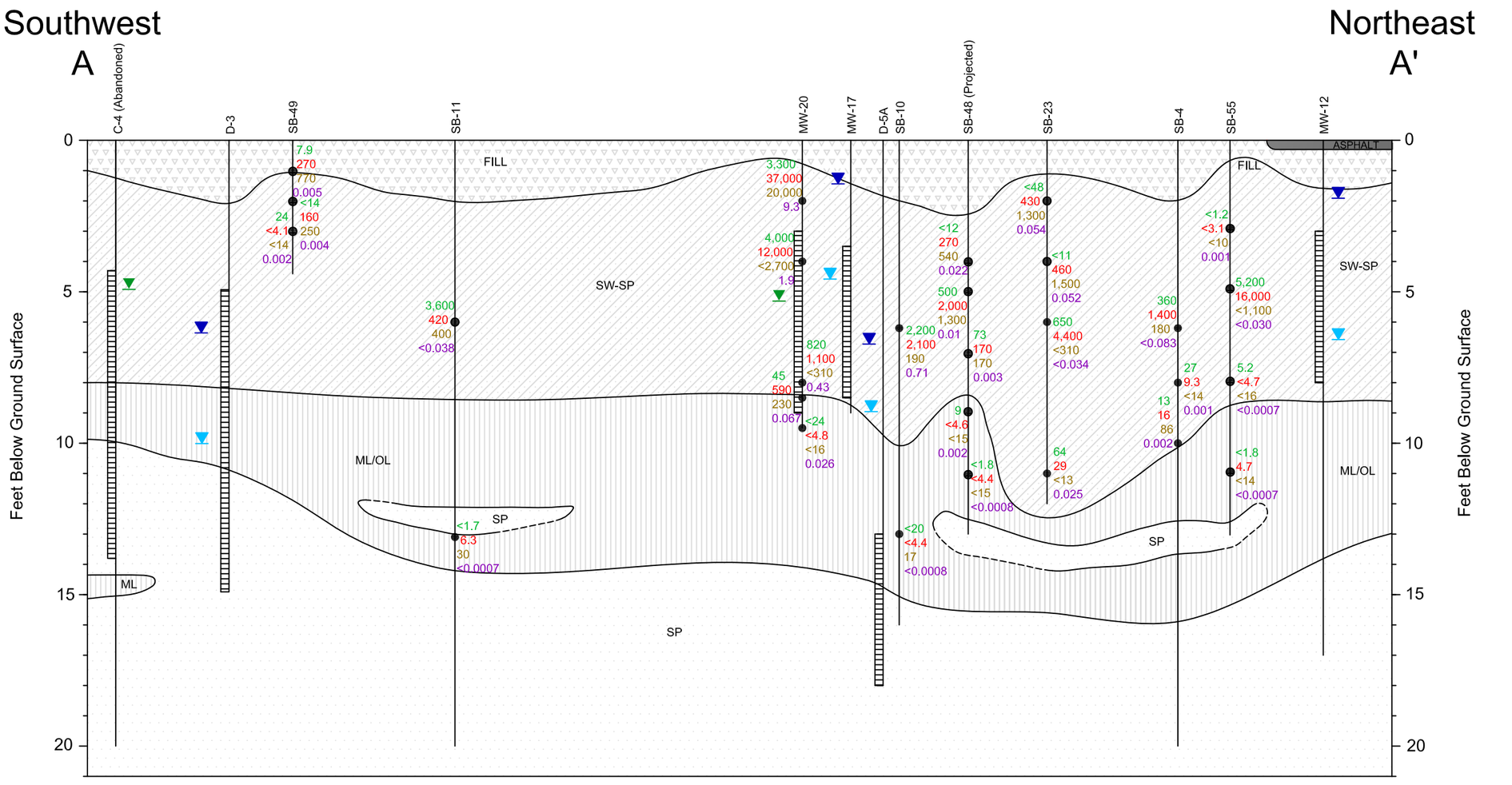
Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Figure 7
Geologic Cross-Section Transect Locations

DATE: 8/19/2014 | DRAWING: 1001348 2010 Site Figures.dwg

LEGEND:

- Boring
- Screened interval
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Only recorded groundwater elevation
- Soil analytical sample location
- 28 — Gasoline-range hydrocarbon concentration in mg/kg
- 10 — Diesel-range hydrocarbon concentration in mg/kg
- 200 — Heavy oil-range hydrocarbon concentration in mg/kg
- 0.001 — Benzene concentration in mg/kg
- Contact line between soil types (dashed where inferred)



0 15 30 60

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 4'

SOIL/ROCK CLASSIFICATION LEGEND:

- Asphalt
- Fill: Dark brown SAND with gravel and some silt and bricks.
- SW-SP: Brown, loose, fine to coarse SAND with shell fragments and 5% SILT.
- ML/OL: Brown to Gray, soft to stiff SILT with organics/plant debis and medium plasticity.
- SP: Brown, loose to dense, fine to medium SAND with <5% SILT.

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 8
Geologic Cross Section A-A'

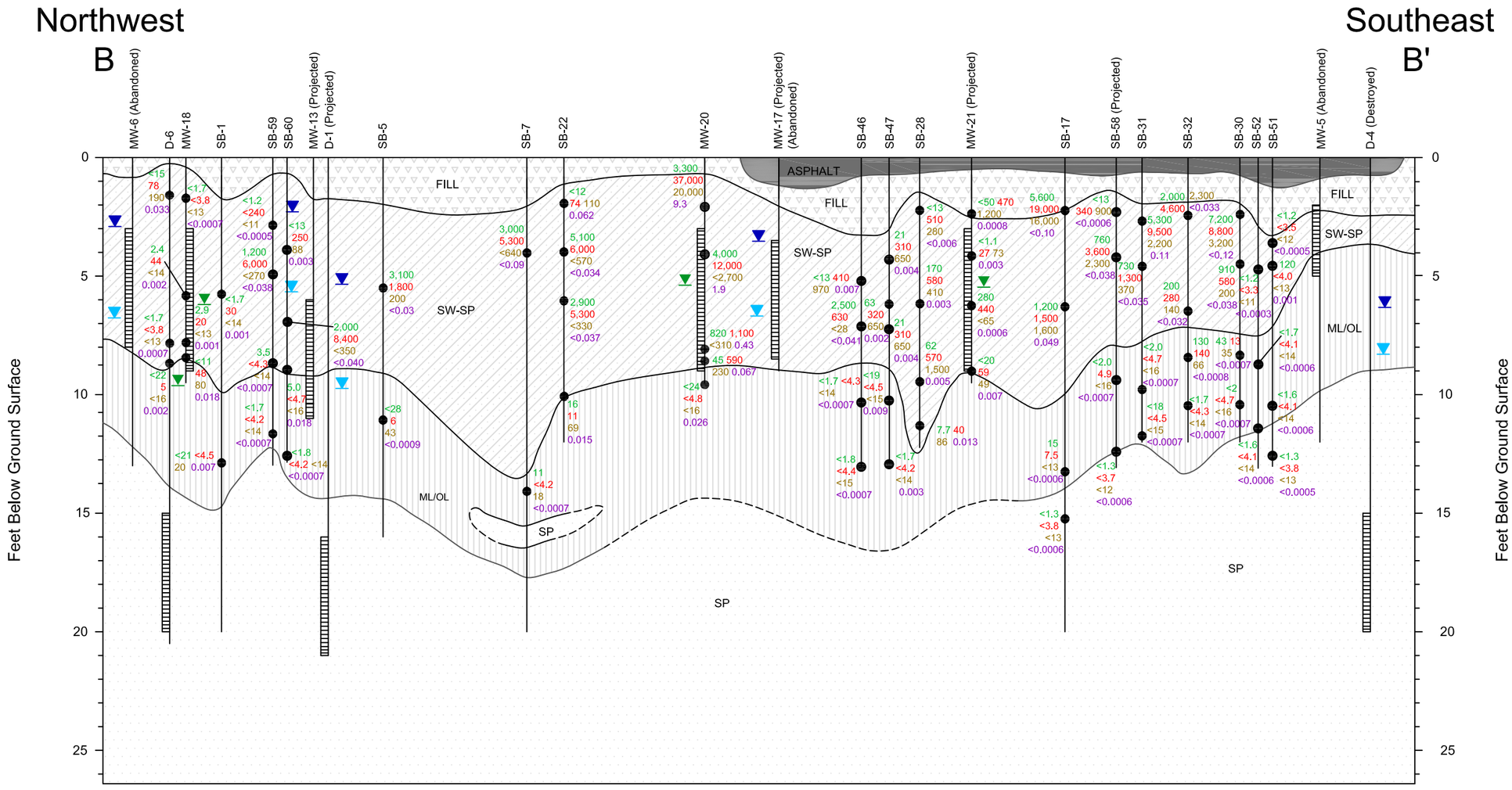
DATE: 03/28/2014 | DRAWING: 1001348 X-Sections.dwg

LEGEND:

- Boring
- Screened interval
- Highest recorded groundwater elevation
- Lowest recorded groundwater elevation
- Only recorded groundwater elevation
- Soil analytical sample location
- 28 — Gasoline-range hydrocarbon concentration in mg/kg
- 10 — Diesel-range hydrocarbon concentration in mg/kg
- 200 — Heavy oil-range hydrocarbon concentration in mg/kg
- 0.001 — Benzene concentration in mg/kg
- Contact line between soil types (dashed where inferred)

SOIL/ROCK CLASSIFICATION LEGEND:

- Asphalt
- Fill: Dark brown SAND with gravel and some silt and bricks.
- SW-SP: Brown, loose, fine to coarse SAND with shell fragments and 5% SILT.
- ML/OL: Brown to Gray, soft to stiff SILT with organics/plant debis and medium plasticity.
- SP: Brown, loose to dense, fine to medium SAND with <5% SILT.



0 20 40 80 160

HORIZONTAL SCALE: 1" = 80'
VERTICAL SCALE: 1" = 5'

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 9
Geologic Cross Section B-B'

DATE: 03/28/2014 | DRAWING: 1001348 X-Sections.dwg

MW-18	4/9/2013	9/26/2013	11/6/2013	1/9/2014
TPH-G	310	600	**1,000**	**940**
TPH-D	68	**4,300**	**3,700**	**6,300**
TPH-HO	<66	**760**	**650**	**1,100**
B	<0.5	1.6	1.9	2.2

Rainier Plywood

MW-19	4/9/2013	9/26/2013	11/6/2013	1/9/2014
TPH-G	**1,500**	**2,000**	**2,400**	**2,400**
TPH-D	400	**21,000**	**12,000**	**11,000**
TPH-HO	<66	**1,700**	**1,300**	<670
B	2.1	2.5	3.2	3.8

MW-12	4/9/2013	9/25/2013	11/5/2013	1/8/2014
TPH-G	260	420	220	260
TPH-D	<28	**6,800**	**4,300**	**8,900**
TPH-HO	<66	**870**	380	**1,900**
B	<0.5	0.6	<0.5	<0.5

MW-11	4/8/2013*	9/25/2013*	11/5/2013*	1/7/2014*
TPH-G	--	--	--	--
TPH-D	--	--	--	--
TPH-HO	--	--	--	--
B	--	--	--	--

MW-22	4/9/2013	9/25/2013	11/5/2013	1/8/2014
TPH-G	52	350	360	390
TPH-D	<28	**3,300**	**3,500**	**3,200**
TPH-HO	<66	**1,200**	**1,800**	**930**
B	<0.5	0.7	0.7	<2.0

MW-13	4/9/2013	9/26/2013	11/6/2013	1/9/2014
TPH-G	<50	370	120	400
TPH-D	83	**4,000**	**3,100**	**4,000**
TPH-HO	<67	460	**620**	**630**
B	<0.5	0.9	<0.5	0.5

MW-14	4/9/2013	9/26/2013	11/6/2013	1/8/2014
TPH-G	<50	<51	<50	<50
TPH-D	<28	**720**	480	**530**
TPH-HO	<66	**550**	310	440
B	<0.5	<0.5	<0.5	<0.5

MW-21	4/9/2013	9/26/2013	11/5/2013	1/8/2014
TPH-G	230	520	370	370
TPH-D	43	**2,400**	**2,500**	**2,100**
TPH-HO	<66	**870**	**1,400**	**600**
B	<0.5	<2.5	<0.5	<2.0

MW-10	4/9/2013	9/25/2013	11/5/2013	1/8/2014
TPH-G	<50	<50	74	110
TPH-D	<28	**2,700**	**2,400**	**4,400**
TPH-HO	<66	**1,100**	450	**1,100**
B	<0.5	<0.5	<0.5	<0.5

EAST F STREET

EAST J STREET

Former Office

Former Garage

Former Garage

Former Buliding

Loading Racks

Building

Building

Boiler House

Tanks #24 - 28

Tanks #20-23

Tank #30

Tank #33

Tank #32

Tank #31

Tank #3

Tank #29

Tank #19

Tank #2

Tank #1

Tank #5

Tank #10

Tank #11

Tank #4

Tank #18

STEELER INC.

RAILROAD RIGHT-OF-WAY

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 MW-11 MW-12 MW-13 MW-14 MW-15 MW-16 MW-17 MW-18 MW-19 MW-20 SPH MW-21 MW-22

D-1 D-2A D-3 D-4 D-5A D-6 D-7

C-1 C-2 C-3 C-4 C-5 C-6 C-7 C-8 C-10

95.50 95.52 MW-18

95.63 MW-13

95.84 MW-19

95.42 MW-12

94.22 MW-11

95.00

94.75 MW-22

94.50

95.54 MW-14

96.83 MW-21

94.37 MW-10

96.00

96.50

96.96

96.00

95.50

95.00

94.50

N

0' 60' 120'

Well ID	Date
TPH-G	Gasoline-Range Hydrocarbons
TPH-D	Diesel-Range Hydrocarbons
TPH-HO	Heavy Oil-Range Hydrocarbons
B	Benzene

All Results are in Micrograms Per Liter (µg/L)

< Less Than the Stated Laboratory Detection Limit Threshold

Bold Analytes Detected Above MTCA Method A Cleanup Levels

* Insufficient Water to Collect Sample

SPH Not Sampled due to the Presence of Separate Phase Hydrocarbons (SPH)

LEGEND

MW-10 Monitoring Well Location (Shallow Aquifer)

D-1 Monitoring Well Location (Deep Aquifer)

MW-6 Abandoned/Destroyed Monitoring Well Location

Property Boundary

95.54 Groundwater Elevation in Feet

[94.22] Groundwater Elevation Not Used in Contours

96.00 Groundwater Elevation Contours at a 0.5 Foot Interval (Dashed Where Inferred)

Approximate Groundwater Flow Direction at a Gradient of 0.003 to 0.01 Feet per Foot

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 10
Shallow Aquifer Potentiometric Map and Analytical Results
January 7-9, 2014

DATE: 12/6/2014 | DRAWING: 1001348 2010 Site Figures.dwg

D-6	4/9/2013	9/26/2013	11/6/2013	1/9/2014
TPH-G	140	170	250	180
TPH-D	<29	**5,000**	**4,000**	**6,900**
TPH-HO	<67	450	350	**1,100**
B	0.7	<0.5	<0.5	<2.0

D-2A	4/9/2013	9/26/2013	11/6/2013	1/9/2014
TPH-G	<50	<50	<50	<50
TPH-D	<29	**3,700**	**2,800**	**3,100**
TPH-HO	<67	**1,000**	**740**	**620**
B	<0.5	<0.5	<0.5	<2.0

D-7	4/9/2013	9/25/2013	11/5/2013	1/8/2014
TPH-G	<50	<50	<50	<50
TPH-D	<29	**990**	**790**	**1,500**
TPH-HO	<67	420	210	**740**
B	<0.5	<0.5	<0.5	<2.0

D-1	4/9/2013	9/26/2013	11/6/2013	1/9/2014
TPH-G	99	99	120	110
TPH-D	<28	**5,200**	**3,600**	**6,100**
TPH-HO	<66	**590**	300	**710**
B	<0.5	<0.5	<0.5	<0.5

D-3	4/9/2013	9/26/2013	11/6/2013	1/8/2014
TPH-G	77	<50	52	<50
TPH-D	<28	**3,000**	**3,400**	**4,400**
TPH-HO	<66	350	430	**860**
B	<0.5	<0.5	<0.5	<0.5

Rainier Plywood
RMW-1
EAST F STREET
EAST J STREET
MW-8
MW-6
88.75
D-6
MW-18
C-2
MW-16
MW-19
D-2A
92.08
C-1
MW-12
MW-11
MW-9
MW-22
92.04
D-7
MW-1
Former Office
Former Garage
Tank #30
Tank #33
Tank #32
Tank #31
MW-3
C-9
C-8
MW-13
D-1
92.07
Loading Racks
C-10
D-5A
MW-17
Building
MW-20
MW-4
C-7
Tank #3
Tank #29
Tank #19
C-3
Tank #2
MW-14
Tank #5
Former Garage
Former Buliding
MW-2
Building
MW-10
Building
Tank #1
92.05
D-3
Tank #10
Tank #11
Tank #4
MW-21
Tanks #24 - 28
Tanks #20-23
MW-15
Tank #18
Boiler House
MW-5
D-4
C-4
C-5
MW-7
C-6
STEELER INC.
RAILROAD RIGHT-OF-WAY
N
0'
60'
120'

LEGEND

- MW-10 — Monitoring Well Location (Shallow Aquifer)
- D-1 — Monitoring Well Location (Deep Aquifer)
- MW-6 — Abandoned/Destroyed Monitoring Well Location
- Property Boundary
- 92.05 — Groundwater Elevation in Feet
- Approximate Groundwater Flow Direction

Well ID	Date
TPH-G	Gasoline-Range Hydrocarbons
TPH-D	Diesel-Range Hydrocarbons
TPH-HO	Heavy Oil-Range Hydrocarbons
B	Benzene

All Results are in Micrograms Per Liter (µg/L)

< Less Than the Stated Laboratory Detection Limit Threshold

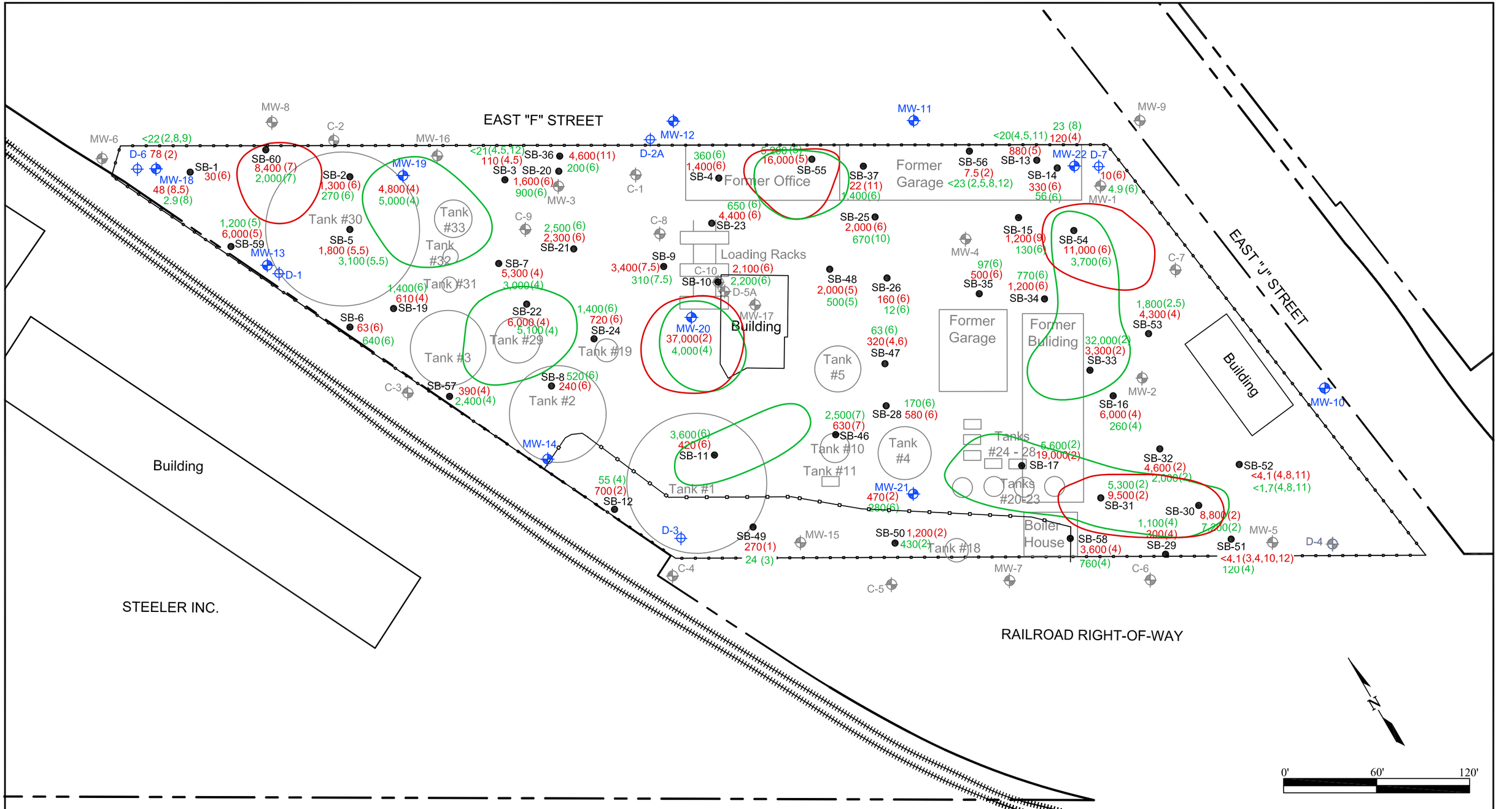
Bold Analytes Detected Above MTCA Method A Cleanup Levels

leidos

Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

FIGURE 11
Deep Aquifer Groundwater Elevation Map and Analytical Results January 7-9, 2014

DATE: 12/6/2014 | DRAWING: 1001348 2010 Site Figures.dwg


EAST "F" STREET
EAST "J" STREET
STEELER INC.
RAILROAD RIGHT-OF-WAY
Building
Former Office
Former Garage
Former Buliding
Loading Racks
Tank #30
Tank #33
Tank #32
Tank #31
Tank #3
Tank #29
Tank #2
Tank #19
Tank #5
Tank #10
Tank #11
Tank #4
Tank #1
Tanks #24 - 28
Tanks #20-23
Tank #18
Boiler House
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
MW-20
MW-21
MW-22
D-1
D-2A
D-3
D-4
D-5A
D-6
D-7
C-1
C-2
C-3
C-4
C-5
C-6
C-7
C-8
C-9
C-10
SB-1 30 (6)
SB-2 1,300 (6) 270 (6)
SB-3 SB-20 1,600 (6) 900 (6)
SB-4 360 (6) 1,400 (6)
SB-5 1,800 (5.5) 3,100 (5.5)
SB-6 63 (6) 640 (6)
SB-7 5,300 (4) 3,000 (4)
SB-8 520 (6) 240 (6)
SB-9 3,400 (7.5) 310 (7.5)
SB-10 2,200 (6)
SB-11 3,600 (6) 420 (6)
SB-12 55 (4) 700 (2)
SB-13 880 (5)
SB-14 330 (6) 56 (6)
SB-15 1,200 (9) 130 (6)
SB-16 6,000 (4) 260 (4)
SB-17 5,600 (2) 19,000 (2)
SB-22 6,000 (4) 5,100 (4)
SB-23 650 (6) 4,400 (6)
SB-24 1,400 (6) 720 (6)
SB-25 2,000 (6) 670 (10)
SB-26 160 (6) 12 (6)
SB-27 63 (6) 320 (4,6)
SB-28 170 (6) 580 (6)
SB-29 <4.1 (3,4,10,12) 120 (4)
SB-30 8,800 (2) 7,200 (2)
SB-31 5,300 (2) 9,500 (2)
SB-32 4,600 (2) 2,000 (2)
SB-33 32,000 (2) 3,300 (2)
SB-34 770 (6) 1,200 (6)
SB-35 97 (6) 500 (6)
SB-36 4,600 (11) 200 (6)
SB-37 22 (11) 1,400 (6)
SB-46 2,500 (7) 630 (7)
SB-47 2,000 (5) 500 (5)
SB-48 2,000 (5) 500 (5)
SB-49 270 (1) 24 (3)
SB-50 1,200 (2) 430 (2)
SB-51 <4.1 (3,4,10,12) 120 (4)
SB-52 <4.1 (4,8,11) <1.7 (4,8,11)
SB-53 1,800 (2.5) 4,300 (4)
SB-54 11,000 (6) 3,700 (6)
SB-55 5,200 (5) 16,000 (5)
SB-56 7.5 (2)
SB-57 390 (4) 2,400 (4)
SB-58 3,600 (4) 760 (4)
SB-59 1,200 (5) 6,000 (5)
SB-60 8,400 (7) 2,000 (7)
<22 (2,8,9)
<21 (4.5,12) 110 (4.5)
<20 (4,5,11)
<23 (2,5,8,12)
23 (8) 120 (4)
10 (6)
4.9 (6)
78 (2)
48 (8.5) 2.9 (8)
4,800 (4) 5,000 (4)
2,500 (6) 2,300 (6)
1,400 (6) 610 (4)
3,100 (6) 2,400 (6)
2,500 (7) 630 (7)
3,600 (6) 420 (6)
1,100 (4) 300 (4)
470 (2) 280 (6)
0'
60'
120'
N
LEGEND
MW-10 Monitoring Well Location (Shallow Aquifer)
D-1 Monitoring Well Location (Deep Aquifer)
MW-6 Abandoned/Destroyed Monitoring Well Location
SB-1 SAIC Soil Boring Locations
Former Above-Ground Storage Tanks, Buildings, and Structures
Current Buildings and Structures
Property Boundary
Approximate Extent of Soil Above MTCA Method C Cleanup Levels = 3,266 mg/kg
2,400 (4) Gasoline-Range Hydrocarbon Concentrations in mg/kg and Sample Depth in Feet Below Ground Surface
Approximate Extent of Soil Above MTCA Method C Cleanup Levels = 7,742 mg/kg
2,300 (6) Diesel-Range Hydrocarbon Concentrations in mg/kg and Sample Depth in Feet Below Ground Surface
leidos
Former Standard Oil Bulk Terminal/
Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington
Figure 12
Gasoline-Range and Diesel-Range Hydrocarbons in Soil Above MTCA Method C Cleanup Levels
DATE: 8/19/2014
DRAWING: 1001348 2010 Site Figures.dwg

Tables

Table 2-1
Historical Soil Analytical Results
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Number	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
MW-01	MW-01-89	2/7/1989	2.0	<0.05	<0.05	<0.05	<0.05	--	--
	MW-01-89	2/7/1989	5.5	<0.05	<0.05	<0.05	<0.05	--	--
MW-02	MW-02-89	2/7/1989	2.0	<0.05	1.79	0.57	7	--	--
	MW-02-89	2/7/1989	4.5	<0.05	7	0.47	19	--	--
MW-03	MW-03-89	2/8/1989	2.0	0.63	32	2	33	--	--
	MW-03-89	2/8/1989	4.5	<0.05	3	0.08	5	--	--
MW-04	MW-04-89	2/8/1989	4.5	0.08	4	0.79	12	--	--
	MW-04-89	2/8/1989	9.5	<0.05	0.89	0.15	3	--	--
MW-05	MW-05-89	2/8/1989	2.0	<0.05	14	0.59	35	--	--
	MW-05-89	2/8/1989	4.5	<0.05	0.64	<0.05	2	--	--
MW-06	MW-06-89	2/8/1989	2.0	<0.05	<0.05	<0.05	<0.05	--	--
	MW-06-89	2/8/1989	4.5	<0.05	<0.05	<0.05	<0.05	--	--
MW-07	MW-07-89	2/15/1989	3.5	0.89	5	2	25	--	--
	MW-07-89	2/15/1989	8.5	<0.05	<0.05	0.08	0.68	--	--
MW-08	MW-08-89	2/16/1989	3.5	0.86	9	2	26	--	--
MW-09	MW-09-89	2/16/1989	3.5	<0.05	<0.05	<0.05	0.12	--	--
	MW-09-89	2/16/1989	8.5	<0.05	<0.05	<0.05	0.1	--	--
MW-10	MW-10-89	2/17/1989	3.5	<0.05	<0.05	<0.05	0.06	--	--
MW-11	MW-11-89	2/17/1989	8.5	<0.05	<0.05	<0.05	<0.05	--	--
MW-12	MW-12-89	2/17/1989	8.5	<0.05	<0.05	<0.05	<0.05	--	--
HB-01	HB-01-89	2/7/1989	3.5	0.46	0.33	3	5	--	--
HB-02	HB-02-89	2/7/1989	4.0	<0.05	0.7	<0.05	2	--	--
HB-03	HB-03-89	2/7/1989	7.0	<0.05	0.53	<0.05	2	--	--
HB-04	HB-04-89	2/8/1989	3.5	0.49	10	2	15	--	--
HB-04	HB-04-89	2/8/1989	10.0	<0.05	2	<0.05	7	--	--
HB-05	HB-05-89	2/9/1989	4.5	0.26	6	1	18	--	--
HB-06	HB-06-89	2/9/1989	3.5	--	--	--	--	--	--
	HB-06-89	2/9/1989	8.5	<0.05	0.08	0.05	0.87	--	--
HB-07	HB-07-89	2/10/1989	3.5	0.13	6	0.64	10	--	--
HB-08	HB-08-89	2/10/1989	3.0	0.12	5	0.52	8	--	--
MW-13	MW-13-89	9/27/1989	4.5	<0.025	2	0.6	10	--	--
MW-14	MW-14-89	9/28/1989	8.0	<0.039	<0.039	<0.039	<0.039	--	--
MW-15	MW-15-89	9/27/1989	7.5	0.6	0.12	0.18	1	--	--

Table 2-1
Historical Soil Analytical Results
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Number	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
MW-16	MW-16-89	9/26/1989	3.0	<0.025	<0.025	0.12	0.46	--	--
MW-17	MW-17-89	9/26/1989	3.0	4	7	27	120	--	--
	MW-17-89	9/26/1989	8.0	<0.037	0.11	0.35	0.62	--	--
D-01	D-01-89	9/26/1989	8.0	<0.036	<0.036	<0.036	<0.036	--	--
	D-01-89	9/26/1989	13.0	<0.025	<0.025	<0.025	<0.025	--	--
D-02	D-02-89	9/26/1989	3.0	<0.025	11	0.5	33	--	--
	D-02-89	9/26/1989	18.0	<0.025	<0.025	<0.025	<0.025	--	--
D-03	D-03-89	9/26/1989	3.0	<0.025	5	0.57	13	--	--
	D-03-89	9/26/1989	8.0	0.1	2	<0.041	0.53	--	--
D-04	D-04-89	9/26/1989	8.0	<0.037	<0.037	<0.037	<0.037	--	--
	D-04-89	9/26/1989	13.0	<0.025	<0.025	<0.025	<0.025	--	--
D-05	D-05-89	9/26/1989	13.0	<0.025	<0.025	<0.025	<0.025	--	--
TP-53	TP-53-90	1/3/1990	6.5	--	--	--	--	250	<50
TP-55	TP-55-90	1/3/1990	7.0	--	--	--	--	1,000	5,600
TP-57	TP-57-90	1/3/1990	7.0	--	9.4	--	--	--	--
TP-79	TP-79-90	1/3/1990	7.0	--	--	--	--	**9,500**	<500
HH-09	HH-09-90	1/2/1990	5.0	--	--	--	--	1,300	1,300
B-01	B-01-92	9/14/1992	3.0	<0.001	<0.005	0.004	0.007	<1	<1
	B-01-92	9/14/1992	8.0	--	--	--	--	--	--
	B-01-92	9/14/1992	13.0	<0.001	<0.005	<0.001	<0.001	<1	<1
B-02	B-02-92	9/14/1992	3.0	<0.001	<0.005	<0.001	5	<1	<1
	B-02-92	9/14/1992	8.0	--	--	--	--	--	--
	B-02-92	9/14/1992	13.0	<0.001	0.011	<0.001	<0.001	<1	<1
B-03	B-03-92	9/29/1992	3.0	<0.001	<0.005	<0.001	<0.001	<1	<1
MW-03-92	MW-03-92	9/29/1992	8.0	--	--	--	--	--	--
MW-03	MW-03-92	9/29/1992	13.0	<0.001	0.012	<0.001	<0.001	<1	<1
Preliminary Cleanup Levels				***NA***	***NA***	***NA***	***NA***	***3,266***	***7,742***

Table 2-1
Historical Soil Analytical Results
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Number	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)

EXPLANATIONS:
BTEX = Benzene, Ethylbenzene, Toluene, Total Xylenes
(ft) = Feet
(mg/kg) - Milligrams per Kilogram
NA = Not Applicable
TPH = Total Petroleum Hydrocarbons
TPH-GRO = TPH as Gasoline-Range Organics
TPH-DRO = TPH as Diesel-Range Organics
-- = Not Measured/Not Analyzed
< = Detected Below Laboratory Detection Limits

NOTES:
TPH-GRO and TPH-DRO analyzed per USEPA Method 8015 Modified.
BTEX analyzed per USEPA Method 8020.
Bold results indicate results that exceed Preliminary Cleanup Levels.
Consult original laboratory analysis reports for analytical methods.

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-1	SB-1-6	7/6/2010	6.0	0.0010	<0.5	<0.5	<0.5	--	<1.7	30	<14	--
	SB-1-13	7/7/2010	13.0	0.0070	<0.001	<0.001	0.002	--	<21	<4.5	20	--
SB-2	SB-2-6	7/6/2010	6.0	<0.036[1]	<0.071	<0.071	<0.071	--	270	1,300	200	--
	SB-2-12	7/7/2010	12.0	0.0050	<0.001	<0.001	<0.001	--	21	48	73	--
SB-3	SB-3-4.5	7/6/2010	4.5	0.003	<0.001	0.007	0.004	--	<15	110	120	--
	SB-3-12	7/7/2010	12.0	0.001	<0.002	<0.002	<0.002	--	<21	11	110	--
SB-4	SB-4-6	7/6/2010	6.0	<0.033[1]	<0.066	<0.066	<0.066	<0.0749	360	1,400	180	2.62
	SB-4-8	7/8/2010	8.0	0.001	<0.001	<0.001	<0.001	--	27	9.3	<14	--
	SB-4-10	7/8/2010	10.0	0.002	<0.002	<0.002	<0.002	--	13	16	86	--
SB-5	SB-5-5.5	7/6/2010	5.5	<0.030[1]	0.097	<0.060	<0.060	--	3,100	1,800	200	--
	SB-5-11	7/7/2010	11.0	<0.0009	<0.002	<0.002	<0.002	--	<28	6	43	--
SB-6	SB-6-6	7/7/2010	6.0	<0.0311	<0.062	<0.062	<0.062	--	640	63	21	--
	SB-6-11	7/7/2010	11.0	0.0008	<0.001	<0.001	<0.001	--	<20	5.1	38	--
SB-7	SB-7-4	7/7/2010	4.0	<0.090[1]	<0.18	<0.18	<0.18	--	3,000	5,300	<640	--
	SB-7-14	7/7/2010	14.0	<0.0007	<0.001	<0.001	<0.001	--	11	<4.2	18	--
SB-8	SB-8-6	7/7/2010	6.0	<0.031[1]	<0.063	<0.063	<0.063	--	520	240	130	--
	SB-8-12	7/7/2010	12.0	--	--	--	--	--	<16	17	140	--
SB-9	SB-9-7.5	7/7/2010	7.5	<0.035[1]	<0.071	<0.071	<0.071	--	310	3,400	1,100	--
	SB-9-11	7/8/2010	11.0	0.01	0.004	0.002	0.005	--	7.5	8.8	<12	--
SB-10	SB-10-6	7/7/2010	6.0	**0.71**	0.88	<0.10	0.18	--	2,200	2,100	190	17.7
	SB-10-13	7/8/2010	13.0	<0.0008	<0.002	<0.002	<0.002	--	<20	<4.4	17	--
SB-11	SB-11-6	7/7/2010	6.0	<0.040[1]	0.71	<0.079	0.94	--	1,400	420	400	--
	DUP-1-070710	7/7/2010	6.0	<0.038[1]	0.72	<0.076	0.92	--	**3,600**	390	240	--
	SB-11-13	7/7/2010	13.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	6.3	30	--
SB-12	SB-12-2	7/8/2010	2.0	<0.0005	<0.001	<0.001	<0.001	--	6.9	700	1,300	--
	DUP-2-070810	7/8/2010	2.0	0.006	0.002	0.011	0.011	--	14	340	710	--
	SB-12-4	7/8/2010	4.0	0.002	0.002	0.002	<0.001	--	55	94	97	--

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-13	SB-13-4	7/8/2010	4.0	0.005	<0.002	<0.002	<0.002	--	<20	150	310	--
	SB-13-5	7/8/2010	5.0	<0.0006	<0.001	<0.001	<0.001	--	<17	880	260	--
	SB-13-11	7/8/2010	11.0	<0.0007	<0.001	<0.001	<0.001	--	<20	<4.5	24	--
SB-14	SB-14-4	7/8/2010	4.0	<0.0006	<0.001	<0.001	<0.001	--	<14	150	360	--
	SB-14-6	7/8/2010	6.0	0.0009	<0.001	<0.001	<0.001	--	56	330	90	--
	SB-14-12	7/8/2010	12.0	<0.0007	<0.001	<0.001	<0.001	--	1.8	<4.4	<15	--
SB-15	SB-15-4	7/9/2010	4.0	<0.0007	<0.001	<0.001	<0.001	--	18	280	130	--
	SB-15-6	7/9/2010	6.0	<0.041[1]	<0.081	<0.081	<0.081	--	130	210	<14	--
	SB-15-9	7/9/2010	9.0	0.0006	<0.001	<0.001	<0.001	--	11	1,200	130	--
	SB-15-12	7/9/2010	12.0	<0.0006	<0.001	<0.001	<0.001	--	<1.7	<4.3	<14	--
SB-16	SB-16-2	7/9/2010	2.0	0.003	<0.001	<0.001	<0.001	--	<18	400	910	--
	SB-16-4	7/9/2010	4.0	<0.037[1]	<0.074	<0.074	0.099	--	260	6,000	4,700	2.04
	SB-16-8	7/9/2010	8.0	<0.001	<0.002	<0.002	<0.002	--	200	130	120	--
	DUP-3-070910	7/9/2010	8.0	<0.001	<0.002	<0.002	<0.002	--	97	210	210	--
	SB-16-11	7/9/2010	11.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	<3.9	<13	--
	SB-16-13	7/9/2010	13.0	<0.0006	<0.001	<0.001	<0.001	--	<1.4	<3.7	<12	--
SB-17	SB-17-2	7/9/2010	2.0	<0.10[1]	<0.21	<0.21	0.86	--	**5,600**	**19,000**	16,000	--
	SB-17-6	7/9/2010	6.0	**0.049**	0.14	0.096	0.44	<0.0700	1,200	1,500	1,600	33.1
	SB-17-13	7/9/2010	13.0	<0.0006	<0.001	<0.001	<0.001	--	15	7.5	<13	--
	SB-17-15	7/9/2010	15.0	<0.0006	<0.001	<0.001	<0.001	--	<1.3	<3.8	<13	--
SB-19	SB-19-2	10/25/2010	2.0	0.006	<0.001	0.006	0.003	--	<1.2	<3.3	<11	--
	SB-19-4	10/25/2010	4.0	0.001	<0.001	<0.001	<0.001	--	12	610	150	--
	SB-19-6	10/25/2010	6.0	<0.037[1]	<0.073	<0.073	<0.073	--	1,400	490	<67	--
	SB-19-11	10/25/2010	11.0	<0.0006	<0.001	<0.001	<0.001	--	23	18	56	--
SB-20	SB-20-4	10/25/2010	4.0	0.001	<0.001	<0.001	<0.001	--	<1.3	42	180	--
	SB-20-6	10/25/2010	6.0	<0.037[1]	<0.073	<0.073	<0.073	--	900	1,600	<130	--
	SB-20-10	10/25/2010	10.0	0.002	<0.001	<0.001	<0.001	--	78	150	<63	--
	SB-20-11	10/25/2010	11.0	0.001	<0.001	<0.001	<0.001	--	11	14	<13	--

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-21	SB-21-4	10/25/2010	4.0	0.002	<0.001	0.002	<0.001	--	<13	480	<210	--
	SB-21-6	10/25/2010	6.0	<0.0371	0.076	<0.074	<0.074	--	2,500	2,300	<130	--
	SB-21-11	10/25/2010	11.0	0.006	0.002	<0.001	0.002	--	1.7	9.4	<13	--
SB-22	SB-22-2	10/26/2010	2.0	**0.062**	<0.001	0.072	0.018	--	<12	74	110	--
	SB-22-4	10/26/2010	4.0	<0.034[1]	3.2	<0.067	0.25	--	**5,100**	6,000	<570	--
	SB-22-6	10/26/2010	6.0	<0.037[1]	4.1	0.082	0.58	--	2,900	5,300	<330	--
	DUP-1-102610	10/26/2010	6.0	<0.038[1]	3.8	<0.075	0.63	--	2,400	5,100	<330	--
	SB-22-10	10/26/2010	10.0	0.015	0.003	<0.002	<0.002	--	16	11	69	--
SB-23	SB-23-2	10/25/2010	2.0	**0.054**	0.003	0.091	0.039	--	<48[1]	430	1,300	--
	SB-23-4	10/25/2010	4.0	**0.052**	0.001	0.075	0.028	--	<11	460	1,500	--
	SB-23-6	10/25/2010	6.0	<0.034[1]	<0.068	<0.068	<0.068	--	650	4,400	<310	--
	SB-23-11	10/25/2010	11.0	0.025	0.002	0.003	0.005	--	64	29	<13	--
SB-24	SB-24-2	10/26/2010	2.0	0.007	<0.001	0.009	0.002	--	<12	420	1,600	--
	SB-24-4	10/26/2010	4.0	0.0007	<0.001	0.002	<0.001	--	18	310	210	--
	SB-24-6	10/26/2010	6.0	<0.032[1]	<0.064	<0.064	<0.064	--	1,400	720	240	--
	SB-24-10	10/26/2010	10.0	0.013	<0.001	0.003	0.006	--	13	7.7	<13	--
SB-25	SB-25-4	10/26/2010	4.0	<0.0006	<0.001	<0.001	<0.001	--	<13	230	350	--
	SB-25-6	10/26/2010	6.0	0.0009	<0.001	<0.001	<0.001	--	580	2,000	300	--
	SB-25-10	10/26/2010	10.0	<0.033[1]	<0.066	<0.066	<0.066	--	670	310	37	--
	SB-25-11	10/26/2010	11.0	0.001	<0.001	<0.001	<0.001	--	19	14	<13	--
SB-26	SB-26-2	10/26/2010	2.0	0.003	<0.001	0.002	0.001	--	1.6	7.9	93	--
	SB-26-6	10/26/2010	6.0	0.011	0.001	0.021	0.013	--	12	160	400	--
	SB-26-11	10/26/2010	11.0	0.002	<0.001	<0.001	<0.001	--	3.2	4.8	19	--
SB-28	SB-28-2	10/27/2010	2.0	0.006	<0.001	0.008	0.004	--	<13	510	280	--
	SB-28-6	10/27/2010	6.0	0.003	<0.001	0.005	0.003	--	170	580	410	--
	SB-28-9	10/27/2010	9.0	0.005	<0.001	0.011	0.008	--	62	570	1,500	--
	SB-28-11	10/27/2010	11.0	0.013	<0.001	0.003	0.003	--	7.7	40	86	--

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-29	SB-29-2	10/27/2010	2.0	0.002	<0.001	0.002	0.001	--	310	210	190	--
	SB-29-4	10/27/2010	4.0	<0.036[1]	<0.072	<0.072	<0.072	--	1,100	300	120	--
	SB-29-6	10/27/2010	6.0	<0.16[1]	<0.32	<0.32	<0.32	--	540	260	270	--
	SB-29-7	10/27/2010	7.0	<0.030[1]	<0.060	<0.060	<0.060	--	580	230	140	--
SB-30	SB-30-2	10/27/2010	2.0	<0.12[1]	<0.24	<0.24	0.40	--	**6,700**	6,600	2,900	--
	DUP-2-102710	10/27/2010	2.0	<0.15[1]	<0.30	<0.30	<0.30	--	**7,200**	**8,800**	3,200	--
	SB-30-4	10/27/2010	4.0	<0.038[1]	<0.076	<0.076	<0.076	--	910	580	200	--
	SB-30-8	10/27/2010	8.0	<0.0007	<0.001	<0.001	<0.001	--	43	13	35	--
	SB-30-10	10/27/2010	10.0	<0.0007	<0.001	<0.001	<0.001	--	<2.0	<4.7	<16	--
SB-31	SB-31-2	10/27/2010	2.0	**0.11**	0.21	<0.087	0.37	--	**5,300**	**9,500**	2,200	--
	SB-31-4	10/27/2010	4.0	<0.035	<0.071	<0.071	<0.071	--	730	1,300	370	--
	SB-31-9	10/27/2010	9.0	<0.0007	<0.001	0.002	<0.001	--	<2.0	<4.7	<16	--
	SB-31-11	10/27/2010	11.0	<0.0007	<0.001	0.002	<0.001	--	<18	<4.5	<15	--
SB-32	SB-32-2	10/27/2010	2.0	<0.033[1]	<0.067	<0.067	<0.067	--	2,000	4,600	2,300	--
	SB-32-6	10/27/2010	6.0	<0.032[1]	<0.064	<0.064	<0.064	--	200	280	140	--
	SB-32-8	10/27/2010	8.0	<0.0008	<0.002	<0.002	<0.002	--	130	140	66	--
	SB-32-10	10/27/2010	10.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	<4.3	<14	--
SB-33	SB-33-2	10/28/2010	2.0	0.001	0.002	0.002	0.005	--	**32,000**	3,300	2,500	--
	SB-33-6	10/28/2010	6.0	<0.031[1]	<0.062	<0.062	<0.062	--	540	1,000	920	--
	SB-33-9	10/28/2010	9.0	0.0009	<0.002	<0.002	<0.002	--	23	92	89	--
	SB-33-11	10/28/2010	11.0	<0.0007	<0.001	<0.001	<0.001	--	<15	<4.3	<14	--
SB-34	SB-34-2	10/28/2010	2.0	<0.0005	<0.001	<0.001	<0.001	--	<11	23	74	--
	SB-34-6	10/28/2010	6.0	<0.033[1]	<0.066	<0.066	<0.066	--	770	1,200	160	--
	SB-34-9	10/28/2010	9.0	<0.001	<0.002	<0.002	<0.002	--	<36[1]	7.7	<24	--
	SB-34-10	10/28/2010	10.0	<0.0007	<0.001	<0.001	<0.001	--	<21	<4.7	52	--
SB-35	SB-35-4	10/28/2010	4.0	0.003	<0.0009	0.001	0.002	--	<14	38	120	--
	SB-35-6	10/28/2010	6.0	0.002	0.002	0.004	1.0	--	97	500	750	--
	SB-35-8	10/28/2010	8.0	0.0009	<0.001	<0.001	0.058	--	30	14	24	--
	SB-35-10	10/28/2010	10.0	0.001	<0.001	<0.001	0.053	--	24	18	26	--

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-36	SB-36-6	10/28/2010	6.0	0.005	<0.001	0.001	0.002	--	200	21	<12	--
	SB-36-11	10/28/2010	11.0	0.0008	<0.001	<0.001	<0.001	--	3.3	4,600	760	--
SB-37	SB-37-6	10/28/2010	6.0	<0.032[1]	<0.063	<0.063	<0.063	--	1,400	<3.6	<12	--
	SB-37-11	10/28/2010	11.0	0.001	<0.001	<0.001	<0.001	--	13	22	<14	--
SB-46	SB-46-5	7/8/2013	5.0	0.007	<0.001	0.017	0.01	--	<13	410	970	--
	SB-46-7	7/8/2013	7.0	<0.041[1]	<0.082	<0.082	<0.082	--	2,500	630	<28	--
	SB-46-10	7/11/2013	10.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	<4.3	<14	--
	SB-46-13	7/11/2013	13.0	<0.0007	<0.001	<0.001	<0.001	--	<1.8	<4.4	<15	--
SB-47	SB-47-4	7/8/2013	4.0	0.015	0.001	0.034	0.015	--	22	320	670	--
	SB-47-6	7/8/2013	6.0	0.002	<0.0009	0.005	0.004	--	63	320	650	--
	SB-47-7	7/8/2013	7.0	0.004	<0.0009	0.007	0.005	--	21	310	650	--
	SB-47-10	7/11/2013	10.0	0.009	<0.001	<0.001	<0.001	--	<19	<4.5	<15	--
	SB-47-13	7/11/2013	13.0	0.003	<0.001	<0.001	<0.001	--	<1.7	<4.2	<14	--
SB-48	SB-48-4	7/8/2013	4.0	0.022	<0.001	0.019	0.009	--	<12	270	540	--
	SB-48-5	7/8/2013	5.0	0.01	0.002	0.033	0.021	--	500	2,000	1,300	--
	SB-48-7	7/8/2013	7.0	0.003	<0.001	0.005	0.005	--	73	170	170	--
	SB-48-9	7/11/2013	9.0	0.002	<0.002	<0.002	<0.002	--	9.0	<4.6	<15	--
	SB-48-11	7/11/2013	11.0	<0.0008	<0.002	<0.002	<0.002	--	<1.8	<4.4	<15	--
SB-49	SB-49-1	7/8/2013	1.0	0.005	<0.001	0.009	0.004	--	7.9	270	770	--
	SB-49-2	7/8/2013	2.0	0.004	0.002	0.01	0.009	--	<14	160	250	--
	SB-49-3	7/8/2013	3.0	0.002	<0.001	0.002	0.003	--	24	<4.1	<14	--
SB-50	SB-50-1	7/8/2013	1.0	0.003	<0.0009	0.005	0.002	--	<13	87	180	--
	SB-50-2	7/8/2013	2.0	<0.0006	<0.001	<0.001	0.003	--	430	1,200	<65	--
	SB-50-4	7/8/2013	4.0	0.004	0.002	0.001	0.001	--	80	<4.4	<15	--
SB-51	SB-51-3	7/9/2013	3.0	<0.0005	<0.001	<0.001	<0.001	--	<1.2	<3.5	<12	--
	SB-51-4	7/9/2013	4.0	0.001	0.001	<0.001	<0.001	--	120	<4.0	<13	--
	SB-51-10	7/11/2013	10.0	<0.0006	<0.001	<0.001	<0.001	--	<1.6	<4.1	<14	--
	SB-51-12	7/11/2013	12.0	<0.0005	<0.001	<0.001	<0.001	--	<1.3	<3.8	<13	--

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-52	SB-52-4	7/9/2013	4.0	<0.0006	<0.001	<0.001	<0.001	--	<1.2	<3.3	<11	--
	SB-52-8	7/11/2013	8.0	<0.0006	<0.001	<0.001	<0.001	--	<1.7	<4.1	<14	--
	SB-52-11	7/11/2013	11.0	<0.0006	<0.001	<0.001	<0.001	--	<1.6	<4.1	<14	--
SB-53	SB-53-2.5	7/9/2013	2.5	<0.028	<0.057	<0.057	<0.057	--	1,800	3,400	1,800	--
	SB-53-4	7/9/2013	4.0	<0.031	<0.062	<0.062	<0.062	--	1,400	4,300	2,600	--
	SB-53-9	7/11/2013	9.0	<0.0006	<0.001	<0.001	<0.001	--	<1.6	<4.1	<14	--
	SB-53-12	7/11/2013	12.0	<0.0007	<0.001	<0.001	<0.001	--	<1.6	<4.3	<14	--
SB-54	SB-54-4	7/9/2013	4.0	<0.030[1]	<0.060	<0.060	<0.060	--	2,100	**9,800**	3,700	--
	SB-54-6	7/9/2013	6.0	<0.038	<0.075	<0.075	<0.075	--	120	300	120	--
	DUP-1-070913	7/9/2013	6.0	<0.029	<0.059	<0.059	<0.059	--	**3,700**	**11,000**	3,900	--
	SB-54-9	7/11/2013	9.0	<0.0007	<0.001	<0.001	<0.001	--	<1.9	<4.6	<15	--
	SB-54-13	7/11/2013	13.0	<0.0007	<0.001	<0.001	<0.001	--	<1.8	<4.4	<15	--
	DUP-1-071113	7/11/2013	13.0	<0.0007	<0.001	<0.001	<0.001	--	<1.9	<4.5	<15	--
SB-55	SB-55-3	7/9/2013	3.0	0.001	<0.001	<0.001	<0.001	--	<1.2	<3.1	<10	--
	SB-55-5	7/9/2013	5.0	<0.030	<0.059	<0.059	<0.059	--	**5,200**	**16,000**	<1,100	--
	SB-55-8	7/11/2013	8.0	<0.0007	<0.001	<0.001	<0.001	--	5.2	<4.7	<16	--
	SB-55-11	7/11/2013	11.0	<0.0007	<0.001	<0.001	<0.001	--	<1.8	4.7	<14	--
SB-56	SB-56-2	7/10/2013	2.0	<0.0006	<0.001	<0.001	<0.001	--	<1.3	7.5	<10	--
	SB-56-5	7/10/2013	5.0	<0.0007	<0.001	<0.001	<0.001	--	<1.6	<3.8	<13	--
	SB-56-8	7/11/2013	8.0	<0.0008	<0.002	<0.002	<0.002	--	<23	<4.6	<15	--
	SB-56-12	7/11/2013	12.0	<0.0006	<0.001	<0.001	<0.001	--	<1.5	<3.8	<13	--
SB-57	SB-57-3	7/10/2013	3.0	0.0006	<0.001	<0.001	<0.001	--	7.8	96	27	--
	SB-57-4	7/10/2013	4.0	<0.075	<0.15	<0.15	<0.15	--	2,400	390	<13	--
	SB-57-9	7/12/2013	9.0	<0.0007	<0.001	<0.001	<0.001	--	<1.8	<4.5	<15	--
	SB-57-13	7/12/2013	13.0	<0.0006	<0.001	<0.001	<0.001	--	<1.5	<3.9	<13	--
SB-58	SB-58-2	7/10/2013	2.0	<0.0006	<0.001	<0.001	<0.001	--	<13	340	900	--
	SB-58-4	7/10/2013	4.0	<0.038	<0.075	<0.075	<0.075	--	760	3,600	2,300	--
	SB-58-9	7/11/2013	9.0	<0.0007	<0.001	<0.001	<0.001	--	<2.0	<4.9	<16	--
	SB-58-12	7/11/2013	12.0	0.0006	<0.001	<0.001	<0.001	--	<1.3	<3.7	<12	--

Table 3-1
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
SB-59	SB-59-3	7/10/2013	3.0	<0.0005	<0.001	<0.001	<0.001	--	<1.2	240	<11	--
	SB-59-5	7/10/2013	5.0	<0.038	<0.076	<0.076	<0.076	--	1,200	6,000	<270	--
	SB-59-9	7/12/2013	9.0	<0.0007	<0.001	<0.001	<0.001	--	3.5	<4.3	<14	--
	SB-59-12	7/12/2013	12.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	<4.2	<14	--
	DUP-1-071213	7/12/2013	12.0	<0.0007	<0.001	<0.001	<0.001	--	3.7	<4.6	<15	--
SB-60	SB-60-4	7/10/2013	4.0	0.003	<0.001	0.005	0.003	--	<13	250	88	--
	SB-60-7	7/10/2013	7.0	<0.040	<0.080	<0.080	<0.080	--	2,000	**8,400**	<350	--
	SB-60-9	7/12/2013	9.0	0.018	0.002	<0.001	<0.001	--	5.0	<4.7	<16	--
	SB-60-13	7/12/2013	13.0	<0.0007	<0.001	<0.001	<0.001	--	<1.8	<4.2	<14	--
MW-18	MW-18-2	7/26/2010	2.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	<3.8	<13	--
	MW-18-6	7/26/2010	6.0	0.002	<0.001	<0.001	<0.001	--	2.4	44	<14	--
	MW-18-8	7/26/2010	8.0	0.001	<0.001	<0.001	<0.001	--	2.9	20	<13	8.35
	MW-18-8.5	7/28/2010	8.5	0.018	<0.001	0.007	0.005	--	<11	48	80	--
	MW-18-8.5	7/28/2010	8.5	0.018	<0.001	0.007	0.005	--	<11	48	80	--
MW-19	MW-19-2	7/26/2010	2.0	0.003	<0.001	0.002	<0.001	--	1.9	26	87	--
	MW-19-4	7/26/2010	4.0	<0.096[1]	0.44	<0.19	0.21	--	**5,000**	4,800	<620	7.70
	MW-19-8	7/26/2010	8.0	<0.099[1]	0.34	<0.20	0.20	--	1,800	730	<64	--
	MW-19-9	7/27/2010	9.0	0.005	<0.001	<0.001	<0.001	--	130	140	34	--
MW-20	MW-20-2	7/26/2010	2.0	**9.30**	**8.7**	0.84	**18**	--	**3,300**	**37,000**	**20,000**	--
	MW-20-4	7/26/2010	4.0	**1.90**	1.80	<0.89	2.5	--	**4,000**	**12,000**	<2,700[1]	--
	MW-20-8	7/26/2010	8.0	**0.43**	0.82	<0.14	0.36	--	820	1,100	<310	--
	MW-20-8.5	7/27/2010	8.5	**0.067**	0.024	0.005	0.058	--	45	590	230	--
	MW-20-9.5	7/27/2010	9.5	0.026	<0.002	<0.002	<0.002	--	<24	<4.8	<16	--
MW-21	MW-21-2	7/26/2010	2.0	0.0008	<0.001	<0.001	<0.001	--	<50[1]	470	1,200	--
	MW-21-4	7/26/2010	4.0	0.003	<0.001	0.004	0.002	--	<1.1	27	73	--
	MW-21-6	7/26/2010	6.0	0.0006	<0.001	<0.001	<0.001	--	280	440	<65	--
	MW-21-9	7/27/2010	9.0	0.007	0.004	0.003	0.010	--	<20	59	49	--
MW-22	MW-22-2	7/27/2010	2.0	<0.0007	<0.001	<0.001	<0.001	--	<4.7	110	250	--
	MW-22-4	7/27/2010	4.0	0.0009	<0.001	<0.001	<0.001	--	<12	120	340	--
	MW-22-8	7/27/2010	8.0	0.002	<0.002	<0.002	<0.002	--	23	5.9	<19	--

Table 3-1

REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (FROMER BULK TERMINAL PROPERTY)

Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348

1656 East J Street

Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)	Lead (mg/kg)
D-6	D-6-2	7/26/2010	2.0	**0.033**	<0.002	0.023	0.005	--	<15	78	190	--
	D-6-8	7/26/2010	8.0	0.0007	<0.001	<0.001	<0.001	--	<1.7	<3.8	<13	--
	D-6-9	7/28/2010	9.0	0.002	<0.001	<0.001	<0.001	--	<22	5.0	<16	--
	DUP-1-072810	7/28/2010	9.0	0.001	<0.001	<0.001	<0.001	--	<17	<4.2	<14	--
D-7	D-7-2	7/27/2010	2.0	<0.0007	<0.001	<0.001	<0.001	--	<1.7	5.1	29	--
	D-7-6	7/27/2010	6.0	<0.0006	<0.001	<0.001	<0.001	--	4.9	10	<12	--
	D-7-8	7/27/2010	8.0	0.001	<0.002	<0.002	<0.002	--	<18	<4.3	44	--
	D-7-9	7/27/2010	9.0	<0.0007	<0.001	<0.001	<0.001	--	<19	4.8	19	--
Preliminary Cleanup Levels				***NA***	***NA***	***NA***	***NA***	***NA***	***3,266***	***7,742***	***17,419***	***NA***

EXPLANATIONS:

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
(ft) = Feet
(mg/kg) = Milligrams per Kilograms
MTBE = Methyl tertiary butyl ether
NA = Not Applicable
TPH = Total Petroleum Hydrocarbons
TPH-GRO = TPH as Gasoline-Range Organics
TPH-DRO = TPH as Diesel-Range Organics
TPH-HRO = TPH as Heavy Oil-Range Organics
USEPA = United States Environmental Protection Agency
WDOE = Washington State Department of Ecology
-- = Not Measured/Not Analyzed
< = Detected Below Laboratory Detection Limits

Notes:

[1] Laboratory non-detected levels exceeding MTCA Method A Cleanup Levels.
TPH-GRO analyzed by WDOE Method NWTPH-Gx.
TPH-DRO and TPH-HRO analyzed by WDOE Method NWTPH-Dx with silica gel cleanup.
BTEX and MTBE analyzed by USEPA method 8260B.
Lead analyzed by USEPA Method 6020B.

Table 3-2
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (PIPELINE)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Sample Location	Sample ID	Date Sampled	Depth of Sample (ft)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-HRO (mg/kg)
Port of Tacoma										
SB-38	SB-38-4	6/27/2012	4.0	<0.0006	<0.001	<0.001	<0.001	1.3	8.3	21
	SB-38-5	6/27/2012	5.0	<0.0005	<0.001	<0.001	<0.001	<1.1	5.8	32
SB-39	SB-39-4	6/27/2012	4.0	<0.0006	<0.001	<0.001	<0.001	<1.1	13	140
	SB-39-6	6/27/2012	6.0	<0.0006	<0.001	<0.001	<0.001	<1.3	<3.1	<10
SB-40	SB-40-3	6/27/2012	3.0	0.0006	<0.001	<0.001	<0.001	<1.1	5.5	27
	SB-40-4.5	6/27/2012	4.5	<0.0006	<0.001	<0.001	<0.001	<1.2	<3.2	<11
SB-41	SB-41-4	6/27/2012	4.0	<0.0006	<0.001	<0.001	<0.001	<1.3	<3.2	<11
	SB-41-6	6/27/2012	6.0	<0.0006	<0.001	<0.001	<0.001	<1.3	<3.2	<11
SB-42	SB-42-4	6/27/2012	4.0	<0.0006	<0.001	<0.001	<0.001	<1.2	<3.1	<10
	SB-42-6	6/27/2012	6.0	<0.0006	<0.001	<0.001	<0.001	<1.2	<3.2	<11
	DUP-1-062712	6/27/2012	6.0	<0.0006	<0.001	<0.001	<0.001	<1.2	<3.2	<11
SB-43	SB-43-4	6/27/2012	4.0	0.001	<0.001	<0.001	<0.001	<1.2	<3.2	<11
SB-44	SB-44-6	6/27/2012	6.0	<0.0006	<0.001	<0.001	<0.001	<1.3	<3.3	<11
SB-45	SB-45-4	6/27/2012	4.0	0.0006	<0.001	<0.001	<0.001	<1.2	6.7	12
	SB-45-6	6/27/2012	6.0	0.0006	<0.001	<0.001	<0.001	1.2	130	500
Steeler Inc										
SB-61	SB-61-5.0	7/9/2014	5.0	0.002	<0.001	0.003	<0.001	<1.6	13	50
SB-62	SB-62-5.0	7/9/2014	5.0	<0.0006	<0.001	<0.001	<0.001	<1.2	<3.2	<11
SB-63	SB-63-5.0	7/9/2014	5.0	<0.0006	<0.001	<0.001	<0.001	<1.4	32	25
SB-64	SB-64.5.0	7/9/2014	5.0	<0.0006	<0.001	<0.001	<0.001	<1.6	<3.9	<13
SB-65	SB-65-5.0	7/10/2014	5.0	<0.0006	<0.001	<0.001	<0.001	1.7	<4.1	<14
SB-66	SB-66-5.0	7/10/2014	5.0	<0.0008	<0.002	<0.002	<0.002	<1.4	<3.8	<13
SB-67	SB-67-5.0	7/10/2014	5.0	<0.0008	<0.002	<0.002	<0.002	<1.7	<4.1	<14
SB-68	SB-68-5.0	7/10/2014	5.0	<0.0008	<0.002	<0.002	<0.002	<1.6	<4.1	<14
SB-69	SB-69-5.0	7/10/2014	5.0	<0.0007	<0.001	<0.001	<0.001	<1.5	4.4	<13
SB-70	SB-70-5.0	7/10/2014	5.0	<0.0007	<0.001	<0.001	<0.001	<1.6	<4.1	<14
SB-71	SB-71-5.0	7/10/2014	5.0	<0.0006	<0.001	<0.001	<0.001	<1.3	<3.7	<12
Preliminary Cleanup Levels				***NA***	***NA***	***NA***	***NA***	***3,266***	***7,742***	***17,419***

Table 3-2
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (PIPELINE)
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

EXPLANATIONS:

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
(ft) - Feet
(mg/kg) = Milligrams per Kilograms
NA = Not Applicable
TPH = Total Petroleum Hydrocarbons
TPH-GRO = TPH as Gasoline-Range Organics
TPH-DRO = TPH as Diesel-Range Organics
TPH-HRO = TPH as Heavy Oil-Range Organics
USEPA = United States Environmental Protection Agency
WDOE = Washington State Department of Ecology
-- = Not Measured/Not Analyzed
< = Detected Below Laboratory Detection Limits

Notes:

TPH-GRO analyzed by WDOE Method NWTPH-Gx.
TPH-DRO and TPH-HRO analyzed by WDOE Method NWTPH-Dx with silica gel cleanup.
BTEX analyzed by USEPA method 8260B.

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-9														
09/23/92		99.62	6.15	--	93.47	--	**960**	--	93	ND	ND	ND	0.5	--
9/23/92 (D)		99.62	--	--	--	--	**790**	--	99	ND	ND	ND	0.5	--
01/11/93		99.62	4.90	--	94.72	--	--	--	--	--	--	--	--	--
06/04/93		99.62	5.10	--	94.52	0.17 - 0.95	**11,000**	--	360	ND	ND	ND	0.6	--
12/15/93		99.62	5.20	--	94.42	0.22 - 0.64	**760**	--	ND	ND	ND	ND	ND	--
06/04/94		99.62	5.68	--	93.94	1.7	**16,000**	ND	730	ND	ND	ND	2.2	--
11/01/94		99.62	5.66	--	93.96	0.057 - 0.67	**1,000**	ND	ND	ND	ND	ND	ND	--
02/09/95		99.62	4.35	--	95.27	ND	**11,000**	**1,800**	250	ND	ND	ND	ND	--
05/02/95		99.62	4.90	--	94.72	ND	**24,000**	**2,800**	270	ND	ND	ND	1.0	--
08/02/95		99.62	5.35	--	94.27	ND	**36,000**	**6,800**	400	ND	0.67	ND	1.6	--
12/05/95		99.62	4.00	--	95.62	ND	**2,700**	**2,800**	ND	ND	0.73	0.7	4.0	--
03/18/96		99.62	4.80	--	94.82	ND	**3,300**	**1,400**	ND	ND	ND	ND	ND	--
06/26/96		99.62	4.89	--	94.73	--	**19,700**	**3,940**	--	--	--	--	--	--
09/09/96		99.62	5.60	--	94.02	--	**9,110**	**1,650**	--	--	--	--	--	--
12/30/96		99.62	3.17	--	96.45	--	**2,690**	**1,310**	--	--	--	--	--	--
03/07/97		99.62	4.30	--	95.32	0.126	**9,440**	**2,030**	62	ND	ND	ND	ND	--
06/09/97		99.62	4.56	--	95.06	ND	**16,300**	**3,160**	--	--	--	--	--	--
09/04/97		99.62	5.50	--	94.12	ND - 1.47	**21,700**	ND	--	--	--	--	--	--
06/01/98		99.62	5.20	--	94.42	--	**19,500**	ND	--	--	--	--	--	--
11/01/98		99.62	5.84	0.00	93.78	--	**2,280**	ND	--	--	--	--	--	--
05/30/99		99.62	5.13	0.00	94.49	--	**27,800**	ND	--	--	--	--	--	--
06/11-12/00		99.62	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
09/25/00		99.62	5.91	0.01	93.71	--	**2,650**	**3,060**	--	--	--	--	--	--
01/26/01		99.62	4.98	0.00	94.64	--	ND	ND	--	--	--	--	--	--
01/09/02		99.62	3.34	0.00	96.28	--	346	<500	--	--	--	--	--	--
04/04/02	NP	99.62	4.69	0.00	94.93	--	**5,700**	**1,600**	--	--	--	--	--	--
04/28/03	NP	99.62	4.59	0.00	95.03	--	**11,000**	**2,100**	--	--	--	--	--	--
04/15/04		99.62	INACCESSIBLE - WELL FILLED WITH BENTONITE					--	--	--	--	--	--	--
04/29/05		99.62	INACCESSIBLE - WELL FILLED WITH BENTONITE					--	--	--	--	--	--	--
04/27/06		99.62	INACCESSIBLE - WELL FILLED WITH BENTONITE					--	--	--	--			
MW-10														
09/23/92		99.71	6.35	--	93.36	--	--	--	--	--	--	--	--	--
01/11/93		99.71	4.15	--	95.56	--	--	--	--	--	--	--	--	--
06/04/93		99.71	4.18	--	95.53	--	--	--	ND	ND	ND	ND	ND	--
12/15/93		99.71	4.55	--	95.16	0.058	**1,100**	--	ND	ND	ND	ND	ND	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-10 cont														
06/03/94		99.71	--	--	--	--	--	--	--	--	--	--	--	--
11/01/94		99.71	--	--	--	--	--	--	--	--	--	--	--	--
02/09/95		99.71	2.89	--	96.82	ND	**6,400**	**590**	69	ND	ND	ND	ND	--
05/02/95		99.71	3.93	--	95.78	ND	**2,700**	**940**	ND	ND	ND	ND	ND	--
08/02/95		99.71	5.27	--	94.44	ND	**32,000**	**4,700**	190	ND	ND	ND	ND	--
12/05/95		99.71	2.84	--	96.87	ND	**14,000**	**2,800**	72	ND	ND	ND	ND	--
03/18/96		99.71	3.65	--	96.06	ND	**1,900**	ND	ND	ND	ND	ND	ND	--
06/26/96		99.71	4.82	--	94.89	--	**1,540**	ND	--	--	--	--	--	--
09/09/96		99.71	5.55	--	94.16	--	**2,260**	**840**	--	--	--	--	--	--
12/30/96		99.71	1.90	--	97.81	--	**885**	ND	--	--	--	--	--	--
03/07/97		99.71	2.55	--	97.16	ND	**3,360**	ND	--	--	--	--	--	--
06/09/97		99.71	2.85	--	96.86	ND	ND	ND	--	--	--	--	--	--
09/04/97		99.71	3.57	--	96.14	ND	281	ND	--	--	--	--	--	--
12/17/97		99.71	3.22	--	96.49	--	**933**	ND	--	--	--	--	--	--
06/01/98		99.71	4.71	--	95.00	--	**1,250**	ND	--	--	--	--	--	--
11/01/98		99.71	6.83	0.00	92.88	--	**1,120**	**790**	--	--	--	--	--	--
05/30/99		99.71	4.19	0.00	95.52	--	**1,370**	ND	--	--	--	--	--	--
06/11-12/00		99.71	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
09/25/00		99.71	6.89	0.00	92.82	--	**6,080**	ND	--	--	--	--	--	--
04/04/02	NP	99.71	4.41	0.00	95.30	--	**4,100**	**1,500**	--	--	--	--	--	--
04/28/03	NP	99.71	4.06	0.00	95.65	--	**4,400**	**2,300**	--	--	--	--	--	--
04/15/04	NP	99.71	4.95	0.00	94.76	--	**40,000**	**23,000**	--	--	--	--	--	--
04/29/05	NP	99.71	4.47	0.00	95.24	--	**3,500**	**2,200**	--	--	--	--	--	--
04/27/06	NP	99.71	4.81	0.00	94.90	--	**5,800**	**1500**	--	--	--	--	--	--
12/09/08	LFP	99.45	4.85	0.00	94.60	--	**710**	250	ND	ND	ND	ND	ND	ND
08/31/10		99.45	6.27	0.00	93.18	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	ND
10/07/11		99.45	6.30	0.00	93.15	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
01/10/12		99.45	4.35	0.00	95.10	--	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--
04/11/12		99.45	3.90	0.00	95.55	--	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--
07/10/12		99.45	4.84	0.00	94.61	--	200	**970**	55	<0.5	<0.5	<0.5	<1.5	--
10/08/12		99.45	7.66	0.00	91.79	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
01/08/13		99.45	3.82	0.00	95.63	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		99.45	4.21	0.00	95.24	--	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		99.45	5.43	0.00	94.02	--	**2,700**	**1,100**	<50	<0.5	<0.5	<0.5	<1.5	--
11/5-6/13		99.45	5.08	0.00	94.37	--	**2,400**	450	74	<0.5	<0.5	<0.5	<1.5	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-10 cont														
1/7-9/14		99.45	5.08	0.00	94.37	--	**4,400**	**1,100**	110	<0.5	<0.5	<0.5	<1.5	--
4/7-8/14		99.45	3.80	0.00	95.65	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
MW-11														
06/04/93		101.33	4.68	--	96.65	--	**11,000**	--	ND	ND	ND	ND	ND	--
12/15/93		101.33	--	--	--	--	--	--	--	--	--	--	--	--
06/04/94		101.33	5.34	--	95.99	3.6	--	--	230	ND	ND	ND	0.7	--
11/01/94		101.33	5.85	--	95.48	--	--	--	--	--	--	--	--	--
02/09/95		101.33	3.97	--	97.36	ND	**2,800**	420	58	ND	ND	ND	0.6	--
05/02/95		101.33	4.59	--	96.74	ND	**8,600**	**1,600**	ND	ND	ND	ND	ND	--
08/02/95		101.33	5.44	--	95.89	--	--	--	--	--	--	--	--	--
12/05/95		101.33	3.80	--	97.53	ND	290	**930**	ND	ND	ND	ND	ND	--
03/18/96		101.33	4.50	--	96.83	ND	**2,000**	ND	61	1.0	ND	ND	1.9	--
06/26/96		101.33	4.90	--	96.43	--	**4,320**	**1,360**	--	--	--	--	--	--
09/09/96		101.33	5.65	--	95.68	--	--	--	--	--	--	--	--	--
12/30/96		101.33	2.60	--	98.73	--	370	ND	--	--	--	--	--	--
03/07/97		101.33	3.92	--	97.41	ND	**1,100**	ND	--	--	--	--	--	--
06/09/97		101.33	3.80	--	97.53	ND	**3,090**	**1,090**	--	--	--	--	--	--
09/04/97		101.33	5.84	--	95.49	--	--	--	--	--	--	--	--	--
12/17/97		101.33	4.51	--	96.82	--	**1,830**	ND	--	--	--	--	--	--
06/01/98		101.33	5.44	--	95.89	--	**1,360**	ND	--	--	--	--	--	--
11/01/98		101.33	5.87	0.00	95.46	--	**1,060**	**1,870**	--	--	--	--	--	--
05/30/99		101.33	5.31	0.00	96.02	--	**21,700**	ND	--	--	--	--	--	--
06/11-12/00		101.33	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
09/25/00		101.33	5.85	0.00	95.48	--	**5,350**	**4,410**	--	--	--	--	--	--
01/26/01		101.33	5.38	0.00	95.95	--	ND	ND	--	--	--	--	--	--
01/09/02		101.33	4.24	0.00	97.09	--	<250	<500	--	--	--	--	--	--
04/04/02	NP	101.33	4.94	0.00	96.39	--	**9,900**	**2,300**	--	--	--	--	--	--
04/28/03	NP	101.33	4.89	0.00	96.44	--	**12,000**	**1,900**	--	--	--	--	--	--
04/15/04	NP	101.33	5.39	0.00	95.94	--	**2,700**	**710**	--	--	--	--	--	--
04/29/05	NP	101.33	5.18	0.00	96.15	--	**2,600**	**1,900**	--	--	--	--	--	--
04/27/06	NP	101.33	5.33	0.00	96.00	--	**2,000**	<510	--	--	--	--	--	--
12/10/08	NP	101.00	5.60	0.00	95.40	--	--	--	ND	ND	ND	ND	ND	ND
08/31/10		101.00	5.75	0.00	95.25	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	ND
10/07/11		101.00	7.20	0.00	93.80	Dry			--	--	--	--	--	--
01/09/12		101.00	5.18	0.00	95.82	--	<34	<79	<50	<0.5	<0.5	<0.5	<1.5	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-11 cont														
04/09/12		101.00	6.80	0.00	94.20	Dry			--	--	--	--	--	--
07/09/12		101.00	5.66	0.00	95.34	--	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--
10/08/12		101.00	6.88	0.00	94.12	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
01/07/13		101.00	3.38	0.00	97.62	--	53	<67	510	1.4	<2.0	0.9	4.5	--
04/08/13		101.00	6.76	0.00	94.24	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
9/25-26/13		101.00	6.83	0.00	94.17	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
11/5-6/13		101.00	6.51	0.00	94.49	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
1/7-9/14		101.00	6.78	0.00	94.22	INSUFFICIENT WATER FOR SAMPLE				--	--	--	--	--
4/7-8/14		101.00	4.57	0.00	96.43	--	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--
MW-12														
09/23/92		--	--	--	--	--	--	--	--	--	--	--	--	--
01/11/93		101.13	4.88	--	96.25	--	--	--	--	--	--	--	--	--
06/04/93		101.13	4.40	--	96.73	0.12 - 0.54	**9,200**	--	360	**120**	1.2	0.6	2.1	--
12/15/93		101.13	5.21	--	95.92	0.067 - 14	**6,400**	--	670	**400**	2.9	0.9	5.8	--
06/04/94		101.13	5.21	--	95.92	13	**8,100**	**1,500**	**840**	**240**	3.3	ND	2.8	--
11/01/94		101.13	5.31	--	95.82	0.12 - 28	**5,700**	**1,400**	**810**	**160**	1.7	0.7	4.5	--
02/09/95		101.13	3.68	--	97.45	ND	**3,700**	**680**	87	**7.1**	ND	ND	ND	--
05/02/95		101.13	4.17	--	96.96	ND	**16,000**	**1,800**	490	**16**	0.58	ND	1.9	--
08/02/95		101.13	5.28	--	95.85	ND	**12,000**	**2,300**	270	**10**	0.83	ND	ND	--
12/05/95		101.13	2.91	--	98.22	ND	420	**1,100**	ND	ND	ND	ND	ND	--
03/18/96		101.13	4.00	--	97.13	ND	**5,400**	ND	430	1.5	1.2	0.95	4.7	--
06/26/96		101.13	4.62	--	96.51	--	**12,600**	**2,920**	--	--	--	--	--	--
09/09/96		101.13	5.95	--	95.18	--	**9,680**	**1,470**	--	--	--	--	--	--
12/30/96		101.13	1.90	--	99.23	--	429	ND	--	--	--	--	--	--
03/07/97		101.13	3.03	--	98.10	ND	**18,900**	**1,330**	105	1.85	ND	ND	ND	--
06/09/97		101.13	4.23	--	96.90	ND	**9,070**	**1,250**	--	--	--	--	--	--
09/04/97		101.13	5.78	--	95.35	ND - 2.06	**14,000**	**1,500**	--	--	--	--	--	--
12/17/97		101.13	3.84	--	97.29	--	**4,500**	ND	--	--	--	--	--	--
06/01/98		101.13	5.00	--	96.13	--	**7,050**	ND	--	--	--	--	--	--
11/01/98		101.13	5.44	0.00	95.69	--	**6,300**	ND	--	--	--	--	--	--
05/30/99		101.13	4.97	0.00	96.16	--	**22,200**	ND	--	--	--	--	--	--
06/11-12/00		101.13	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
09/25/00		101.13	6.57	0.00	94.56	--	**12,000**	ND	--	--	--	--	--	--
01/26/01		101.13	5.05	0.00	96.08	--	ND	ND	--	--	--	--	--	--
01/09/02		101.13	3.46	0.00	97.67	--	310	<500	--	--	--	--	--	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-12 cont														
04/04/02	NP	101.13	4.48	0.00	96.65	--	**12,000**	**1,700**	--	--	--	--	--	--
04/28/03	NP	101.13	4.41	0.00	96.72	--	**22,000**	**3,200**	--	--	--	--	--	--
04/15/04	NP	101.13	5.00	0.00	96.13	--	**19,000**	**3,100**	--	--	--	--	--	--
04/29/05	NP	101.13	4.39	0.00	96.74	--	**17,000**	**3,200**	--	--	--	--	--	--
04/27/06	NP	101.13	4.88	0.00	96.25	--	**4,900**	**1,300**	--	--	--	--	--	--
12/09/08	LFP	101.04	5.19	0.00	95.85	--	**2,200**	250	150	ND	ND	ND	ND	ND
08/31/10		101.04	5.86	0.00	95.18	--	**2,600**	<360	530	<0.5	<0.5	<0.5	<0.5	ND
10/07/11		101.04	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
01/09/12		101.04	4.55	0.00	96.49	--	49	71	300	<2.0	<2.0	<0.5	1.5	--
04/11/12		101.04	4.05	0.00	96.99	--	<29	<69	130	<0.5	<0.5	<0.5	<5.0	--
07/09/12		101.04	5.36	0.00	95.68	--	**670**	**1,000**	490	1.4	<2.0	1.11	<6.0	--
10/09/12		101.04	6.54	0.00	94.50	--	32	<69	670	1.3	1.1	1.2	3.5	--
01/07/13		101.04	3.88	0.00	97.16	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		101.04	4.09	0.00	96.95	--	<28	<66	260	<0.5	<0.5	<0.5	<5.0	--
9/25-26/13		101.04	5.58	0.00	95.46	--	**6,800**	**870**	420	0.6	<2.0	0.6	1.7	--
11/5-6/13		101.04	5.27	0.00	95.77	--	**4,300**	380	220	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		101.04	5.62	0.00	95.42	--	**8,900**	**1,900**	260	<0.5	<0.5	<0.5	1.9	--
4/7-8/14		101.04	3.77	0.00	97.27	--	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--
MW-13														
09/23/92		102.54	5.23	--	97.31	--	**8,200**	--	870	**87**	4.0	4.0	6.0	--
01/11/93		102.54	6.26	--	96.28	--	--	--	--	--	--	--	--	--
06/04/93		102.54	5.95	--	96.59	0.087	330	--	ND	ND	ND	ND	ND	--
12/15/93		102.54	7.04	--	95.50	0.58 - 2.7	**27,000**	--	**1,000**	**35**	2.4	5.9	8.7	--
06/03/94		102.54	6.74	--	95.80	1.5	**27,000**	ND	680	**8.5**	1.1	2.0	1.6	--
11/01/94		102.54	7.69	--	94.85	0.15 - 7.8	**20,000**	ND	**1,500**	**38**	3.2	8.7	9.2	--
02/09/95		102.54	4.83	--	97.71	ND	**4,400**	**1,400**	130	2.0	ND	0.7	ND	--
05/02/95		102.54	5.82	--	96.72	ND	**14,000**	**2,200**	410	3.0	ND	2.1	ND	--
08/02/95		102.54	7.25	--	95.29	ND	**31,000**	**2,400**	750	**18**	2.5	13	3.0	--
12/05/95		102.54	4.14	--	98.40	ND	**6,700**	**4,800**	ND	ND	ND	ND	ND	--
03/18/96		102.54	5.16	--	97.38	ND	**10,000**	**2,500**	140	ND	ND	ND	2.6	--
06/26/96		102.54	6.48	--	96.06	--	**8,110**	**2,640**	--	--	--	--	--	--
09/09/96		102.54	7.70	--	94.84	--	**35,800**	**2,810**	--	--	--	--	--	--
12/30/96		102.54	3.12	--	99.42	--	--	--	--	--	--	--	--	--
03/07/97		102.54	4.16	--	98.38	ND	**960**	ND	--	--	--	--	--	--
06/09/97		102.54	5.70	--	96.84	ND	**1,620**	**1,050**	--	--	--	--	--	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-13 cont														
09/04/97		102.54	7.59	--	94.95	ND	**15,800**	**1,550**	--	--	--	--	--	--
12/17/97		102.54	5.43	--	97.11	--	**11,100**	**1,630**	--	--	--	--	--	--
06/01/98		102.54	6.48	--	96.06	--	**1,490**	ND	--	--	--	--	--	--
11/01/98		102.54	7.77	0.00	94.77	--	**9,580**	**933**	--	--	--	--	--	--
05/30/99		102.54	6.34	0.00	96.20	--	**12,800**	ND	--	--	--	--	--	--
06/11-12/00		102.54	6.88	0.00	95.66	--	--	--	--	--	--	--	--	--
04/04/02	NP	102.54	5.52	0.00	97.02	--	**980**	<750	--	--	--	--	--	--
04/28/03	NP	102.54	5.45	0.00	97.09	--	**3,200**	440	--	--	--	--	--	--
04/15/04	NP	102.54	6.15	0.00	96.39	--	**2,100**	460	--	--	--	--	--	--
04/29/05	NP	102.54	5.55	0.00	96.99	--	**4,400**	**1,500**	--	--	--	--	--	--
04/27/06	NP	102.54	5.99	0.00	96.55	--	**1,800**	280	--	--	--	--	--	--
12/09/08	LFP	102.57	6.23	0.00	96.34	--	**4,000**	**520**	200	ND	ND	ND	ND	ND
08/31/10		102.57	7.44	0.00	95.13	--	**2,500**	<360	<50	<0.5	<0.5	<0.5	<0.5	--
10/07/11		102.57	8.00	0.00	94.57	--	42	<69	190	<0.5	<0.5	<0.5	1.8	--
01/10/12		102.57	5.95	0.00	96.62	--	66	<66	<50	<0.5	<0.5	<0.5	<1.5	--
04/10/12		102.57	5.45	0.00	97.12	--	89	<67	<50	<0.5	<0.5	<0.5	<1.5	--
07/10/12		102.57	6.87	0.00	95.70	--	**2,100**	150	280	0.6	<0.5	<0.5	2.0	--
10/10/12		102.57	8.10	0.00	94.47	--	280	<66	360	1.1	0.7	<0.5	1.7	--
01/09/13		102.57	4.57	0.00	98.00	--	510	<67	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		102.57	5.54	0.00	97.03	--	83	<67	<50	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		102.57	7.57	0.00	95.00	--	**4,000**	460	370	0.9	<2.0	0.7	1.5	--
11/5-6/13		102.57	6.84	0.00	95.73	--	**3,100**	**620**	120	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		102.57	6.94	0.00	95.63	--	**4,000**	**630**	400	0.5	<0.5	<0.5	1.8	--
4/7-8/14		102.57	5.39	0.00	97.18	--	83	<68	<50	<0.5	<0.5	<0.5	<1.5	--
MW-14														
09/23/92		102.25	5.26	--	96.99	--	**9,800**	--	1,100	**200**	11	3.0	7.0	--
01/11/93		102.25	5.25	--	97.00	--	--	--	--	--	--	--	--	--
06/04/93		102.25	4.90	--	97.35	--	**9,700**	--	ND	2.2	ND	ND	ND	--
12/15/93		102.25	6.18	--	96.07	0.48 - 1.0	**9,500**	--	470	**72**	0.6	1.9	4.2	--
06/03/94		102.25	5.71	--	96.54	ND	**4,300**	**980**	**830**	**29**	1.0	1.3	0.7	--
11/01/94		102.25	6.76	--	95.49	0.11	**5,400**	**1,700**	ND	3.8	ND	ND	0.5	--
02/09/95		102.25	3.85	--	98.40	ND	**1,700**	**1,100**	ND	ND	ND	ND	ND	--
05/02/95		102.25	4.74	--	97.51	ND	**4,200**	**2,200**	ND	0.65	0.58	ND	ND	--
08/02/95		102.25	6.64	--	95.61	ND	**21,000**	**4,800**	140	**17**	1.8	1.6	ND	--
12/05/95		102.25	3.16	--	99.09	ND	**9,300**	**3,900**	ND	3.0	ND	ND	ND	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-14 cont														
03/18/96		102.25	4.20	--	98.05	ND	**11,000**	**2,900**	230	**8.9**	ND	ND	6.9	--
06/26/96		102.25	5.75	--	96.50	--	**39,300**	**4,600**	--	--	--	--	--	--
09/09/96		102.25	7.00	--	95.25	--	**58,200**	**4,450**	--	--	--	--	--	--
12/30/96		102.25	--	--	--	--	--	--	--	--	--	--	--	--
03/07/97		102.25	2.96	--	99.29	ND	**9,230**	**1,310**	98	0.545	ND	ND	ND	--
06/09/97		102.25	4.75	--	97.50	ND	**10,000**	**2,240**	--	--	--	--	--	--
09/04/97		102.25	6.74	--	95.51	ND - 1.90	**42,700**	ND	--	--	--	--	--	--
12/17/97		102.25	3.90	--	98.35	--	**4,860**	**1,710**	--	--	--	--	--	--
06/01/98		102.25	5.58	--	96.67	--	**2,270**	ND	--	--	--	--	--	--
11/01/98		102.25	7.30	0.00	94.95	--	**8,620**	**2,030**	--	--	--	--	--	--
05/30/99		102.25	5.37	0.00	96.88	--	**15,700**	**1,590**	--	--	--	--	--	--
06/11-12/00		102.25	5.81	0.00	96.44	--	--	--	--	--	--	--	--	--
04/04/02	NP	102.25	4.69	0.00	97.56	--	**1,100**	<750	--	--	--	--	--	--
04/28/03	NP	102.25	4.52	0.00	97.73	--	**820**	470	--	--	--	--	--	--
04/15/04	NP	102.25	5.29	0.00	96.96	--	**4,400**	**2,800**	--	--	--	--	--	--
04/29/05	NP	102.25	4.50	0.00	97.75	--	**740**	**580**	--	--	--	--	--	--
04/27/06	NP	102.25	4.99	0.00	97.26	--	400	140	--	--	--	--	--	--
12/10/08	LFP	102.30	5.26	0.00	97.04	--	**520**	210	ND	ND	ND	ND	ND	ND
08/31/10		102.30	7.69	0.00	94.61	--	**1,200**	**940**	<50	<0.5	<0.5	<0.5	<0.5	--
10/07/11		102.30	8.30	0.00	94.00	--	**2,000**	**1,100**	<50	<0.5	<0.5	<0.5	<1.5	--
01/10/12		102.30	5.65	0.00	96.65	--	**680**	320	<50	<0.5	<0.5	<0.5	<1.5	--
04/10/12		102.30	5.70	0.00	96.60	--	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--
07/10/12		102.30	6.93	0.00	95.37	--	**2,900**	**1,400**	<50	<0.5	<0.5	<0.5	<1.5	--
10/09/12		102.30	8.45	0.00	93.85	--	290	250	<50	<0.5	<0.5	<0.5	<1.5	--
01/08/13		102.30	4.99	0.00	97.31	--	30	<67	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		102.30	5.50	0.00	96.80	--	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		102.30	7.08	0.00	95.22	--	**720**	**550**	<51	<0.5	<0.5	<0.5	<1.6	--
11/5-6/13		102.30	6.77	0.00	95.53	--	480	310	<50	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		102.30	6.76	0.00	95.54	--	**530**	440	<50	<0.5	<0.5	<0.5	<1.5	--
4/7-8/14		102.30	5.56	0.00	96.74	--	62	<67	<50	<0.5	<0.5	<0.5	<1.5	--
MW-18														
08/31/10		104.12	9.27	0.00	94.85	--	**2,700**	<370	320	**5**	<0.5	<0.5	<0.5	--
10/07/11		104.12	8.10	0.00	96.02	--	<30	<69	100	<0.5	<0.5	<0.5	<1.5	--
01/10/12		104.12	8.00	0.00	96.12	--	120	<67	540	<2.0	0.8	0.9	2.9	--
04/11/12		104.12	7.55	0.00	96.57	--	<30	<69	340	<2.0	<0.5	0.5	3.3	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-18 cont														
07/10/12		104.12	8.83	0.00	95.29	--	**520**	160	760	1.6	0.9	1.2	<6.0	--
10/10/12		104.12	9.85	0.00	94.27	--	51	<66	410	1.2	0.6	0.7	2.5	--
01/09/13		104.12	7.20	0.00	96.92	--	160	<68	610	1.6	<2.0	1.0	5.4	--
04/09/13		104.12	7.77	0.00	96.35	--	68	<66	310	<0.5	0.6	0.8	2.6	--
9/25-26/13		104.12	9.24	0.00	94.88	--	**4,300**	**760**	600	1.6	<2.0	1.2	3.7	--
11/5-6/13		104.12	5.88	0.00	98.24	--	**3,700**	**650**	**1,000**	1.9	1.3	1.6	<8.0	--
1/7-9/14		104.12	8.60	0.00	95.52	--	**6,300**	**1,100**	**940**	2.2	1.2	1.4	6.8	--
4/7-8/14		104.12	7.50	0.00	96.62	--	110	<67	620	<2.0	0.7	0.9	<5.0	--
MW-19														
08/31/10		101.41	6.07	0.00	95.34	--	**8,800**	<1,700	**2,900**	1	3	11	9	--
10/07/11		101.41	6.65	0.00	94.76	--	440	<69	**2,300**	**9.8**	4.2	6.5	12	--
01/10/12		101.41	4.70	0.00	96.71	--	470	<67	**3,100**	**9.1**	3.5	9.1	12	--
04/11/12		101.41	4.15	0.00	97.26	--	**540**	<68	**1,200**	1.3	1.4	3.6	5.9	--
07/10/12		101.41	5.53	0.00	95.88	--	**2,900**	350	**2,900**	3.1	4.3	9.7	18	--
10/10/12		101.41	6.74	0.00	94.67	--	150	<66	**1,600**	<6.0	3.3	5.7	8.5	--
01/09/13		101.41	3.36	0.00	98.05	--	89	<67	110	<0.5	<2.0	<0.5	1.6	--
04/09/13		101.41	4.33	0.00	97.08	--	400	<66	**1,500**	2.1	2.1	3.9	<7.0	--
9/25-26/13		101.41	5.98	0.00	95.43	--	**21,000**	**1,700**	**2,000**	2.5	2.5	5.2	<11	--
11/5-6/13		101.41	5.47	0.00	95.94	--	**12,000**	**1,300**	**2,400**	3.2	2.8	8.1	<14	--
1/7-9/14		101.41	5.57	0.00	95.84	--	**11,000**	<670	**2,400**	3.8	3.2	6.6	14	--
4/7-8/14		101.41	4.08	0.00	97.33	--	290	<67	**1,000**	0.8	0.6	1.7	<5.0	--
MW-20														
08/31/10		100.99	5.31	0.00	95.68	--	**7,600**	**2,300**	**1,700**	**59**	6	11	6	--
10/07/11		100.99	5.95	0.00	95.04	--	**1,500**	430	**2,700**	**14**	4.2	5.2	4.2	--
01/10/12		100.99	3.70	0.00	97.29	--	**980**	<67	**3,700**	**130**	7.2	19	16	--
04/11/12		100.99	3.30	0.00	97.69	--	**990**	<67	**2,400**	**88**	6.5	15	23	--
07/10/12		100.99	4.66	0.15	96.45	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--
10/08/12		100.99	6.43	0.41	94.89	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--
01/08/13		100.99	3.90	0.02	97.11	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--
04/08/13		100.99	3.42	0.02	97.59	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--
9/25-26/13		100.99	5.07	0.03	95.94	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--
11/5-6/13		100.99	6.81	0.29	94.41	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--
1/7-9/14		100.99	UNABLE TO GAUGE DEPTH DUE TO PRODUCT				--	--	--	--	--	--	--	--
4/7-8/14		100.99	3.55	0.03	97.46	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-21														
08/31/10		100.60	4.93	0.00	95.67	--	**1,400**	**960**	230	<0.5	<0.5	<0.5	<0.5	--
10/07/11		100.60	5.30	0.00	95.30	--	**1,200**	290	**820**	<0.5	<0.5	1.2	5.9	--
01/10/12		100.60	2.90	0.00	97.70	--	<29	<67	250	<0.5	<0.5	<0.5	1.9	--
04/10/12		100.60	2.85	0.00	97.75	--	58	<69	130	<0.5	<0.5	<0.5	<1.5	--
07/10/12		100.60	4.07	0.00	96.53	--	**610**	190	330	0.8	<0.5	0.6	<6.0	--
10/10/12		100.60	5.53	0.00	95.07	--	**1,900**	**1,200**	450	0.9	0.7	1	4.1	--
01/08/13		100.60	2.54	0.00	98.06	--	63	<66	260	0.6	0.5	<0.5	4.1	--
04/09/13		100.60	2.78	0.00	97.82	--	43	<66	230	<0.5	<0.5	<0.5	2.8	--
9/25-26/13		100.60	4.24	0.00	96.36	--	**2,400**	**870**	520	<2.5	0.6	0.70	4.6	--
11/5-6/13		100.60	3.89	0.00	96.71	--	**2,500**	**1,400**	370	<0.5	<0.5	<0.5	<4.0	--
1/7-9/14		100.60	3.77	0.00	96.83	--	**2,100**	**600**	370	<2.0	<0.5	0.6	4.0	--
4/7-8/14		100.60	2.78	0.00	97.82	--	32	<67	93	<0.5	<0.5	<0.5	<1.5	--
MW-22														
08/31/10		100.62	6.21	0.00	94.41	--	**2,300**	**1,100**	81	<0.5	<0.5	<0.5	<0.5	--
10/07/11		100.62	6.55	0.00	94.07	--	**950**	440	300	0.7	<0.5	<0.5	2.8	--
01/09/12		100.62	5.42	0.00	95.20	--	**14,000**	**6,500**	590	<2.0	<0.5	<0.5	1.9	--
04/10/12		100.62	4.90	0.00	95.72	--	65	<67	56	<0.5	<0.5	<0.5	<1.5	--
07/10/12		100.62	5.74	0.00	94.88	--	**6,700**	**2,400**	520	0.6	<0.5	0.6	3.5	--
10/09/12		100.62	6.63	0.00	93.99	--	**4,900**	**2,600**	280	0.5	0.6	0.6	2.7	--
01/08/13		100.62	4.90	0.00	95.72	--	220	150	70	<0.5	<0.5	<0.5	<1.5	--
04/09/13		100.62	5.13	0.00	95.49	--	<28	<66	52	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		100.62	6.12	0.00	94.50	--	**3,300**	**1,200**	350	0.7	0.7	0.70	3.3	--
11/5-6/13		100.62	5.73	0.00	94.89	--	**3,500**	**1,800**	360	0.7	<1.0	0.6	2.9	--
1/7-9/14		100.62	5.87	0.00	94.75	--	**3,200**	**930**	390	<2.0	0.6	0.7	3.9	--
4/7-8/14		100.62	4.88	0.00	95.74		52	<66	150	<0.5	<0.5	<0.5	<1.5	--
D-1														
09/23/92		101.96	8.74	--	93.22	--	**2,100**	--	180	ND	ND	ND	ND	--
01/11/93		101.96	9.50	--	92.46	--	--	--	--	--	--	--	--	--
06/04/93		101.96	9.75	--	92.21	--	**22,000**	--	100	0.6	ND	ND	ND	--
12/15/93		101.96	9.28	--	92.68	0.14	**2,400**	--	150	ND	ND	ND	1.0	--
06/03/94		101.96	10.53	--	91.43	0.14	**2,600**	ND	290	ND	ND	ND	ND	--
11/01/94		101.96	10.15	--	91.81	0.1 - 0.2	**2,800**	ND	170	ND	ND	ND	0.9	--
02/09/95		101.96	8.82	--	93.14	ND - 5.0	**2,800**	420	170	ND	ND	ND	ND	--
05/02/95		101.96	9.87	--	92.09	ND	**6,000**	ND	110	ND	ND	ND	ND	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
D-1 cont														
08/02/95		101.96	10.43	--	91.53	ND	**4,800**	**900**	ND	ND	ND	ND	ND	--
12/05/95		101.96	8.30	--	93.66	ND	**4,200**	**950**	58	ND	ND	ND	ND	--
03/18/96		101.96	10.30	--	91.66	ND	**3,600**	ND	91	ND	ND	ND	2.1	--
06/26/96		101.96	10.95	--	91.01	--	**4,430**	**896**	--	--	--	--	--	--
09/09/96		101.96	11.27	--	90.69	--	**3,910**	ND	--	--	--	--	--	--
12/30/96		101.96	7.25	--	94.71	--	**3,400**	ND	--	--	--	--	--	--
03/07/97		101.96	9.26	--	92.70	ND	**5,010**	ND	--	--	--	--	--	--
06/09/97		101.96	9.50	--	92.46	ND	**4,530**	ND	--	--	--	--	--	--
09/04/97		101.96	10.20	--	91.76	ND - 0.114	**3,730**	ND	--	--	--	--	--	--
12/17/97		101.96	8.14	--	93.82	--	**3,190**	ND	--	--	--	--	--	--
06/01/98		101.96	9.76	--	92.20	--	**3,120**	ND	--	--	--	--	--	--
11/01/98		101.96	11.06	0.00	90.90	--	**1,770**	ND	--	--	--	--	--	--
05/30/99		101.96	10.43	0.00	91.53	--	**4,480**	ND	--	--	--	--		--
06/11-12/00		101.96	9.97	0.00	91.99	--	--	--	--	--	--	--	--	--
04/04/02	NP	101.96	9.62	0.00	92.34	--	**6,200**	<1,100	--	--	--	--	--	--
04/28/03	NP	101.96	9.62	0.00	92.34	--	**6,700**	**520**	--	--	--	--	--	--
04/15/04	NP	101.96	9.78	0.00	92.18	--	**6,500**	400	--	--	--	--	--	--
04/29/05	NP	101.96	9.41	0.00	92.55	--	**6,200**	**1,200**	--	--	--	--	--	--
04/27/06	NP	101.96	10.42	0.00	91.54	--	**5,000**	<1,000	--	--	--	--	--	--
12/09/08	LFP	101.99	9.50	0.00	92.49	--	**3,400**	<690	460	ND	ND	ND	ND	ND
08/31/10		103.22	12.03	0.00	91.19	--	**3,200**	<360	200	<0.5	<0.5	<0.5	<0.5	--
10/07/11		103.22	11.85	0.00	91.37	--	250	<68	680	<5.0	0.9	1.3	4	--
01/10/12		103.22	10.85	0.00	92.37	--	240	<73	160	<0.5	<0.5	<0.5	<5.0	--
04/10/12		103.22	9.90	0.00	93.32	--	<30	<70	110	<0.5	<0.5	<0.5	<1.5	--
07/10/12		103.22	10.93	0.00	92.29	--	<31	<73	160	<0.5	<0.5	<0.5	1.6	--
10/10/12		103.22	12.43	0.00	90.79	--	<29	<67	140	<0.5	<0.5	<0.5	<1.5	--
01/09/13		103.22	9.92	0.00	93.30	--	<29	<67	50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		103.22	10.80	0.00	92.42	--	<28	<66	99	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		103.22	10.48	0.00	92.74	--	**5,200**	**590**	99	<0.5	<0.5	<0.5	<1.5	--
11/5-6/13		103.22	10.94	0.00	92.28	--	**3,600**	300	120	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		103.22	11.15	0.00	92.07	--	**6,100**	**710**	110	<0.5	<0.5	<0.5	<1.5	--
4/7-8/14		103.22	10.58	0.00	92.64	--	<29	<67	110	<0.5	<0.5	<0.5	<1.5	--
D-2A														
09/23/92		100.80	--	--	--	--	**690**	--	25	**11**	ND	ND	ND	--
01/11/93		100.80	8.20	--	92.60	--	--	--	--	--	--	--	--	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
D-2A cont														
06/04/93		100.80	8.55	--	92.25	--	ND	--	ND	ND	ND	ND	ND	--
12/15/93		100.80	7.89	--	92.91	ND	**660**	--	ND	ND	ND	ND	ND	--
06/04/94		100.80	9.33	--	91.47	ND	**760**	ND	ND	ND	ND	ND	ND	--
11/01/94		100.80	8.67	--	92.13	ND	**860**	ND	ND	ND	ND	ND	0.8	--
02/09/95		100.80	7.63	--	93.17	ND	**590**	ND	60	ND	ND	ND	ND	--
05/02/95		100.80	8.58	--	92.22	ND	**1,700**	ND	ND	ND	ND	ND	ND	--
08/02/95		100.80	9.27	--	91.53	ND	**1,600**	ND	ND	ND	ND	ND	ND	--
12/05/95		100.80	7.20	--	93.60	ND	**2,300**	**1,100**	ND	ND	ND	ND	ND	--
03/18/96		100.80	8.96	--	91.84	ND	**820**	ND	ND	ND	ND	ND	ND	--
06/26/96		100.80	9.55	--	91.25	--	**2,230**	ND	--	--	--	--	--	--
09/09/96		100.80	9.80	--	91.00	--	**1,900**	ND	--	--	--	--	--	--
12/30/96		100.80	6.00	--	94.80	--	**2,390**	ND	--	--	--	--	--	--
03/07/97		100.80	7.85	--	92.95	ND	**2,280**	ND	--	--	--	--	--	--
06/09/97		100.80	8.25	--	92.55	ND	**2,200**	ND	--	--	--	--	--	--
09/04/97		100.80	9.17	--	91.63	ND	**1,930**	ND	--	--	--	--	--	--
12/17/97		100.80	6.99	--	93.81	--	**1,100**	ND	--	--	--	--	--	--
06/01/98		100.80	8.52	--	92.28	--	**1,200**	ND	--	--	--	--	--	--
11/01/98		100.80	9.64	0.00	91.16	--	**592**	ND	--	--	--	--	--	--
05/30/99		100.80	9.10	0.00	91.70	--	**1,380**	ND	--	--	--	--	--	--
06/11-12/00		100.80	9.08	0.00	91.72	--	--	--	--	--	--	--	--	--
04/04/02	NP	100.80	8.24	0.00	92.56	--	**2,200**	<750	--	--	--	--	--	--
04/28/03	NP	100.80	8.16	0.00	92.64	--	**2,700**	**610**	--	--	--	--	--	--
04/15/04	NP	100.80	8.60	0.00	92.20	--	**2,400**	350	--	--	--	--	--	--
04/29/05	NP	100.80	8.00	0.00	92.80	--	**2,400**	**870**	--	--	--	--	--	--
04/27/06	NP	100.80	8.89	0.00	91.91	--	**1,700**	<500	--	--	--	--	--	--
12/09/08	LFP	100.78	8.75	0.00	92.03	--	**1,000**	190	ND	ND	ND	ND	ND	ND
08/31/10		100.78	9.37	0.00	91.41	--	**2,100**	**810**	<50	<0.5	<0.5	<0.5	<0.5	--
10/07/11		100.78	Unable To Locate						--	--	--	--	--	--
01/09/12		100.78	8.10	0.00	92.68	--	45	150	<50	<0.5	<0.5	<0.5	<1.5	--
04/11/12		100.78	7.35	0.00	93.43	--	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--
07/09/12		100.78	9.30	0.00	91.48	--	<31	<73	<50	<0.5	<0.5	<0.5	<1.5	--
10/09/12		100.78	9.59	0.00	91.19	--	63	320	<50	<0.5	<0.5	<0.5	<1.5	--
01/07/13		100.78	7.80	0.00	92.98	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		100.78	8.40	0.00	92.38	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		100.78	8.84	0.00	91.94	--	**3,700**	**1,000**	<50	<0.5	<0.5	<0.5	<1.5	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
D-2A cont														
11/5-6/13		100.78	8.50	0.00	92.28	--	**2,800**	**740**	<50	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		100.78	8.70	0.00	92.08	--	**3,100**	**620**	<50	<0.5	<0.5	<0.5	<1.5	--
4/7-8/14		100.78	7.89	0.00	92.89	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
D-3														
09/23/92		101.04	8.00	--	93.04	--	**1,200**	--	75	ND	ND	ND	ND	--
01/11/93		101.04	8.40	--	92.64	--	--	--	--	--	--	--	--	--
06/04/93		101.04	8.58	--	92.46	--	**780**	--	ND	ND	ND	ND	ND	--
12/15/93		101.04	8.19	--	92.85	ND	**1,900**	--	ND	ND	ND	ND	ND	--
06/03/94		101.04	9.41	--	91.63	ND	**1,700**	ND	ND	ND	ND	ND	ND	--
11/01/94		101.04	8.86	--	92.18	ND	**1,400**	ND	ND	ND	ND	ND	ND	--
02/09/95		101.04	7.77	--	93.27	ND	**1,600**	270	100	ND	ND	ND	ND	--
05/02/95		101.04	8.57	--	92.47	ND	**5,100**	**940**	57	ND	ND	ND	ND	--
08/02/95		101.04	9.44	--	91.60	ND	**4,100**	**810**	ND	ND	ND	ND	ND	--
12/05/95		101.04	7.20	--	93.84	ND	**4,400**	**930**	ND	ND	ND	ND	ND	--
03/18/96		101.04	9.14	--	91.90	ND	**1,500**	ND	85	ND	0.79	ND	2.2	--
06/26/96		101.04	9.75	--	91.29	--	**4,120**	ND	--	--	--	--	--	--
09/09/96		101.04	10.00	--	91.04	--	**3,850**	ND	--	--	--	--	--	--
12/30/96		101.04	6.35	--	94.69	--	**3,120**	ND	--	--	--	--	--	--
03/07/97		101.04	8.10	--	92.94	ND	**2,760**	ND	--	--	--	--	--	--
06/09/97		101.04	8.10	--	92.94	ND	**2,680**	ND	--	--	--	--	--	--
09/04/97		101.04	9.08	--	91.96	ND - 0.178	**4,080**	ND	--	--	--	--	--	--
12/17/97		101.04	7.29	--	93.75	--	**3,300**	ND	--	--	--	--	--	--
06/01/98		101.04	8.68	--	92.36	--	**3,160**	**1,530**	--	--	--	--	--	--
11/01/98		101.04	9.88	0.00	91.16	--	**1,630**	ND	--	--	--	--	--	--
05/30/99		101.04	9.29	0.00	91.75	--	**3,870**	ND	--	--	--	--	--	--
06/11-12/00		101.04	8.97	0.00	92.07	--	--	--	--	--	--	--	--	--
04/04/02	NP	101.04	8.45	0.00	92.59	--	**3,500**	<750	--	--	--	--	--	--
04/28/03	NP	101.04	8.28	0.00	92.76	--	**2,800**	**530**	--	--	--	--	--	--
04/15/04	NP	101.04	8.76	0.00	92.28	--	**3,200**	420	--	--	--	--	--	--
04/29/05	NP	101.04	8.25	0.00	92.79	--	**2,800**	**860**	--	--	--	--	--	--
04/27/06	NP	101.04	9.11	0.00	91.93	--	**2,900**	<510	--	--	--	--	--	--
12/10/08	LFP	101.04	8.91	0.00	92.13	--	**2,900**	<510	--	--	--	--	--	--
08/31/10		102.22	10.88	0.00	91.34	--	**2,600**	<360	140	<0.5	<0.5	<0.5	<0.5	--
8/31/10 (D)		102.22	10.88	0.00	91.34	--	**2,500**	<360	130	<0.5	<0.5	<0.5	<0.5	--
10/07/11		102.22	10.55	0.00	91.67	--	<30	<69	75	<0.5	<0.5	<0.5	<1.5	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
D-3 cont														
01/10/12		102.22	9.70	0.00	92.52	--	<30	<70	84	<0.5	<0.5	<0.5	<1.5	--
04/10/12		102.22	8.80	0.00	93.42	--	<30	<70	82	<0.5	<0.5	<0.5	<1.5	--
07/10/12		102.22	9.97	0.00	92.25	--	<30	<71	120	<0.5	<0.5	<0.5	<1.5	--
10/09/12		102.22	10.86	0.00	91.36	--	<29	<67	67	<0.5	<0.5	<0.5	<2.0	--
01/08/13		102.22	8.90	0.00	93.32	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		102.22	5.34	0.00	96.88	--	<28	<66	77	<0.5	<0.5	<0.5	<5.0	--
9/25-26/13		102.22	10.48	0.00	91.74	--	**3,000**	350	<50	<0.5	<0.5	<0.5	<1.5	--
11/5-6/13		102.22	9.96	0.00	92.26	--	**3,400**	430	52	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		102.22	10.17	0.00	92.05	--	**4,400**	**860**	<50	<0.5	<0.5	<0.5	<1.5	--
4/7-8/14		102.22	9.26	0.00	92.96	--	<29	<67	100	<0.5	<0.5	<0.5	<1.5	--
D-6														
08/31/10		104.20	12.71	0.00	91.49	--	**2,000**	<360	110	<0.5	<0.5	<0.5	<0.5	--
10/07/11		104.20	12.17	0.00	92.03	--	**1,100**	82	140	<0.5	<0.5	<0.5	<1.5	--
01/10/12		104.20	11.25	0.00	92.95	--	32	<67	160	<0.5	<0.5	<0.5	<1.5	--
04/11/12		104.20	10.50	0.00	93.70	--	32	<72	81	<0.5	<0.5	<0.5	<1.5	--
07/10/12		104.20	12.06	0.00	92.14	--	<31	<71	130	<0.5	<0.5	<0.5	1.9	--
10/10/12		104.20	13.05	0.00	91.15	--	34	<66	140	0.9	<0.5	0.6	<1.5	--
01/09/13		104.20	13.45	0.00	90.75	--	<29	<67	100	<0.5	<0.5	<0.5	1.7	--
04/09/13		104.20	14.21	0.00	89.99	--	<29	<67	140	0.7	<0.5	<0.5	1.6	--
9/25-26/13		104.20	12.20	0.00	92.00	--	**5,000**	450	170	<0.5	<0.5	<0.5	<1.5	--
11/5-6/13		104.20	11.74	0.00	92.46	--	**4,000**	350	250	<0.5	<0.5	0.7	<5.0	--
1/7-9/14		104.20	15.45	0.00	88.75	--	**6,900**	**1,100**	180	<2.0	<0.5	<0.5	1.8	--
4/7-8/14		104.20	12.52	0.00	91.68	--	<29	<67	150	<0.5	<0.5	<0.5	<1.5	--
D-7														
08/31/10		100.38	8.86	0.00	91.52	--	**1,600**	<690	<50	<0.5	<0.5	<0.5	<0.5	--
10/07/11		100.38	8.50	0.00	91.88	--	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--
01/09/12		100.38	7.80	0.00	92.58	--	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--
04/10/12		100.38	7.00	0.00	93.38	--	38	<69	<50	<0.5	<0.5	<0.5	<1.5	--
07/10/12		100.38	7.94	0.00	92.44	--	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--
10/09/12		100.38	8.58	0.00	91.80	--	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--
01/08/13		100.38	7.28	0.00	93.10	--	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		100.38	7.67	0.00	92.71	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
9/25-26/13		100.38	8.22	0.00	92.16	--	**990**	420	<50	<0.5	<0.5	<0.5	<1.5	--
11/5-6/13		100.38	8.29	0.00	92.09	--	**790**	210	<50	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		100.38	8.34	0.00	92.04	--	**1,500**	**740**	<50	<0.5	<0.5	<0.5	<1.5	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
D-7 cont														
4/7-8/14		100.38	7.36	0.00	93.02	--	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--
MW-6														
06/04/93		101.41	5.73	--	95.68	--	**9,900**	--	500	**8.5**	ND	0.7	0.9	--
12/15/93		101.41	6.11	--	95.30	ND	400	--	ND	ND	ND	ND	ND	--
06/03/94		101.41	6.39	--	95.02	--	--	--	ND	ND	ND	ND	ND	--
11/01/94		101.41	6.93	--	94.48	--	--	--	**1,200**	ND	ND	ND	1.2	--
02/09/95		101.41	4.82	--	96.59	ND	**1,200**	270	ND	ND	ND	ND	ND	--
05/02/95		101.41	5.67	--	95.74	ND	**3,000**	**1,500**	ND	ND	ND	ND	ND	--
08/02/95		101.41	6.70	--	94.71	--	--	--	--	--	--	--	--	--
12/05/95		101.41	4.53	--	96.88	ND	**4,300**	**2,000**	58	0.72	ND	ND	ND	--
03/18/96		101.41	5.20	--	96.21	--	360	ND	ND	ND	ND	ND	ND	--
06/26/96		101.41	6.23	--	95.18	--	**5,090**	**1,230**	--	--	--	--	--	--
09/09/96		101.41	6.71	--	94.70	--	--	--	--	--	--	--	--	--
12/30/96		101.41	3.35	--	98.06	--	**9,470**	**999**	--	--	--	--	--	--
03/07/97		101.41	4.65	--	96.76	ND	**2,430**	ND	ND	ND	ND	ND	ND	--
06/09/97		101.41	5.47	--	95.94	ND	301	ND	--	--	--	--	--	--
09/04/97[4]		101.41	6.94	--	94.47	--	--	--	--	--	--	--	--	--
12/17/97		101.41	4.92	--	96.49	--	ND	ND	--	--	--	--	--	--
06/01/98		101.41	6.09	--	95.32	--	**1,510**	ND	--	--	--	--	--	--
11/01/98		101.41	7.12	0.00	94.29	--	**551**	ND	--	--	--	--	--	--
05/30/99		101.41	6.08	0.00	95.33	--	**1,060**	ND	--	--	--	--	--	--
06/11-12/00		101.41	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
09/25/00		101.41	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
01/26/01		101.41	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
01/09/02		101.41	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
04/10-11/12		101.41	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--
MW-8														
09/23/92		101.32	6.14	--	95.18	--	**7,100**	--	500	**1,700**	7.0	4.0	12	--
01/11/93		101.32	5.26	--	96.06	--	--	--	--	--	--	--	--	--
06/04/93		101.32	4.88	--	96.44	13 - 600	**810,000**	--	**3,400**	21	ND	ND	7.6	--
12/15/93		101.32	4.82	--	96.50	--	--	--	400	ND	ND	ND	0.6	--
06/04/94		101.32	5.18	--	96.14	--	--	--	**1,300**	**13**	1.3	1.0	2.5	--
11/01/94		101.32	6.19	--	95.13	--	--	--	**5,800**	**46**	4.6	35	300	--
02/09/95		101.32	3.92	0.02	97.42	--	--	--	--	--	--	--	--	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-8 cont														
05/02/95		101.32	--	--	--	--	--	--	--	--	--	--	--	--
08/02/95		101.32	6.50	--	94.82	--	--	--	--	--	--	--	--	--
12/05/95		101.32	3.30	--	98.02	7.2 - 210	**290,000**	**19,000**	**19,000**	ND	ND	ND	ND	--
03/18/96		101.32	--	--	--	--	--	--	--	--	--	--	--	--
06/26/96		101.32	5.15	Sheen	96.17	--	--	--	--	--	--	--	--	--
09/09/96		101.32	6.25	--	95.07	--	--	--	--	--	--	--	--	--
12/30/96		101.32	2.15	--	99.17	--	**2,160**	**1,800**	138	ND	ND	ND	ND	--
03/07/97		101.32	2.90	--	98.42	0.119 - 0.738	**1,020**	**1,800**	ND	ND	ND	ND	ND	--
09/04/97		101.32	5.96	--	95.36	INSUFFICIENT WATER TO SAMPLE			--	--	--	--	--	--
DESTROYED	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15														
09/23/92		99.24	4.14	--	95.10	--	**8,300**	--	**3,700**	**36**	7.0	14	23	--
9/23/92 (D)		99.24	--	--	--	--	**12,000**	--	**3,400**	**23**	7.0	12	23	--
01/11/93		99.24	2.17	--	97.07	--	--	--	--	--	--	--	--	--
06/04/93		99.24	1.86	--	97.38	--	**17,000**	--	**1,300**	3.0	1.2	1.5	5.1	--
12/15/93		99.24	2.75	--	96.49	0.55 - 3.8	**19,000**	--	**1,900**	**10**	2.5	2.9	17	--
06/03/94		99.24	2.63	--	96.61	ND	**11,000**	ND	**1,800**	2.1	3.4	4.7	9.2	--
11/01/94		99.24	3.25	--	95.99	0.67 - 4.3	**15,000**	ND	**1,900**	**15**	2.8	4.2	12	--
02/09/95		99.24	0.95	--	98.29	ND	**7,000**	**1,400**	210	ND	ND	ND	0.8	--
05/02/95		99.24	1.60	--	97.64	ND	**13,000**	**2,400**	160	ND	ND	ND	ND	--
08/02/95		99.24	3.43	--	95.81	ND	**17,000**	**4,000**	**1,100**	**7.7**	1.3	4.2	1.5	--
12/05/95		99.24	0.20	--	99.04	0	**1,500**	**1,500**	ND	ND	ND	ND	ND	--
03/18/96		99.24	1.12	--	98.12	ND	**4,700**	**1,700**	170	1.1	0.88	ND	2.3	--
06/26/96		99.24	2.51	--	96.73	--	**5,880**	**3,150**	--	--	--	--	--	--
09/09/96		99.24	3.70	--	95.54	--	**7,290**	**4,700**	--	--	--	--	--	--
12/30/96		99.24	--	--	--	--	--	--	--	--	--	--	--	--
03/07/97		99.24	0.00	--	99.24	ND	**6,000**	**2,030**	ND	ND	ND	ND	ND	--
06/09/97		99.24	1.60	--	97.64	ND	**3,280**	**1,690**	--	--	--	--	--	--
09/04/97		99.24	3.28	--	95.96	ND	**6,980**	**3,260**	--	--	--	--	--	--
12/17/97		99.24	0.25	--	98.99	--	**6,230**	**2,080**	--	--	--	--	--	--
06/01/98		99.24	2.28	--	96.96	--	**7,260**	**976**	--	--	--	--	--	--
11/01/98		99.24	4.14	0.00	95.10	--	**9,540**	ND	--	--	--	--	--	--
05/30/99		99.24	2.20	0.00	97.04	--	**6,610**	**3,930**	--	--	--	--	--	--
DESTROYED	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-17														
09/23/92		99.64	4.58	--	95.06	--	**5,300**	--	**5,100**	**36**	7.0	32	300	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-17 cont														
01/11/93		99.64	2.80	--	96.84	--	--	--	--	--	--	--	--	--
06/04/93		99.64	2.36	--	97.28	0.18 - 33	**24,000**	--	**2,300**	**9.0**	1.4	16	61	--
12/15/93		99.64	3.31	--	96.33	0.73 - 34	**45,000**	--	**20,000**	**19**	6.2	17	110	--
06/04/94		99.64	3.18	--	96.46	0.33 - 28	**31,000**	ND	**990**	**9.0**	1.1	1.9	8.7	--
11/01/94		99.64	3.76	--	95.88	0.83 - 23	**42,000**	**4,600**	**2,100**	**16**	1.6	2.6	14	--
02/09/95		99.64	1.43	--	98.21	ND	**18,000**	**1,700**	610	ND	1.0	1.3	3.6	--
05/02/95		99.64	1.97	--	97.67	ND	**38,000**	**6,000**	**890**	1.8	ND	0.95	3.3	--
08/02/95		99.64	--	--	--	--	--	--	--	--	--	--	--	--
12/05/95		99.64	--	--	--	--	--	--	--	--	--	--	--	--
03/18/96		99.64	--	--	--	--	--	--	--	--	--	--	--	--
06/26/96		99.64	--	--	--	--	--	--	--	--	--	--	--	--
ABANDONED	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D-4														
09/23/92		98.76	7.33	--	91.43	--	420	--	ND	ND	ND	ND	ND	--
01/11/93		98.76	6.00	--	92.76	--	--	--	--	--	--	--	--	--
06/04/93		98.76	5.71	--	93.05	--	ND	--	ND	ND	ND	ND	ND	--
12/15/93		98.76	5.75	--	93.01	ND	330	--	ND	ND	0.5	ND	ND	--
06/04/94		98.76	6.93	--	91.83	ND	ND	ND	ND	ND	ND	ND	ND	--
11/01/94		98.76	6.29	--	92.47	ND	360	ND	ND	ND	ND	ND	ND	--
02/09/95		98.76	5.43	--	93.33	ND	200	300	ND	ND	ND	ND	ND	--
05/02/95		98.76	6.13	--	92.63	ND	390	**1,000**	ND	ND	ND	ND	ND	--
08/02/95		98.76	--	--	--	--	--	--	--	--	--	--	--	--
12/05/95		98.76	--	--	--	--	--	--	--	--	--	--	--	--
03/18/96		98.76	6.46	--	92.30	ND	ND	ND	ND	ND	ND	ND	ND	--
06/26/96		98.76	7.10	--	91.66	--	**592**	ND	--	--	--	--	--	--
09/09/96		98.76	7.35	--	91.41	--	**939**	943	--	--	--	--	--	--
12/30/96		98.76	7.40	--	91.36	--	311	ND	--	--	--	--	--	--
03/07/97		98.76	5.55	--	93.21	ND	264	ND	--	--	--	--	--	--
06/09/97		98.76	5.65	--	93.11	ND	ND	ND	--	--	--	--	--	--
09/04/97		98.76	6.67	--	92.09	ND	**550**	ND	--	--	--	--	--	--
12/17/97		98.76	UNABLE TO LOCATE			--	--	--	--	--	--	--	--	--
06/01/98		98.76	6.34	--	92.42	--	371	ND	--	--	--	--	--	--
11/01/98		98.76	7.31	0.00	91.45	--	276	ND	--	--	--	--	--	--
05/30/99		98.76	6.54	0.00	92.22	--	429	ND	--	--	--	--	--	--
06/11-12/00		98.76	INACCESSIBLE - PAVED OVER				--	--	--	--	--	--	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
D-5A														
09/23/92		--	--	--	--	--	**860**	--	100	0.7	ND	0.3	0.9	--
01/11/93		100.53	7.92	--	92.61	--	--	--	--	--	--	--	--	--
06/04/93		100.53	8.00	--	92.53	--	270	--	ND	ND	ND	ND	ND	--
12/15/93		100.53	7.61	--	92.92	ND	**590**	--	ND	ND	ND	ND	ND	--
06/04/94		100.53	8.91	--	91.62	ND	**960**	ND	ND	ND	ND	ND	ND	--
11/01/94		100.53	8.33	--	92.20	ND	**1,100**	ND	ND	ND	ND	ND	0.6	--
02/09/95		100.53	7.30	--	93.23	ND	**610**	210	ND	ND	ND	ND	ND	--
05/02/95		100.53	8.08	--	92.45	ND	**2,500**	ND	ND	ND	ND	ND	ND	--
08/02/95		100.53	8.95	--	91.58	ND	**2,800**	**1,000**	ND	ND	ND	ND	ND	--
12/05/95		100.53	6.72	--	93.81	ND	**6,700**	**2,300**	ND	ND	ND	ND	ND	--
03/18/96		100.53	8.62	--	91.91	--	--	--	--	--	--	--	--	--
ABANDONED	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RMW-1														
07/10/14	LFP	--	5.70	--	--	--	74	<69	730	1	1	<0.5	1	--
TRIP BLANK														
06/01/98		--	--	--	--	--	ND	ND	--	--	--	--	--	--
11/01/98		--	--	--	--	--	--	--	--	--	--	--	--	--
05/30/99		--	--	--	--	--	ND	ND	--	--	--	--	--	--
06/11-12/00		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--
09/25/00		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--
01/26/01		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND
01/09/02		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--
04/04/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--
04/28/03		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/15/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/29/05		--	--	--	--	--	--	--	<50	--	--	--	--	--
04/27/06		--	--	--	--	--	--	--	<48	<0.5	<0.5	<0.5	1.5	--
12/09/08		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<0.50
12/10/08		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<0.50
12/07/11		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--
01/09/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/10-11/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
07/10/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
10/09/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
01/08/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
04/09/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--

Table 3-3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
Former Standard Oil Bulk Terminal/Chevron Facility No. 1001348
1656 East J Street
Tacoma, Washington

Well ID/ Date	Purge Method	TOC[1] (ft)	DTW (ft)	SPHT (ft)	GWE[2] (ft)	PAHs (µg/L)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
TRIP BLANK cont														
9/25-26/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
11/5-6/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
1/7-9/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
4/7-8/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
Standard Laboratory Reporting Limits:						0.10 - 5.0	250	500	50	0.5	0.5	0.5	1.5	--
MTCA Method A Cleanup Levels:						1.0	500	500	800/1,000	5.0	1,000	700	1,000	20
Current Method:[3]						USEPA 8310	NWTPH-Dx + Extended[4]		NWTPH-Gx	USEPA 8021				

Explanations:

BTEX = Benzene, toluene, ethylbenzene, and total xylenes
(D) = Duplicate
DTW = Depth to Water
(ft) = Feet
GWE = Groundwater Elevation
LFP = Low Flow Purge
MTBE = Methyl Tertiary Butyl Ether
MTCA = Model Toxics Control Act
ND = Not Detected
NP = No Purge
SPHT = Separate-Phase Hydrocarbon Thickness
TOC = Top of Casing
PAHs = Polynuclear Aromatic Hydrocarbons
TPH = Total Petroleum Hydrocarbons
TPH-DRO = TPH as Diesel-Range Organics
TPH-GRO = TPH as Gasoline-Range Organics
TPH-HRO = TPH as Heavy Oil-Range Organics
USEPA = United States Environmental Protection Agency
µg/L = Micrograms per liter
-- = Not Measured/Not Analyzed

Notes:

1 TOC elevations referenced in feet relative to an arbitrary datum.
2 When SPH is present, GWE has been corrected using the following formula: GWE = [(TOC - DTW) + (SPHT x 0.80)].
3 Laboratory analytical methods for historical data may not be consistent with list of current analytical methods. When necessary, consult original laboratory reports to verify methods used.
4 Analyzed with silica-gel clean up.

Analytical results in bold font indicate concentrations exceed MTCA Method A cleanup levels.

Consult original laboratory analysis reports for analytical methods prior to 2009.

Silica-gel analysis suspended June 2013- February 2014.