
REMEDIAL INVESTIGATION REPORT

BULK TERMINAL PROPERTY



Property:

Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Prepared for:

TOC Holdings Co.
2737 West Commodore Way
Seattle, Washington

Report Date:

June 13, 2014

Remedial Investigation Report

Prepared for:

TOC Holdings Co.

2737 West Commodore Way
Seattle, Washington 98199

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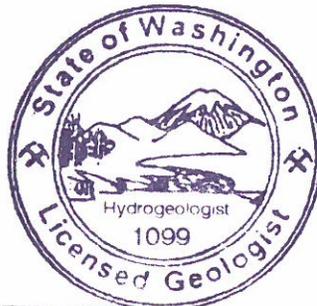
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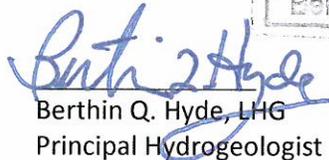
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ACRONYMS AND ABBREVIATIONS

the 2003 BINMIC Report	<i>Ballard Interbay North Manufacturing Industrial Center (BINMIC) Hydrogeologic and Environmental Settings Report, prepared by The Floyd Snider McCarthy Team</i>
°F	degrees Fahrenheit
µg/L	microgram per liter
1,1-DCE	1,1-dichloroethene
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
ASKO Hydraulic Property	located at 2805 West Commodore Way, and encompasses King County Tax Parcel Number 4237900405
AST	aboveground storage tank
ASTM	American Society for Testing and Materials International
bgs	below ground surface
BINMIC	Ballard Interbay North Manufacturing Industrial Center
BNSF	Burlington Northern Santa Fe
BTEX	benzene, toluene, ethylbenzene, and total xylenes
Bulk Terminal Property	located at 2737 West Commodore Way, and is part of King County Tax Parcel Number 1125039050
cis-1,2-DCE	cis-1,2-dichloroethene
cm/sec	centimeters per second
COPC	chemical of potential concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSM	conceptual site model
dioxins and furans	polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans
DNR	Washington State Department of Natural Resources

ACRONYMS AND ABBREVIATIONS (CONTINUED)

DPD	Seattle Department of Planning and Development
DPE	dual-phase extraction
DRPH	diesel-range petroleum hydrocarbons
East Waterfront Property	located at 2750 West Commodore Way, and is part of King County Tax Parcel Number 1125039120
Ecology	Washington State Department of Ecology
EDB	1,2-dibromoethane
EDC	1-2-dichloroethane
EPA	U.S. Environmental Protection Agency
EPH	extractable petroleum hydrocarbon
ESA	Environmental Site Assessment
Foster Wheeler	Foster Wheeler Environmental Corporation
ft/day	feet per day
GAC	granular-activated carbon
g/cm ³	grams per cubic centimeter
GPR	ground-penetrating radar
GRPH	gasoline-range petroleum hydrocarbons
H	Henry's Law constant
Hf	Holocene Fill
Hdf	Holocene Depression Fillings
K _{ow}	octanol-water partition coefficient
LNAPL	light nonaqueous-phase liquid
mg/kg	milligrams per kilogram

ACRONYMS AND ABBREVIATIONS (CONTINUED)

mg/L	milligrams per liter
msl	mean sea level
MTBE	methyl tertiary-butyl ether
MTCA	Washington State Model Toxics Control Act
mV	millivolt
NAPL	nonaqueous-phase liquid
NAVD88	North American Vertical Datum 1988
ng/kg	nanogram per kilogram
NWTPH	Northwest Total Petroleum Hydrocarbon
ORP	oxidation-reduction potential
ORPH	oil-range petroleum hydrocarbons
PAH	polycyclic aromatic hydrocarbon
PCE	tetrachloroethene
PCP	pentachlorophenol
PCP plume	PCP dissolved-phase plume
PID	photoionization detector
PQL	practical quantitation limit
P_v	vapor pressure
PVC	polyvinyl chloride
Qpf	pre-Fraser age glacial deposits
Qpff	pre-Fraser age glacial deposits, fine-grained
Qpfc	pre-Fraser age glacial deposits, coarse-grained
RI Report	Remedial Investigation Report

ACRONYMS AND ABBREVIATIONS (CONTINUED)

ROW	right-of-way
Seattle Terminal Properties	includes the Bulk Terminal Property, East Waterfront Property, ASKO Hydraulic Property, West Waterfront Property, and the Washington State DNR Aquatic Lease Land Property
SES	Sound Environmental Strategies Corporation
SG	specific gravity
Site	the north, central, and south portions of the Bulk Terminal Property, extending into the north-adjointing West Commodore Way ROW
SoundEarth	SoundEarth Strategies, Inc.
TCE	trichloroethene
Tetra Tech	Tetra Tech, Inc.
TEE	Terrestrial Ecological Evaluation
TEF	toxicity equivalency factor
TEQ	toxicity equivalency quotient
TOC	TOC Holdings Co.
TPH	total petroleum hydrocarbons
trans-1,2-DCE	trans-1,2-dichloroethene
TSD	treatment, storage and disposal
TTEC	total toxic equivalent concentration
UCL	upper confidence limit
UST	underground storage tank
USCS	Unified Soil Classification System
VI	vapor intrusion

ACRONYMS AND ABBREVIATIONS (CONTINUED)

VOC	volatile organic compound
VPH	volatile petroleum hydrocarbon
WAC	Washington Administrative Code
Washington State DNR Aquatic Lease Land Property	located directly north of the East and West Waterfront Properties; property overlies Salmon Bay
West Commodore Way ROW	runs from east to west, and separates the Bulk Terminal Property and ASKO Hydraulic Property from the East Waterfront Property and West Waterfront Property
West Waterfront Property	located at 2800 West Commodore Way, and encompasses King County Parcel Number 1125039081

1.0 INTRODUCTION

SoundEarth Strategies, Inc. (SoundEarth; formerly Sound Environmental Strategies Corporation [SES]) has prepared this Remedial Investigation Report (RI Report) on behalf of TOC Holdings Co. (TOC; formerly Time Oil Co.) for the Bulk Terminal Property. The Bulk Terminal Property is located at 2737 West Commodore Way in Seattle, Washington (Figure 1). The Bulk Terminal Property is part of the Seattle Terminal Properties, currently owned by TOC. The Seattle Terminal Properties include four real properties (King County Tax Parcel Numbers 112503-9050 [Bulk Terminal Property], 112503-9120, 423790-0405, and 112503-9081) and one parcel leased from the Washington State Department of Natural Resources (DNR; King County Tax Parcel Number 112503-9113). The Seattle Terminal Properties are identified as the Bulk Terminal Property, East Waterfront Property, ASKO Hydraulic Property, West Waterfront Property, and the Washington State DNR Aquatic Lease Land Property. The Seattle Terminal Properties and West Commodore Way are located in Section 11, Township 25 North, Range 3 East. The latitude and longitude of the Seattle Terminal Properties are approximately 47°39'41–51"North and 122°23'28–41"West. The layout of the Seattle Terminal Properties is shown on Figure 2. The City of Seattle West Commodore Way right-of-way (ROW) runs from east to west and separates the Bulk Terminal Property and ASKO Hydraulic Property from the East Waterfront Property and West Waterfront Property.

The remedial investigation was conducted to address data gaps identified from the data presented in previous subsurface investigations and interim actions conducted by SoundEarth and others that had confirmed releases of the chemicals of potential concern (COPC) to the environment at the Bulk Terminal Property. The releases of COPCs resulted in the contamination of environmental media, including soil and groundwater. The confirmed and suspected sources of COPCs are associated with historical facility operations; however, the release mechanisms are unknown.

The remedial investigation was performed as part of an ongoing cleanup action in accordance with Washington State Model Toxics Control Act (MTCA) Cleanup Regulation as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340). In accordance with WAC 173-340-360(2), the final cleanup action will meet the cleanup standards at the defined points of compliance, protect human health and the environment, comply with applicable state and federal laws, provide for compliance monitoring, and provide a permanent solution to the maximum extent practicable.

1.1 PURPOSE

The objective of the remedial investigation was to collect sufficient data for affected environmental media to adequately assess the site and to sequentially develop and evaluate cleanup action alternatives for a future feasibility study.

The purpose of this RI Report is to provide a comprehensive conceptual understanding of the site using assembled and evaluated data collected from historical and regulatory research and to provide the results from investigations and interim actions performed by SoundEarth and others. The potential cleanup action alternatives evaluated for the site and the proposed cleanup action selected are provided in the feasibility study and/or cleanup action plan under a separate cover.

1.2 PRELIMINARY SITE DEFINITION

According to Washington State Department of Ecology's (Ecology) *Guidelines for Property Cleanups under the Voluntary Cleanup Program* dated July 2008, a site is defined by the nature and extent of contamination associated with one or more releases of hazardous substances (such as the release of gasoline from a leaking underground storage tank [UST]) prior to any cleanup of that contamination (Ecology 2008a).

Based on the information gathered to date, the site encompasses the north, central, and south portions of the Bulk Terminal Property and extends into the north-adjointing West Commodore Way ROW (Site), as shown on Figure 3.

1.3 PRELIMINARY CLEANUP LEVELS

Preliminary cleanup levels were established for individual hazardous substances in each medium during the scoping of the remedial investigation based on various phases of investigation performed by others. The preliminary cleanup levels were refined during the remedial investigation. The final cleanup levels will be defined in the subsequent Cleanup Action Plan, as additional information becomes available on the potential future land use. The current land use of the Bulk Terminal Property is a mix of industrial and commercial.

The Bulk Terminal Property is zoned industrial. However, the City of Seattle will permit commercial uses in industrial areas to the extent that they reinforce the industrial character of the region and new residential uses will not be permitted except for special types of dwellings that are related to the industrial area or that would not restrict or disrupt industrial activity.

Total petroleum hydrocarbons (TPH) are the primary suspected source(s) of potential releases of hazardous substances at the Bulk Terminal Property, based on the historical land use as a petroleum bulk storage facility. During the course of investigation, a second primary COPC (pentachlorophenol [PCP]) was discovered in a localized area where historical production of wood productive had occurred at the Bulk Terminal Property. Additional secondary COPCs have been identified that are additives or byproducts of petroleum hydrocarbons. Based on the results of this remedial investigation, the primary COPCs at the Site are TPH and associated volatile petroleum compounds (benzene, toluene, ethylbenzene, and total xylenes [BTEX]), and PCP. The secondary COPCs are encompassed by the larger TPH plumes that define the Site. The secondary COPCs include the following: lead; polycyclic aromatic hydrocarbons (PAH); and naphthalene, 1-methyl-naphthalene, and 2-methyl-naphthalene.

The preliminary cleanup levels for individual hazardous substances, including TPH, are based on established MTCA Method A cleanup levels in accordance with WAC 173-340-720 through WAC 173-340-760. MTCA Method B cleanup levels are used for hazardous substances where MTCA Method A cleanup levels were not established; for example, PCP. The preliminary cleanup levels for COPCs, confirmed or suspected, in environmental media of potential concern are provided in Table 1.

The final cleanup standards will be determined based on the selected cleanup action(s) and the current and potential future land and resource uses. The final cleanup standards for the Site, including cleanup levels, points of compliance, and remediation levels, if applicable, will be defined in the Cleanup Action Plan under a separate cover, in accordance with WAC 173-340-700.

1.4 REPORT ORGANIZATION

This RI Report has been prepared to meet the general requirements under WAC 173-340-350 and has been organized into the following sections:

- **Section 2.0, Background.** This section provides a description of general facility information and site conditions for the Bulk Terminal Property and surrounding properties and a summary of the environmental setting, including surface water and sediments, soils and geology, hydrogeology, and air.
- **Section 3.0, Previous Investigations, Groundwater Monitoring Events, and Interim Remedial Actions.** This section summarizes activities and results from previous investigations, groundwater monitoring events, and interim actions conducted by others at the Bulk Terminal Property from 1999 to 2005. A brief description of the field work performed and a discussion of the results from each phase of investigation are also included. Details of field sampling procedures are provided in referenced documents prepared by others.
- **Section 4.0, Remedial Investigation and Interim Actions.** This section lists the data gaps identified by SoundEarth following subsurface investigation activities conducted by others. This section also summarizes the remedial investigation field program conducted by SoundEarth from 2006 through February 2, 2013, and provides the results of the remedial investigation field program.
- **Section 5.0, Conceptual Site Model.** This section provides a summary of the conceptual site model (CSM) developed for the Site based on the remedial investigation conducted by SoundEarth and previous investigations performed by others. This section includes a discussion of the confirmed and suspected sources of hazardous substances, affected environmental media of potential concern, fate and transport mechanisms, exposure pathways for potential receptors, and terrestrial ecological evaluation.
- **Section 6.0, Planned Work.** This section presents a description of work planned for the Bulk Terminal Property following completion of the remedial investigation.
- **Section 7.0, Bibliography.** This section provides a list of the source materials used in preparing this RI Report.
- **Section 8.0, Limitations.** This section presents SoundEarth's standard limitations associated with conducting the work reported herein and preparing this RI Report.

2.0 BACKGROUND

This section provides a description of general facility information and conditions for the Bulk Terminal Property, a description of current and historical land uses for the Bulk Terminal Property and the West Commodore Way ROW, and a summary of the environmental settings, including topography, surface water and sediments, soil and geology, hydrogeology, and air. Copies of current and historical assessor records for the Bulk Terminal Property are provided in Appendix A.

2.1 PROPERTY DESCRIPTION

The Bulk Terminal Property is located at 2737 West Commodore Way, Seattle, Washington. The Bulk Terminal Property is comprised of a single tax parcel (King County Tax Parcel Number 112503-9050) with

a total area of 4.08 acres (177,688 square feet). The legal description of the Bulk Terminal Property is “W 392 FT OF POR GL 6 S OF COMMODORE WAY & N OF U S MILITARY RD & E 112 FT OF GL 5 N OF GN R/W & S OF W COMMODORE WY LESS POR PLTD.”

The Bulk Terminal Property extends from West Commodore Way to the Burlington Northern Santa Fe (BNSF) railroad to the south. Several buildings exist on the western portion of the parcel, including a 13,662-square-foot office building (TOC’s current Headquarters Office Building); a portion of a 7,200-square-foot Warehouse Building; and three smaller shop buildings encompassing 660 square feet (the Foamite Shed), 528 square feet (the Boiler Room), and 892 square feet (the Pump Shed). The western portion of the Warehouse Building extends onto the ASKO Hydraulic Property (Figure 4). The eastern portion of the Bulk Terminal Property is currently undeveloped and primarily covered with 4 to 6 inches of 2- to 4-inch-diameter gravel. The south end of the Upper Tank Yard banks steeply upward to the existing fence line and former rail spur.

The Bulk Terminal Property is serviced by overhead electrical, cable, and telephone utilities and underground communications and municipal water and sewer utilities. These utilities generally come on to the Bulk Terminal Property at the northeast corner of the TOC Headquarters Office Building from the West Commodore Way ROW. An additional overhead electric line runs from the southeast corner of the TOC Headquarters Office Building to the southeast corner of the Warehouse Building. The side sewer location is shown in Appendix B.

The Bulk Terminal Property is bounded to the north by the West Commodore Way ROW. Located farther to the north of the Bulk Terminal Property are the East Waterfront Property to the northwest and a Port of Seattle parcel to the northeast. The eastern portion of the Bulk Terminal Property is bounded by 27th Avenue West and beyond by a warehouse building owned by Century Twenty-One Promotions; the southern portion is bounded by the BNSF Parcel; and the western portion is bounded by the ASKO Hydraulic Property (Figure 2).

2.2 PROPERTY LAND USE AND HISTORY

The current and historical use information presented in this RI Report for the Bulk Terminal Property and the West Commodore Way ROW is compiled from reviewed sources, including City of Seattle Department of Planning and Development (DPD), King County Assessor’s website, historical assessor records obtained from Puget Sound Regional Archives, Sanborn Fire Insurance Maps, Kroll and Baist Atlases, Polk and Cole City Directories, aerial photographs, historical records provided by Ecology and TOC, and previous reports prepared by others. Historical documentation referenced in this section is provided in Appendix C.

According to the *Ballard Interbay North Manufacturing Industrial Center (BINMIC) Hydrogeologic and Environmental Settings Report* (the 2003 BINMIC Report) prepared by The Floyd Snider McCarthy Team (Floyd Snider McCarthy 2003), the Bulk Terminal Property is located within the BINMIC (Figure 2 of the 2003 BINMIC Report). The current land use of the Bulk Terminal Property is a mix of industrial and commercial.

The Bulk Terminal Property is zoned as Industrial General 2 Unlimited/65 and Industrial Buffer Unlimited/45 according to the City of Seattle’s zoning map. The Industrial General 2 Unlimited/65 zoning classification allows for a broad range of industrial and commercial uses. Typical land use includes general and heavy manufacturing, commercial, entertainment, transportation and utility services, and

salvage and recycling. The intent of the Industrial Buffer Unlimited/45 zoning classification is to provide an appropriate transition between industrial areas and adjacent residential and/or commercial zones. Typical land use includes general and light manufacturing, commercial, limited transportation services, entertainment, and salvage and recycling. The City of Seattle will reportedly permit commercial uses in industrial areas to the extent that they reinforce the industrial character of the region (DPD 2013a). New residential uses will not be permitted by the City of Seattle except for special types of dwellings that are related to the industrial area and that would not restrict or disrupt industrial activity. In addition, the City of Seattle has designated portions of Bulk Terminal Property as environmentally critical areas for Heron Habitat and Wildlife Preservation Areas, 40 Percent Steep Slope, and Potential Slide Area (DPD 2013b).

TOC operated the petroleum bulk storage facility at the Bulk Terminal Property between 1941 and October 2001 (Foster Wheeler Environmental Corporation [Foster Wheeler] 2003). Operations of the petroleum bulk storage facility included distribution of retail petroleum products, including gasoline, diesel, kerosene, and mineral spirits, between transport ships, railroad tank cars, and trucks. Petroleum products were transported at the Seattle Terminal Properties by drums and distribution pipelines. Piping ran from the bulk aboveground storage tanks (AST) on the Bulk Terminal Property to barreling sheds where 5-gallon containers and 55-gallon drums were filled with petroleum products, which were then transported beneath the West Commodore Way ROW to the East Waterfront Property using inclined gravity conveyors (Former West and East Barrel Inclines).

The Bulk Terminal Property was originally occupied by three residences by 1905. Salmon Bay Manufacturing Company and Rattan Furniture Manufacturing Company occupied a portion of the Bulk Terminal Property in the 1920s and 1930s. Operations conducted on the Bulk Terminal Property by these companies are unknown. According to historical assessor records, the Bulk Terminal Property was initially developed by Jobbers Petroleum Sales Co. between 1939 and November 1941. TOC acquired the Bulk Terminal Property in approximately 1941 and operated a petroleum bulk storage facility between 1941 and October 2001.

The operation of the petroleum bulk storage facility included the following buildings: an office building constructed between 1939 and 1941 with numerous additions since construction, a 1946-vintage building used as part of the fire suppression system, a 1950-vintage boiler room, and a 1947-vintage warehouse building that extends onto the ASKO Hydraulic Property. Former features used at the Bulk Terminal Property as part of the petroleum bulk storage facility included AST yards, which included 14 former ASTs and associated piping located on the central and east portion of the parcel; a former barreling shed located on the west portion of the parcel immediately east of the ASKO Hydraulic Property (Former Barreling Shed #1); a former barreling shed located on the southwest portion of the parcel extending onto the ASKO Hydraulic Property (Former Barreling Shed #2); two former overhead loading racks on the north portion on the parcel; and the southern ends of two former barrel inclines (Former West and East Barrel Inclines), and an underground Pipeline Utilidor, all of which extended north beneath the West Commodore Way ROW to the East Waterfront Property.

Historical records indicated that as many as three configurations of barreling sheds were formerly located at the Seattle Terminal Properties. The first configuration was located west of the Headquarters Office Building (Former Barreling Shed #1), the second configuration was located on the southwest portion of the Bulk Terminal Property extending onto the ASKO Hydraulic Property (Former Barreling Shed #2), and the third configuration was operated on the southeast portion of the ASKO Hydraulic

Property (Former Barreling Shed #3). Former Barreling Shed #2 was operated from approximately 1941 to 1952. Former Barreling Shed #3 was constructed after 1952 to replace Former Barreling Shed #2. The full extent of operations conducted at the barreling sheds is unknown.

Additional structures on the Bulk Terminal Property included two 1941-vintage Former Overhead Fuel Loading Racks each with 300-square-foot canopies located directly north of the Lower Tank Yard; the southern end of the East Barrel Incline, which extended from Former Barreling Shed #2 to the East Waterfront Property; a Pipeline Utilidor which extended north from the Lower Tank Yard beneath the West Commodore Way ROW and angled toward the Shipping Terminal Dock; and five Former Rail Spurs extending off the main BNSF railroad (Figure 4). One rail spur ran to the north of the Warehouse Building, three rail spurs ran to the southeast corner of the Warehouse Building, and the fifth rail spur extended to the southeast corner of the Upper Tank Yard.

Petroleum products were delivered to the Bulk Terminal Property via rail cars from the BNSF railroad, barges, and tankers, and were stored in 14 bulk ASTs located in the Lower and Upper Tank Yards, formerly on the central and eastern portions of the Bulk Terminal Property. The 14 bulk ASTs were constructed between 1941 and 1944 (Figure 4). The Lower Tank Yard contained six bulk ASTs, while the Upper Tank Yard contained eight bulk ASTs that were larger in volume. The approximate capacities of the bulk ASTs ranged from 5,225 to 23,000 blue barrels (approximately 219,450 to 966,000 gallons). A blue barrel is estimated to contain 42 gallons. The bulk ASTs and associated piping systems were decommissioned in 2006. The eastern portion of the Bulk Terminal Property is currently undeveloped and primarily covered with 4 to 6 inches of 2- to 4-inch-diameter gravel. The south end of the Upper Tank Yard banks steeply upward to the existing fence line and former rail spur.

Distribution piping ran between the Bulk Terminal Property, East Waterfront Property, and BNSF railroad where petroleum products were pumped between ASTs, transport ships, and railroad tank cars. Fuel distribution lines connected the ASTs to a manifold system that connected to the Former Overhead Fuel Loading Racks and to the Pipeline Utilidor (Foster Wheeler 2000). Petroleum products were transported off the Bulk Terminal Property by pumping the fuel into tanker trucks through the Former Overhead Fuel Loading Racks or by fueling ships via the Pipeline Utilidor.

Additional distribution systems and features included a Former PCP Mixing AST and associated piping system located southeast of the Pump Shed; three USTs and two sets of fuel-dispensing pumps located north of the northeast corner of the Headquarter Office Building; two USTs located on the northern portion of the parcel, with one UST containing ethanol and toluene and the second containing unknown contents; two USTs located east of the Headquarter Office Building, containing heating oil; and four rail spurs (Former Rail Spurs #1 through #4) extending off the main railroad lines located south-southwest of the Bulk Terminal Property. A rail spur (Former Rail Spur #1) ran to the north of the 1947-vintage warehouse building, two rail spurs (Former Rail Spurs #2 and #3) ran to the southeast corner of the 1947-vintage warehouse building, and a rail spur (Former Rail Spur #4) extended to the southeast corner of the Bulk Terminal Property.

According to TOC employees, wood preservative was prepared near the west wall of the Lower Tank Yard by mixing PCP crystals into heated diesel fuel in the Former PCP Mixing AST located south of the Pump Shed for a period of 3 to 4 months in 1967, as part of a military contract (Foster Wheeler 2002b; Figure 4). The PCP mixture was transferred through underground pipelines to the New Barrel Shed located on the ASKO Hydraulic Property, where 5-gallon containers and 55-gallon drums were filled and

loaded onto rail cars for shipment overseas. According to a letter dated July 11, 1967, an order for 55,250 five-gallon pails of wood preservative was to be shipped to Vietnam (Morissette 1967). The material would be made in a 270-gallon “storage vessel” and transferred and manufactured in one mix using the approximately 10,000-gallon Former PCP Mixing AST on the Bulk Terminal Property. The solvent known as B-6 used in the proposed mixing process may have been mineral spirits; however, based on the known fuel products stored at the Bulk Terminal Property, it is likely that TOC used diesel or stove oil to make the wood preservative.

A summary table (Table A) is provided below that includes dates and names of the owners/operators in chronological order, facility addresses (if known), reference sources, and development description based on available current and historical information for the Bulk Property. Historical property features discussed below are also presented on Figure 4.

TABLE A
CHRONOLOGICAL DEVELOPMENT AND USE HISTORY FOR THE BULK TERMINAL PROPERTY

Date(s)	Owner/ Operator	Address	Source(s)	Description
1905–1912	C.F. Anderson, H.D. Chapin	Unknown	Baist Atlas	The Bulk Terminal Property was composed of two smaller parcels owned by C.F. Anderson and H.D. Chapin in the 1905 through 1912 Baist Atlases. Two structures were present on the western portion of the Bulk Terminal Property.
1917–1936	C.F. Anderson, Salman Bay Mfg. Co., Rattan Furniture Mfg. Co.	2801	Aerial Photograph, Kroll Atlas, Sanborn Fire Insurance Map	The 1917 Sanborn Map shows a residence and two small outbuildings on the western portion of the Bulk Terminal Property. The 1920 through 1930 Kroll Atlases show only two structures on the Bulk Terminal Property. The eastern three-quarters of the Bulk Terminal, formerly owned by H.D. Chapin, are listed under the Salman Bay Mfg. Co. The same area is listed under the Rattan Furniture Mfg. Co. in the 1930 Kroll Atlas.
1939–1941	Jobbers Petroleum Sales Co., TOC Holdings Co.	2737	Archived Tax Records, Foster Wheeler 2000 Phase I ESA, TOC Historical Records	The Bulk Terminal Property was owned by Jobbers Petroleum Sales Co. from 1939 to November 1941. A two-story, wood-framed office building for Jobbers Petroleum Sales Co. was constructed on the Bulk Terminal Property. Heat was provided by an oil-burning furnace fueled by a 300-gallon UST. TOC Holdings Co. acquired the Bulk Terminal Property in approximately 1941. Interviews conducted with TOC employees in 2000 indicated that the building was originally used as a field office for construction of the Lake Washington Floating Bridge and was moved to the Bulk Terminal Property in the late 1930s or early 1940s. The portion of the building moved to the Bulk Terminal Property appears to have been added to the existing building. Multiple remodels and additions were conducted on the Headquarters Office Building in the years 1940, 1941, 1950, 1955, 1956, 1969, 1985, and 1991 to achieve its current configuration, including widening the first floor and adding a second story.

Date(s)	Owner/ Operator	Address	Source(s)	Description
1939–1941	Jobbers Petroleum Sales Co., TOC Holdings Co.	2737	Archived Tax Records, Foster Wheeler 2000 Phase I ESA, TOC Historical Records	A 1941 photograph shows two fuel-dispensing pumps north of the Headquarters Office Building, indicating the presence of USTs. The removal of these USTs is summarized in Section 3.4.1. Two steel-framed truck loading racks, each of which had 300-square-foot canopies, were constructed northeast of the office building in 1941.
1943–1950	TOC Holdings Co.	2737	Archived Tax Records, Sanborn Map, Kroll Map, Aerial Photographs, Historical Photographs, TOC Records	TOC purchased the parcels between 1946 and 1950. A 1944 site plan depicted a barreling shed located on the west portion of the Bulk Terminal Property (Former Barreling Shed #1). Records indicated the following: empty 55-gallon drums were stored on the Bulk Terminal Property; an elongated building (Former Barreling Shed #2) extended from the Bulk Terminal Property to the east portion of the ASKO Hydraulic Property; and four rail spurs entered the south portion of the ASKO Hydraulic Property from the BNSF Parcel with one rail spur (Former Rail Spur #1) located north of the reinforced concrete platform and three rail spurs (Former Rail Spurs #2 through #4) located on the south property boundary on both the BNSF Parcel and the ASKO Hydraulic Property. Rail tanker cars were visible on the rail spurs in aerial photographs. An agreement between TOC and Great Northern Railway Company, dated 1943, indicated that the rail spurs would have been owned and maintained by Great Northern Railway Company. A one-story, steel-framed warehouse with an adjoining concrete platform was constructed on the Bulk Terminal Property and extended onto the east portion of the ASKO Hydraulic Property. The building was located between two rail spurs (Former Rail Spurs #1 and #2). Undated historical photographs from TOC showed drum storage on the ASKO Hydraulic Property, a barreling shed (Former Barreling Shed #2), and a barrel incline (Former West and/or East Barrel Inclines). The 1950 Sanborn Map indicated that the 1947-vintage warehouse building was used as an oil warehouse.

Date(s)	Owner/ Operator	Address	Source(s)	Description
1941–1950	TOC Holdings Co.	2737	Aerial Photographs, Archived Tax Records, Foster Wheeler 2000 Phase I ESA, Spur Track Agreement, TOC Historical Records	<p>The 1950 Kroll Atlas presents the Bulk Terminal Property as a single parcel. Fourteen bulk ASTs were constructed on the eastern portion of the Bulk Terminal Property. Six of the ASTs were installed on the northeastern portion of the Bulk Terminal Property (the Lower Tank Yard) in 1941, and eight were installed on the southeastern portion of the Bulk Terminal Property (the Upper Tank Yard) in 1944.</p> <p>The ASTs on the Upper Tank Yard were noticeably larger than the ASTs on the Lower Tank Yard with volumes for the fourteen ASTs ranging from 219,450 gallons to 966,000 gallons. The ASTs were connected by pipe to the manifold shed.</p> <p>The path of the Pipeline Utilidor is visible on the north-adjacent property and likely extends to the Bulk Terminal Property. The Pipeline Utilidor was constructed of three 14-inch and one 24-inch concrete conduits with multiple smaller pipes running through it to the Shipping Terminal Dock, including three 10-inch pipes, three 6-inch pipes, two 4-inch pipes, two 3-inch pipes, one 2-inch pipe, and one 1-1/4-inch pipe.</p>
1941–1950	TOC Holdings Co	2737	Aerial Photographs, Archived Tax Records, Foster Wheeler 2000 Phase I ESA, Spur Track Agreement, TOC Historical Records	<p>Two foamite sheds, used for fire suppression, were constructed in 1946 and encompassed 576 and 84 square feet. One shed was a masonry-framed, one-story, unheated structure, constructed southeast of the Headquarters Office Building. A second shed, smaller and wood-framed, was constructed on the Bulk Terminal Property at an unknown location. In addition, there were 12 small foamite houses which contained hoses as part of the fire suppression system. The foamite houses measured 4 x 2 x 6 feet and were evenly spaced apart along the perimeter of the Upper and Lower Tank Yards.</p>

Date(s)	Owner/ Operator	Address	Source(s)	Description
1941–1950	TOC Holdings Co	2737	Aerial Photographs, Archived Tax Records, Foster Wheeler 2000 Phase I ESA, Spur Track Agreement, TOC Historical Records	A three-section, steel-framed, unheated Warehouse Building is constructed on the south of the Headquarters Office Building and used for storage. The Former Barreling Shed #2 is demolished. A one-story, masonry-framed boiler room is constructed northeast of the warehouse. The boiler is heated by an oil-burning furnace. A steel-framed blending shed is constructed adjacent to the boiler room. An additional AST approximately 10,000-gallons in size used for PCP mixing was constructed at the Bulk Terminal Property.
1966–1996	TOC Holdings Co.	2737	City Directories, Foster Wheeler 2000 Phase I ESA, Kroll Atlas	The Bulk Terminal Property appears in its current configuration. Time Oil Co./Time Oil Co. Fuel is listed at 2737 West Commodore Way during this time period. Additional companies listed at this address include Admiral Tank Lines (1966–1970) and Mercury Oil SLA (1980). A 4,000-gallon unleaded gasoline dual-compartment UST containing 2,500 gallons of diesel fuel and 1,500 gallon of leaded gasoline was removed from north of the office building. One UST with compartments for 3,000 gallons of unleaded gasoline and 1,000 gallons of diesel fuel was installed. Two associated fuel dispensers were also installed on the Bulk Terminal Property. The UST removal and replacement are further discussed in Section 3.4.1.
1996–2007	TOC Holdings Co.	2737	Aerial Photographs, City Directories Aerial Photographs	The Time Oil Co. bulk fuel facility operated on the Bulk Terminal Property until approximately 2001. The 14 bulk fuel ASTs, the PCP mixing AST, and a 4,000-gallon UST were removed from the Bulk Terminal Property in 2006. Jackpot Convenience Stores is listed at this address in 2005.

2.3 LAND USE HISTORY OF WEST COMMODORE WAY ROW

The West Commodore Way ROW was completed by 1912. West Commodore Way ROW runs from east to west and is located directly north of the Bulk Terminal Property. The West Commodore Way ROW consists of a concrete and asphalt roadway with gravel easement. The North Trunk Sewer, operated by the King County Wastewater Treatment Division, was constructed beneath West Commodore Way by the City of Seattle between 1909 and 1913 (Converse Davis Dixon Associates, Inc. 1976). The tunneled portions of the North Trunk Sewer located within West Commodore Way were reportedly constructed as brick crown within a timber set and lagging tunnel. The North Trunk Sewer continues to the West Point Treatment Plant. The top of the North Trunk Sewer is at an approximate elevation of 8 to 20 feet

above the North American Vertical Datum of 1988. The diameter of the section North Trunk Sewer running beneath the West Commodore Way ROW is reportedly 144 inches (12 feet).

Sanitary sewer and stormwater lines servicing the TOC Headquarters Office Building connect to the North Trunk Sewer beneath West Commodore Way. Additional utilities located within the West Commodore Way ROW that service the Bulk Terminal Property include a natural gas main beneath the south shoulder of West Commodore Way, which approaches from the west and terminates with a service connection to the ASKO Hydraulic Property. A water main located beneath the north shoulder of West Commodore Way supplies potable water to the Bulk Terminal Property. TOC records identified a tunnel beneath the West Commodore Way ROW in 1944 used to deliver drums from the Bulk Terminal Property to the East Waterfront Property. The Pipeline Utilidor was also identified running under the West Commodore Way ROW from the Bulk Terminal Property to the East Waterfront Property. Property features discussed below are also presented on Figure 4. A summary table (Table B) is provided below in chronological order that includes dates, reference sources, and development description based on available current and historical information.

**TABLE B
CHRONOLOGICAL DEVELOPMENT AND USE HISTORY FOR WEST COMMODORE WAY ROW**

Date(s)	Owner/ Operator	Address	Source(s)	Description
1905–1917	C.F. Anderson, H.D. Chapin	Not Applicable	Baist Atlas, Converse Davis Dixon Associates, Inc. 1976, Sanborn Fire Insurance Maps	The West Commodore Way ROW did not extend to the north of the Bulk Terminal Property and was composed of two smaller parcels owned by C.F. Anderson and H.D. Chapin in the 1905 and 1908 Baist Atlases, In addition, a single structure within the future West Commodore Way was present. In the 1912 Baist Atlas, the West Commodore Way structure has been removed and the West Commodore Way ROW extends east-west to the north of the Bulk Terminal Property.
1905–1917 (continued)	C.F. Anderson, H.D. Chapin	Not Applicable	Baist Atlas, Converse Davis Dixon Associates, Inc. 1976, Sanborn Fire Insurance Maps	The 1917 Sanborn Map showed a 12-inch water line in the West Commodore Way ROW. The North Trunk Sewer, operated by King County Wastewater Treatment Division, was constructed beneath West Commodore Way by the City of Seattle between 1909 and 1913. The tunneled portions of the North Trunk Sewer were reportedly constructed as brick crown within a timber set and lagging tunnel.
1930	City of Seattle	Not Applicable	Sanborn Fire Insurance Maps	The West Commodore Way ROW is shown as being 60 feet wide.
1944–1950	City of Seattle	Not Applicable	TOC Holding Co. Records	TOC records identified a tunnel beneath the West Commodore Way ROW used to deliver drums from the Bulk Terminal Property to the East Waterfront Property. The Pipeline Utilidor is also shown running under the West Commodore Way ROW from the Bulk Terminal Property to the East Waterfront Property.
1953	City of Seattle	Not Applicable	TOC Holding Co. Records	Records indicated that the tunnel beneath the West Commodore Way ROW is no longer in use. There was no indication of the tunnel existence.

2.4 SURROUNDING PROPERTIES

The Bulk Terminal Property is bounded to the north by the West Commodore Way ROW. Located farther to the north of the Bulk Terminal Property are the East Waterfront Property to the northwest and a Port of Seattle parcel to the northeast. The eastern portion of the Bulk Terminal Property is bounded by 27th Avenue West and beyond by a warehouse building owned by Century Twenty-One Promotions; the southern portion is bounded by the BNSF Parcel; and the western portion is bounded by the ASKO Hydraulic Property (Figure 2). A brief summary of surrounding parcels and their current and historical primary features and operations are provided below by direction.

2.4.1 North

The City of Seattle West Commodore Way ROW runs from east to west and is located directly north of the Bulk Terminal Property. The West Commodore Way ROW was completed by 1912. The West Commodore Way ROW consists of a concrete and asphalt roadway with gravel easement. The King County Wastewater Treatment Division North Trunk Sewer is located beneath West Commodore Way, which conveys waste material to King County's Westpoint Wastewater Treatment Plant. The top of the North Trunk Sewer is at an approximate elevation of 8 to 20 feet above North American Vertical Datum 1988 (NAVD88). The diameter of the North Trunk Sewer section running beneath the West Commodore Way ROW is reportedly 144 inches (Appendix D). Sanitary and stormwater sewers servicing buildings and activities on the Bulk Terminal Property connect to the North Trunk Sewer beneath the West Commodore Way ROW. Additional utilities located within the West Commodore Way ROW that are adjacent to the Bulk Terminal Property include a QWEST Local Network communications line and a Puget Sound Energy natural gas line. A water main located beneath the north shoulder of West Commodore Way supplies water to the Bulk Terminal Property. The East Waterfront Property is located northwest of the West Commodore Way ROW and the Port of Seattle parcel is located northeast of the West Commodore Way ROW, relative to the Bulk Terminal Property.

2.4.1.1 Northwest

The northwest-adjointing property is part of the Seattle Terminal Properties owned by TOC and is identified as the East Waterfront Property. The East Waterfront Property is located at 2750 West Commodore Way and encompasses King County Tax parcel number 112503-9120 and a total area of 3.05 acres. The north portion of the East Waterfront Property extends into Salmon Bay, while the south portion extends to the West Commodore Way ROW. The East Waterfront Property is developed with several buildings including a 1950-vintage, 2,250-square-foot garage; a 1944-vintage, 1,518-square-foot building; a 1950-vintage, 226-square-foot building; and a 1970-vintage, 1,920-square-foot building, which is located on the west-central portion of the East Waterfront Property and currently occupied by ASKO Selective Plating. The remainder of the East Waterfront Property contains a portion of a large dock, two small docks, a gravel driveway, a parking lot, and low-growing vegetation.

The East Waterfront Property was initially developed as part of the Rattan Furniture Manufacturing Co. by 1930. Operations on the East Waterfront Property consisted of a saw mill and dry kilns. Jobbers Petroleum Sales Co. purchased the East Waterfront Property in 1939 and reportedly removed the saw mill and dry kilns. According to historical records, TOC acquired the East Waterfront Property in approximately 1941.

The operation of the petroleum bulk storage facility included the following buildings: a 1932-vintage warehouse used by the Rattan Furniture Manufacturing Co. was cut in half and moved to the East Waterfront Property before 1944; a dock used for loading transport ships completed in 1943 and which extends north into the Washington State DNR Aquatic Lease Land Property and Salmon Bay; a 1944-vintage repair garage shop; a shed constructed in 1950; a 1950-vintage laboratory; and a 1970-vintage warehouse. The 1932-vintage warehouse was leased by George Broom's Sons, Inc. from 1972 to 2011. In 2012, the warehouse was demolished. Currently, ASKO Selective Plating leases the 1970-vintage warehouse.

Former features operated at the East Waterfront Property included an inclined gravity conveyor that transported drums from the ASKO Hydraulic Property to the East Waterfront Property, a

Pipeline Utilidor that transported petroleum products between the Bulk Terminal Property and the East Waterfront Property, and as many as two USTs (one was removed in 1991). In addition, a 2004-vintage shed are located on the East Waterfront Property. As many as three small docks have been located on the East Waterfront Property and removed. The date of removal is unknown.

2.4.1.2 Northeast

The northeast-adjointing property is a single tax parcel (King County Tax Parcel Number 112503-9068) that encompasses 6.6 acres (290,313 square feet) of upland and lowland. The northeast-adjointing property is listed as 2700 West Commodore Way and is owned by the Port of Seattle and identified as the Maritime Industrial Center (King County Assessor 2013). A large three-story, 1926-vintage building occupies the center of the parcel; a 1952-vintage storage warehouse is on the west side of the parcel; and three smaller structures are on the eastern side of the parcel. Three docks and a larger shipping dock extend from this parcel into Salmon Bay.

The first development of this parcel appears to be a small structure in 1912 (Kroll Map Company). From the 1930s to approximately 1940, the Rattan Furniture Manufacturing facility operated on this parcel. The United States Coast Guard occupied this parcel from at least 1950 through 1990. Miller and Miller Boatyard Company Inc., a full service boatyard, currently operates on the eastern portion of the parcel; K-Sea Transportation LLC, a provider of refined petroleum product marine transportation, distribution and logistics services, operates on the west and central portions of the parcel.

2.4.2 East

Adjacent to the east of the Bulk Terminal Property is the 27th Avenue West ROW and beyond the ROW is tax parcel 277060-6119, which encompasses 1.07 acres (46,408 square feet) of land. The eastern parcel is listed as 2601 West Commodore Way and is owned by Century Twenty-One Promotions (King County Assessor 2013). A single-story, 1968-vintage warehouse building occupies most of the parcel with a square footage of 35,946. A parking lot is located east of the warehouse building.

The parcel appeared as several smaller parcels in 1905, and a single residence was present at a minimum on the northwestern most parcel from 1905 through 1950. It is unknown when the single residence was demolished. The remainder of the parcels appeared to be wooded until the current Warehouse Building was constructed. Century Twenty-One Promotions is listed at this address between 1986 through 2005 and appears to currently operate at this location.

2.4.3 South

The BNSF Parcel was initially developed by the Great Northern Railway Company as part of the main railroad line between Minnesota and Seattle, Washington. Reportedly, the main railroad line was completed in 1893. The BNSF Parcel originally consisted of two main railroad lines with steep vegetated slopes located north and south of the main railroad lines. Four rail spurs entered the south portion of the ASKO Hydraulic Property from the BNSF Parcel. One rail spur (Former Rail Spur #1) was located north of the reinforced concrete platform and was used in conjunction with the 1947-vintage warehouse. Three rail spurs (Former Rail Spurs #2 through #4) were located on the south property boundary on both the BNSF Parcel and the ASKO Hydraulic Property. Distribution piping ran from Former Rail Spurs #2, #3, and #4 to the barreling sheds and the Bulk Terminal Property. A historical map of the Seattle Terminal

Properties indicated that Former Rail Spur #4 was owned by Great Northern Railway Company and that Former Rail Spurs #1, #2, and #3 were owned by TOC; however, a Spur Track Agreement between Great Northern Railway Company and TOC indicated that Great Northern Railway Company owned all the rail spurs. Aerial photographs indicated that the rail spurs were removed by 1985. By 1944, five rail spurs originated from the main railroad lines. The BNSF Parcel is currently owned by BNSF. The BNSF Parcel is bounded to the south by the Gilman Avenue West ROW and the West Government Way ROW. The area of Gilman Avenue West and West Government Way is residential and has been residential since at least 1905.

2.4.4 West

The ASKO Hydraulic Property is located at 2805 West Commodore Way and encompasses King County Tax Parcel Number 423790-0405 and a total area of 1.59 acres (69,283 square feet) of land. The west portion of the ASKO Hydraulic Property is developed with a 1964-vintage, 7,198-square-foot building, which is currently occupied by ASKO Industrial Repair, a hydraulic repair, and machine shop. Additional structures include a 1952-vintage, 1,660-square-foot, open-sided building located near the southeast corner of the parcel; a reinforced concrete platform built in 1948; a portion of a 1947-vintage, 7,200-square-foot warehouse building, currently occupied by Marine Service & Supply, located on the southeast portion of the ASKO Hydraulic Property; an office trailer located west of the warehouse and occupied by Marine Service & Supply; and several container boxes and a trailer located west of the 1947-vintage warehouse building. The west portion of the 1947-vintage warehouse building described above extends onto the Bulk Terminal Property. The remainder of the parcel is covered with concrete, asphalt, gravel, or low-growing vegetation, and is surrounded by a chain-link fence.

The earliest available records indicated that portions of the ASKO Hydraulic Property were developed with as many as two small structures in 1905. Reportedly, the land use was agricultural. In 1908, the ASKO Hydraulic Property consisted of smaller parcels that were combined after TOC purchased the parcels between 1946 and 1950. TOC operated a petroleum bulk storage facility at the Bulk Terminal Property between 1941 and October 2001, which used structures within the ASKO Hydraulic Property, East Waterfront Property, Washington State DNR Aquatic Lease Land Property, BNSF Parcel, and the West Commodore Way ROW.

Three ASTs, which reportedly stored lube oil and/or used motor oil, were located on the eastern portion of the ASKO Hydraulic Property (former AST area). The capacity of each AST was reported to be 14,000 gallons. Piping ran from a blending shed located on the Bulk Terminal Property to the ASTs. Aerial photographs indicated that the ASTs were installed by 1953 and removed before 1978.

From 1960 to 1974, the ASKO Hydraulic Property was also used as a truck storage area and parking lot for the petroleum bulk storage. The 1964-vintage warehouse building on the northwest portion of the ASKO Hydraulic Property was used to service TOC vehicles and included a 550-gallon fuel oil UST located directly northeast of the building. A permit application dated 1964 on file with King County Department of Design, Construction, and Land Use indicated there was a permit for two 550-gallon USTs on file. It is unknown if a second UST was installed under this permit; however, historical records provided by TOC showed two 550-gallon USTs used for the storage of waste oil and heating oil. The ASKO Hydraulic Property was used during the historical operations of the petroleum bulk storage facility from 1941 until 2001.

2.5 ENVIRONMENTAL SETTING AND REGULATORY CLASSIFICATION

A summary of the environmental setting, including topography, surface water, soils and geology, hydrogeology, and air for the Bulk Terminal Property and vicinity is provided below.

2.5.1 Regional Topography

The Bulk Terminal Property lies within the Puget Trough or Lowland portion of the Pacific Border Physiographic Province (USGS 2011). The Puget Lowland is a broad, low-lying region situated between the Cascade Range to the east and the Olympic Mountains and Willapa Hills to the west. In the north, the San Juan Islands form the division between the Puget Lowland and the Strait of Georgia in British Columbia. The province is characterized by roughly north-to-south-oriented valleys and ridges, with the ridges that locally form an upland plain at elevations of up to about 500 feet above sea level. The moderately to steeply sloped ridges are separated by swales, which are often occupied by wetlands, streams, and lakes. The physiographic nature of the Puget Lowland was prominently formed by the last retreat of the Vashon Stade of the Fraser Glaciation, which is estimated to have occurred between 14,000 and 18,000 years before present (Waite Jr. and Thorson 1983).

The Bulk Terminal Property is situated near the base of the northeast hillside of the Magnolia Bluff neighborhood within Seattle. The general topography of the upland surface slopes gently to the north from the north portion of the BNSF Parcel to the Bulk Terminal Property towards the shoreline of Salmon Bay. The upland surfaces of the Former Tank Yards were lower in elevation to accommodate the 14 ASTs and associated piping systems and control stormwater runoff for the former bulk fuel facility operations. The upland surface of the BNSF Parcel was cut to accommodate the main railroad lines. This resulted in two steep, vegetated slopes on the north and south sides of the main railroad lines. The elevation of the Bulk Terminal Property ranges from approximately 44 feet above mean sea level at the West Commodore Way ROW to 51 feet above mean sea level at the southwest of the Bulk Terminal Property. The general topography of the Bulk Terminal Property is presented on Figure 5.

2.5.1 Surface Water and Sediments

Salmon Bay is located approximately 110 feet north of the Bulk Terminal Property. Salmon Bay is a man-made marine waterway located between the Hiram M. Chittenden Locks, operated by U.S. Army Corps of Engineers, to the west and Lake Union to the east. The Hiram M. Chittenden Locks were constructed to move boats between the freshwater Lake Washington Ship Canal to the east and the saltwater Elliot Bay to the west. Upstream of the Hiram M. Chittenden Locks, a submarine barrier was constructed to minimize the mixing of freshwater and saltwater and to limit the movement of saltwater upstream (Floyd Snider McCarthy 2003).

2.5.1.1 Surface Water

Saltwater intrudes into Salmon Bay as a result of the operation of the Hiram M. Chittenden Locks, which connect the Lake Washington Ship Canal with Puget Sound. Depending on the levels of salinity present, sediments in certain areas may be classified as marine, low-salinity, or freshwater (Ecology 2000). It is unlikely that Salmon Bay would be used as a drinking water source because it is known to be mildly saline as a result of mixing with seawater at the Hiram Chittenden Locks (Floyd Snider McCarthy 2003).

Groundwater from Salmon Bay and the Lake Washington Ship Canal upland areas moves primarily laterally from topographically higher elevations towards the lower elevations adjacent where it discharges to these surface water bodies. Locally, variations in soil conditions and engineering of shallow soils may cause groundwater to flow for short distances in other directions; however, eventually the groundwater discharges to the main surface water bodies (Floyd Snider McCarthy 2003).

Stormwater runoff from the Former Tank Yards, the paved area between the Headquarters Office Building, and the Former Overhead Fuel Loading Racks, is intercepted by a series of zipper drains that route stormwater to the system influent sump. Stormwater is pumped from the sump into the oil/water separator. The accumulated water within the oil/water separator drains by gravity to a transfer tank. Mechanical float switches control the fluid level in this transfer tank through the operation of a process pump that pumps water from the transfer tank through a series of bag filters before it is routed through two liquid-phase granular-activated carbon (GAC) treatment vessels. The system is designed to operate with a pair of GAC units in series with a second pair of GAC units on standby if breakthrough occurs in the primary units. When the two GAC units in service become exhausted, they are taken off line and the flow is routed through the clean standby units that are also operated in series. Effluent water from the GAC vessels discharges to the King County Metro Storm Sewer and a data logger records flow rate and total cumulative flow data from the flowmeter located on the discharge line.

The majority of the Bulk Terminal Property is unpaved. Runoff from the building roof tops is captured in gutters and flows downspouts that discharge to the stormwater piping system or to the surface.

2.5.1.2 Sediments

General deposition processes for Salmon Bay include eroded soils and discharged outfall sediments from Salmon Bay and the Lake Washington Ship Canal upland areas and associated sediment transport from the Lake Washington Ship Canal. The rate of sediment deposition for Salmon Bay is unknown.

The ground surface at the Bulk Terminal Property is covered with a thick layer of gravel, densely vegetated, or paved. These control measures prevent the erosion of soil at the Bulk Terminal Property and minimize the potential migrations of sediments to Salmon Bay.

2.5.2 Soils and Geology

According to the Geologic Map of Northwestern Seattle (Booth et al. 2005), the surficial geology in the vicinity of the Bulk Terminal Property consists of deposits corresponding to the Vashon Stade of the Fraser Glaciation and pre-Fraser glacial and interglacial periods. In the immediate vicinity of the Bulk Terminal Property, surficial deposits consist of pre-Fraser Olympia beds, and modified land characterized as fill and/or graded natural deposits that obscure or alter the original deposit (Booth et al. 2005).

The youngest pre-Fraser deposits in the Seattle area, known as the Olympia beds, were deposited during the last interglacial period, approximately 18,000 to 70,000 years ago. The Olympia beds consist of very dense, fine to medium, clean to silty sands and intermittent gravel channel deposits, interbedded with hard silts and peats (Booth et al. 2005, Galster and Laprade 1991). Organic matter and localized iron-oxide horizons are common. The Olympia beds have known thicknesses of up to 80 feet. Beneath the Olympia beds are various older deposits of

glacial and nonglacial origin. In general, deposits from older interglacial and glacial periods are similar to deposits from the most recent glacial cycle, due to similar topographic and climactic conditions (Booth et al. 2005).

The Vashon ice-contact deposits are located on the hillside above the Bulk Terminal Property and are generally discontinuous, highly variable in thickness and lateral extent, and consist of loose to very dense, intermixed glacial till, and glacial outwash deposits. The till typically consists of sandy silts with gravel. The outwash consists of sands and gravels, with variable amounts of silt (Booth et al. 2005).

The Vashon advance outwash deposits are located on the hillside above the Bulk Terminal Property and are generally discontinuous and consist of loose to very dense layered sands and gravels, which are generally well-sorted (poorly graded). Layers of silty sands and silts are less common. The Vashon recessional lacustrine deposits consist of layered silts and clays, which range in plasticity from low to high, and may contain localized intervals of sand or peat. The recessional lacustrine deposits may grade into recessional outwash deposits (Booth et al. 2005).

The undeveloped portions of the Bulk Terminal are either covered with grasses, small shrubs, or gravel. According to geologic cross sections in the 2003 BINMIC Report, Galster and Laprade (1991), Booth et al. (2005), boring logs and cross sections in the Fort Lawton Parallel Tunnel Project Geotechnical Report (Municipality of Metropolitan Seattle 1989), and subsurface investigations conducted at the Seattle Terminal Properties, the uppermost soil layer in the vicinity of the Seattle Terminal Properties and the West Commodore Way ROW typically consists of fine- to coarse-grained soils classified as the Holocene Fill (Hf) geologic unit. The Hf geologic unit ranges from approximately 5 to greater than 20 feet thick, and consists of very loose to very dense, highly variable engineered and non-engineered fill material. Underlying the Hf geologic unit is the Holocene Depression Fillings (Hdf) geologic unit that consists of very soft to medium stiff, fine-grained sand, silt, and clay, with scattered organic particles and very soft peat deposits. The Hf and Hdf geologic units are not shown on the BINMIC geologic cross section B–B, which shows the Seattle Terminal Properties and the West Commodore Way ROW underlain by an approximate 35-foot thickness of “Unknown Outwash” that overlies clay or glaciolacustrine deposits; however, based on boring logs from the vicinity of the Seattle Terminal Properties, the “unknown Outwash” could be interpreted as the Hf and Hdf geologic units. Underlying the Hf and Hdf geologic units are the pre-Fraser-age glacial deposits (Qpf). The Qpf geologic unit consists of dense to hard, interbedded sand, gravel, and silt. These deposits can be further subdivided into fine- (Qpff) and coarse-grained (Qpfc) deposits.

2.5.3 Hydrogeology

The glacial and nonglacial deposits beneath the Seattle area comprise the unconsolidated Puget Sound aquifer system, which can extend from ground surface to depths of more than 3,000 feet. Coarse-grained units within this sequence generally function as aquifers, and alternate at some scale with fine-grained units which function as aquitards (Vaccaro et al. 1998). Above local or regional water table aquifers, discontinuous perched groundwater may be present in coarse-grained intervals seated above fine-grained intervals. Below the regional water table, the alternating pattern of coarse and fine-grained units results in a series of confined aquifers. Regional groundwater flow is generally from topographic highs toward major surface water bodies such as Puget Sound, Lake Union, Lake Washington Ship Canal, and Salmon Bay. Vertical hydraulic gradients are typically upward near the major surface water bodies, and downward

inland (Floyd Snider McCarthy Team 2003, Vaccaro et al. 1998). Regional groundwater flow typically discharges to the closest major surface water body. Salmon Bay is located north of the Bulk Terminal Property.

Seasonal perched water is observed from approximately 5 to 8 feet below ground surface (bgs) in soils that consist of poorly-graded silty sand. Discontinuous thin layers of fine-grained soils, including silt and clay which are less permeable, separate the perched water from a site-wide underlying shallow water-bearing zone. A shallow water-bearing zone was observed from approximately 8 to 23 feet bgs in soils that consist of poorly graded sand and silty sand. The shallow water-bearing zone is underlain by two semiconfined to confined water-bearing zones with characteristics similar to soils within the shallow water-bearing zone. The intermediate water-bearing zone is located from approximately 26 to 40 feet bgs. The two water-bearing zones are separated by silt and clay with silty sand layers that act as regional confining units that partially confine or confine the groundwater stored within the shallow and intermediate water-bearing zones. A third water-bearing zone identified as the deep water-bearing zone was observed at the ASKO Hydraulic Property located hydraulically crossgradient of the Bulk Terminal Property. The deep water-bearing zone is located from approximately 52 to 62 feet bgs at the ASKO Hydraulic Property. A rose diagram depicting historical groundwater flow direction of the shallow water-bearing zone is provided herein and described in more detail in section 4.2.7. The general groundwater flow direction for the shallow water-bearing zone is to the northwest-north.

According to the BINMIC Hydrogeologic and Environmental Settings Report (Floyd Snider McCarthy 2003), three water supply wells were located in the BINMIC area. Two of the wells are located north of Salmon Bay and the Bulk Terminal Property, and the third was reportedly located 0.85 miles southeast of the Bulk Terminal Property. The wells were reportedly all used for industrial or commercial purposes and are thought to be abandoned.

Seattle Public Utilities provides the potable water supply to Seattle. Seattle Public Utilities' main source of water is derived from surface water reservoirs located within the Cedar and South Fork Tolt River watersheds. According to King County's Interactive Map for the County's Groundwater Program, there are no designated aquifer recharge or wellhead protection areas within several miles of the Bulk Terminal Property.

2.5.4 Air

Climate in the Seattle area is generally mild and experiences moderate seasonal fluctuations in temperature. Average temperatures range from 60s in the summer to the 40s in the winter. The warmest month of the year is August, which has an average maximum temperature of 74.9 degrees Fahrenheit (°F), while the coldest month of the year is January, which has an average minimum temperature of 36.0 °F. The annual average rainfall in the Seattle area is 38.25 inches, with December as the wettest month of the year, when the area receives an average rainfall total of 6.06 inches (IDcide 2013). The prevailing wind direction in the Seattle area is from the south in winter and spring, from the northwest in the summer and early fall, and from the south-southeast in the fall and early winter (Western Regional Climate Center 2013).

The main underlying sources for ambient air pollutants in Seattle are motor vehicle traffic and residential wood burning (PSCAA 2010). Airborne pollutants can reach the terrestrial surfaces and sediment directly, through the deposition of airborne chemicals, primarily in the form of particulate matter onto the water surface, and indirectly through the deposition of particulate

matter on terrestrial surfaces from which they are conveyed via surface water runoff and stormwater to water bodies (Anchor QEA 2012).

3.0 PREVIOUS INVESTIGATIONS, GROUNDWATER MONITORING EVENTS, AND INTERIM REMEDIAL ACTIONS

This section summarizes activities and results from previous investigations, groundwater monitoring events, and interim actions conducted by others at the Site from 1991 to 2005. Additional information is provided in the referenced reports, which are included in Appendix E. Preliminary cleanup levels for affected environmental media, identified from these previous activities, are provided in Table 1. Affected environmental media include soil and groundwater and are defined in Section 5.2. Historical site features are shown on Figure 4.

3.1 PREVIOUS INVESTIGATIONS

Several of the previous investigations at the Bulk Terminal Property were performed in conjunction with investigations conducted at the ASKO Hydraulic Property and/or West Commodore Way ROW in an effort to improve efficiencies. Previous investigations conducted at the Bulk Terminal Property are discussed below.

The information provided in Section 3.1.1 was compiled from various summaries, figures, and tables from available subsurface investigation reports prepared by others. The other following subsections are summaries of specific due diligence and investigation reports prepared by others (Appendix E).

3.1.1 1999–2002 Subsurface Investigations

This section provides a summary of the borings and soil and reconnaissance groundwater sample analytical results for the Bulk Terminal Property and the West Commodore Way ROW. The subsurface investigations summarized in this section were completed between 1999 and 2002. A summary of the locations of borings advanced during these subsurface investigations at the Bulk Terminal Property and the West Commodore Way ROW is provided below (Figures 6A and 6B):

- In June 1999, borings 01SB01 through 01SB09 were advanced to approximately 20 to 25 feet bgs in the vicinity of the former USTs #1 through #3, and in the southern end of the Pipeline Utilidor. Soil samples were analyzed from borings 01SB05 and 01SB07 through 01SB09, and reconnaissance groundwater samples were collected from borings 01SB01 through 01SB05 and 01SB07 through 01SB09.
- Well borings 01MW01, 01MW04, and 01MW05 were advanced to depths of 25 feet bgs in September 1999. Boring 01MW01 was advanced east of the southeast corner of the Headquarters Office Building, and borings 01MW04 and 01MW05 were advanced north of the Headquarters Office Building. No soil sample analytical results were available for review from these borings.
- Borings 01MW02 and 01MW03 were advanced within West Commodore Way to the north and downgradient of the Headquarters Office Building in 1999. No soil analytical data were available for review from these borings.

- In 2000, borings SB-10 through SB-23 were advanced along the former rail spur lines located south of the Warehouse Building (SB-10), within the Upper Tank Yard (SB-11 through SB-17), within the Lower Tank Yard (SB-18 through SB-20), and along the southern border of the Upper Tank Yard (SB-21 through SB-23).
- Boring SB-24 was advanced to 20 feet bgs and converted into monitoring well 01MW12 in the Lower Tank Yard in 2000.
- Boring SB-35 was advanced to 25 feet bgs west of the former UST area and converted into monitoring well 01MW08 in 2000.
- Borings SB-36, SB-37, SB-38, and SB-44 were advanced within West Commodore Way to the north and downgradient of the Lower and Upper Tank Yards in 2001. Borings SB-36, SB-37, SB-38, and SB-44 were converted into monitoring wells 01MW09, 01MW10, and 01MW11, respectively. No soil analytical data were available for review from borings SB-38 and SB-44.
- Boring SB-39 was advanced adjacent to the Former Overhead Fuel Loading Racks in 2001.
- Well 01MW13 was advanced to 20 feet bgs in the Upper Tank Yard in July 2001. No boring identification was given for this boring. No soil sample analytical results were available for review from this boring.
- Borings SB-65 through SB-67 were advanced to depths ranging from 26.5 to 31.5 feet bgs at the northwest corner of the Headquarters Office Building in 2002. These borings were converted to monitoring wells 01MW18 through 01MW20.
- Wells 01MW21 through 01MW25 were installed in the Lower Tank Yard and wells 01MW26 through 01MW29 were installed between the Lower Tank Yard and the Headquarters Office Building to depths ranging from 18 to 25 feet bgs in December 2002. No boring identification was given for these borings. No soil sample analytical results were available for review from these borings.
- Borings LR01 through LR07 were advanced to approximately 20 feet bgs in the vicinity of the Former Overhead Fuel Loading Racks in December 2002.

3.1.2 2000 Phase I Environmental Site Assessment

Foster Wheeler completed a Phase I Environmental Site Assessment (ESA) for the Bulk Terminal Property (Foster Wheeler 2000). The Phase I ESA indicated the parcel had been used as a petroleum storage facility since the late 1930s, detectable concentrations of total petroleum hydrocarbons were present in groundwater beneath the parcel, and an additional investigation was recommended to assess the extent of petroleum contamination (Foster Wheeler 2000). Specific recommendations included the following:

- Advancing borings in the vicinity of the rail spur in the Upper Tank Yard, the rail spur on the south side of the Warehouse Building, the former ASTs north of the Warehouse Building, Former Barreling Sheds #2 and #3, the Lower Tank Yard, and the former USTs near the northeast corner of the Headquarters Office Building.
- Analyzing soil samples for petroleum hydrocarbon constituents, PCP, and lead.

- Installing three monitoring wells in the vicinity of the former USTs at the northeast corner of the Headquarters Office Building.
- Analyzing groundwater for petroleum hydrocarbon constituents, PCP, and dissolved lead.

3.1.3 2000 Subsurface Investigation

Foster Wheeler conducted a subsurface investigation at the Bulk Terminal Property and ASKO Hydraulic Property in November 2000, which is summarized in Foster Wheeler (2002b). The subsurface investigation was performed to assess the subsurface conditions in the vicinity of the Former PCP Mixing AST, Former Barreling Sheds #2 and #3, and the Former Rail Spurs. The soil removal activities described in the report are discussed in Section 3.4, Interim Actions. The subsurface investigation included the following (Figures 6A and 6B):

- Advancing five borings, SB-01 through SB-05, around the Former PCP Mixing AST location. The borings were advanced with a hand-auger to depths ranging from 3 to 14 feet bgs.
- Collecting four surface soil samples, SS-01 through SS-04, in the vicinity of the Former PCP Mixing AST.
- Advancing six hollow-stem auger borings, SB-26 through SB-31, to depths ranging from 20 to 25 feet bgs in the area of Former Barreling Shed #2 and between Former Barreling Shed #3 and the Headquarters Office Building. Boring SB-29 was converted into monitoring well 01MW06. Boring SB-30 was advanced on the ASKO Hydraulic Property; however, no samples were analyzed from boring SB-30. In addition, analytical results were not available for borings SB-26 and SB-28.
- Advancing two not identified borings near Former Barreling Shed #3 and abandoning the borings at less than 1 foot bgs due to refusal. The exact locations of these borings are unknown.

3.1.4 2001 Subsurface Investigation

According to the Phase III Environmental Site Assessment Report, Foster Wheeler conducted a subsurface investigation in July 2001 to further evaluate subsurface conditions in the vicinity of the Former PCP Mixing AST, Barrel Sheds #2 and #3, the Former Rail Spurs located south of the Upper Tank Yard, and the vicinity of former USTs adjacent to West Commodore Way (Foster Wheeler 2001). The subsurface investigation included the following (Figures 6A and 6B):

- Advancing five borings (SB-52 through SB-56) in the vicinity of the Former PCP Mixing AST to depths of 12 to 15 feet bgs. Boring SB-56 was converted to monitoring well 01MW14. Boring SB-57 was advanced in this area, but only to a depth of 18 inches bgs, due to the presence of subsurface utilities.
- Advancing boring SB-59 to a depth of 20 feet bgs, near the northwest end of Former Barreling Shed #2.
- Advancing boring SB-60 east of former leaking USTs #1 through #3, to a depth of 22.5 feet bgs and converted to monitoring well 01MW16.

- Advancing boring SB-61 to a depth of 32 feet bgs adjacent to the Former Rail Spurs south of the Upper Tank Yard. Boring SB-61 was converted to monitoring well 01MW17.

3.1.5 2003 Ground Penetrating Radar and Electromagnetic Survey

Tetra Tech FW, Inc. (Tetra Tech) observed a ground-penetrating radar (GPR) and electromagnetic survey performed by Apollo Geophysics Corporation on August 15, 2003, and summarized the results in a letter report (Tetra Tech 2003). The purpose of the survey was to locate subsurface anomalies, such as unknown USTs or piping, which may be the source of light nonaqueous-phase liquid (LNAPL) as TPHs measured in well 01MW05. The survey also identified an approximate area measuring 60 feet by 40 feet in the vicinity of 01MW05, located north of the northwest corner of the Headquarters Office Building on the Bulk Terminal Property (Figure 6A). The survey identified a buried pipe located approximately 6 feet south of monitoring well 01MW05. The pipe was located approximately 2 feet bgs and ran east to west, extending approximately 66 feet west of monitoring well 01MW05 before it ran to the southwest toward Former Barreling Shed #3 (Figure 4). The location of the pipe was not confirmed by excavation. The eastern extent of the buried pipe could not be established because of interference from a concrete slab containing rebar. According to Tetra Tech, the pipe did not appear to be associated with facility operations at the Bulk Terminal Property (Tetra Tech 2003).

3.2 GROUNDWATER MONITORING EVENTS

A summary of groundwater monitoring events conducted by others before 2006 and the associated results at the Bulk Terminal Property and the West Commodore way ROW are provided below:

- Final Quarterly Groundwater Sampling Report for July 2004, dated November 2004, prepared by Tetra Tech.
- Draft Quarterly Groundwater Sampling Report for November 2004, dated March 2005, prepared by Tetra Tech.
- Annual Event/Fourth Quarter 2005, Groundwater Monitoring Event, dated December 20, 2005, prepared by Landau Associates, Inc.

In addition, several groundwater monitoring events were conducted as part of previous subsurface investigations or interim actions. Detailed information regarding field activities, procedures, and results are provided in the referenced reports prepared by others (Appendix E). Typical groundwater monitoring events included the following work elements:

- Measuring the depth to water and/or LNAPL, if present.
- Purging a minimum of three to five monitoring well casing volumes from each well, or purging groundwater using low-flow sampling methods before sampling the monitoring wells.
- Monitoring groundwater quality parameters with low-flow groundwater sampling techniques for temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential (ORP).
- Collecting groundwater samples from each monitoring well for selected laboratory analyses.

A total of 19 monitoring events were conducted as independent events or as part of previous subsurface investigations or interim actions. The monitoring events were performed between September 1999 and October 2005. The number of wells sampled for each event was based on individual scopes of work approved by TOC. The data suggests that groundwater flow direction was generally to the northwest for the Seattle Terminal Properties, including the Bulk Terminal Property, which is consistent with the measurements obtained by SoundEarth during later groundwater monitoring events. Groundwater samples were analyzed for the following: diesel-range petroleum hydrocarbons (DRPH); oil-range petroleum hydrocarbons (ORPH); gasoline-range petroleum hydrocarbons (GRPH); BTEX; methyl tertiary-butyl ether (MTBE); PCP; total and dissolved lead; and carcinogenic polycyclic aromatic hydrocarbons (cPAH).

3.3 PREVIOUS INVESTIGATION RESULTS

Soil boring and monitoring well locations are shown on Figures 6A and 6B. Historical soil analytical results for the primary indicator hazardous substances of DRPH, ORPH, GRPH, benzene, and PCP, are shown on Figures 7A and 7B; 8A and 8B; and 9A through 9C. Additional soil analytical results are shown on Figures 10A and 10B. Soil analytical results are summarized on Tables 2 through 5, and reconnaissance groundwater analytical results are summarized on Table 6. Historical groundwater elevation measurements are presented in Table 7 and groundwater and LNAPL analytical results are summarized on Tables 8 through 11. Interim Action soil analytical results are presented on Tables 12 through 15.

3.3.1 Soil

The analytical results for soil samples from the previous investigations conducted between 1999 and 2003 are summarized below for the COPCs for the Site.

3.3.1.1 Total Petroleum Hydrocarbons and Volatile Petroleum Compounds

Soil samples collected from 47 borings were analyzed for DRPH, ORPH, GRPH, benzene, toluene, ethylbenzene, total xylenes, and/or MTBE. Concentrations of MTBE were not detected at the laboratory reporting limit. Concentrations of DRPH, ORPH, GRPH, benzene, toluene, ethylbenzene, and total xylenes were detected in one or more of the selected soil samples collected from the boring locations. The highest detectable concentrations for DRPH, ORPH, GRPH, benzene, toluene, ethylbenzene, and total xylenes; the boring location where the soil sample was collected; and the suspected source/source area are tabulated below.

Chemicals of Potential Concern	Boring/Highest Detected Concentration (mg/kg)	Suspected Source/Source Area
DRPH	01SB08/33,900	Former USTs #1 through #3 and the Former pump island
ORPH	SB-31/7,730	Former pump island
GRPH	01SB09/755,000	Former barreling sheds
Benzene	01SB09/5,590	Former barreling sheds
Toluene	01SB09/26,200	Former barreling sheds
Ethylbenzene	01SB09/9,500	Former barreling sheds
Total Xylenes	01SB09/55,800	Former barreling sheds

NOTES:

DRPH = diesel-range petroleum hydrocarbons
 GRPH = gasoline-range petroleum hydrocarbons
 mg/kg = milligrams per kilogram
 ORPH = oil-range petroleum hydrocarbons
 UST = underground storage tank

3.3.1.2 Pentachlorophenol

Soil samples collected from 17 borings were analyzed for PCP which was detected in one or more of the selected soil samples collected from the boring locations. The highest detectable concentrations of PCP, the boring location where the soil sample was collected, and the suspected source/source area is tabulated below.

Chemicals of Potential Concern	Boring/Highest Detected Concentration (mg/kg)	Suspected Source/Source Area
PCP	SB-04/803	Former PCP mixing AST area

NOTES:

AST = aboveground storage tank
 mg/kg = milligrams per kilogram
 PCP = pentachlorophenol

3.3.1.3 Carcinogenic Polycyclic Aromatic Hydrocarbons

Using the toxicity equivalency factor methodology in WAC 173-340-708(8), equivalent concentrations of the cPAHs (benz[a]anthracene, chrysene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, indeno[1,2,3-cd]pyrene, and dibenz[a,h]anthracene) were calculated for soil samples collected from 21 boring locations. In addition, PAHs including naphthalene, 1-methyl-naphthalene, and 2-methyl-naphthalene were analyzed for soil samples collected from 22 boring locations. The highest detectable concentrations for cPAH toxicity equivalency quotient (TEQ), naphthalene, 1-methyl-naphthalene, 2-methyl-naphthalene, the boring location where the soil sample was collected and suspected source/source area are tabulated below.

Chemicals of Potential Concern	Boring/Highest Detected Concentration (mg/kg)	Suspected Source/Source Area
cPAH TEQ	SS-04/9.26	Former bulk fuel ASTs, former PCP mixing AST
Naphthalene	LR07/4.48	Former loading racks
1-methyl-naphthalene	01MW24/5.78	Former open trench area, former manifold pit
2-methyl-naphthalene	LR07/72.9	Former loading racks

NOTES:

AST = aboveground storage tank

cPAH = carcinogenic polycyclic aromatic hydrocarbons

mg/kg = milligrams per kilogram

PCP = pentachlorophenol

TEQ = toxicity equivalency quotient

3.3.1.4 Lead

Soil samples collected from 28 borings were analyzed for lead. Concentrations of lead were detected in one or more of the selected soil samples collected from boring locations. The highest detectable concentration for lead, the boring location where the soil sample was collected, and the suspected source/source area are tabulated below.

Chemicals of Potential Concern	Boring/Highest Detected Concentration (mg/kg)	Suspected Source/Source Area
Lead	01MW26/278	Former underground distribution pipelines, former pump shed area, naturally occurring

NOTE:

mg/kg = milligrams per kilogram

3.3.2 Groundwater

The general groundwater monitoring observations and analytical results for primary COPCs from the groundwater monitoring events performed from 1999 through 2005 are summarized below for the Site.

3.3.2.1 Monitoring Observations

Based on the groundwater reports listed above, depth to water measurements ranged from a high of 5.45 feet below the top of casing (well 01MW23) to a low of 23.50 feet below the top of casing (well 01MW10). Seasonal fluctuations of the groundwater ranged from approximately 8 to 14 feet bgs; accordingly, this 8- to 14-foot range defines the smear zone. The groundwater flow direction of the shallow water-bearing zone is generally to the north-northwest for the Seattle Terminal Properties, and is consistent with the measurements obtained by SoundEarth, as summarized in Section 4.2.

3.3.2.2 Total Petroleum Hydrocarbons and Volatile Petroleum Compounds

Concentrations of TPHs and/or volatile petroleum compounds were detected in one or more groundwater samples during the 19 monitoring events. The highest detectable concentrations for DRPH, ORPH, GRPH, benzene, toluene, ethylbenzene, and total xylenes; the well location

where the groundwater sample was collected; the month and year the sample was collected; and the suspected source/source area are tabulated below.

Chemicals of Potential Concern	Boring/Highest Detected Concentration (µg/L)	Month and Year	Suspected Source/Source Area
DRPH	01MW09/19,200	Jul-04	Former barrel inclines, Former Barreling Shed #1, former UST #1 through #3
ORPH	01MW25/1,670	Aug-03	Former bulk fuel ASTs, former open trench area, former manifold pit
GRPH	01MW28/210,000	Aug-03	Former underground distribution pipelines, former bulk fuel ASTs, former pump shed area, former loading racks, former pipeline utilidor
Benzene	01MW02/16,100	Apr-05	Former USTs #1 through #3, former loading racks, former pipeline utilidor
Toluene	01MW20/2,880	Jul-02	Former barrel inclines, Former Barreling Shed #1, former USTs #1 through #3
Ethylbenzene	01MW19/894	Oct-05	Former barrel inclines, Former Barreling Shed #1, former USTs #1 through #3
Total Xylenes	01MW19/87	Oct-05	Former barrel inclines, Former Barreling Shed #1, former USTs #1 through #3

NOTES:

µg/L = micrograms per liter

DRPH = diesel-range petroleum hydrocarbons

GRPH = gasoline-range petroleum hydrocarbons

ORPH = oil-range petroleum hydrocarbons

Concentrations of MTBE were not detected above the laboratory reporting limits or the preliminary cleanup levels in the analyzed groundwater.

3.3.3 Pentachlorophenol

Concentrations of PCP were detected in one or more groundwater samples during the 19 monitoring events. The highest detectable concentrations of PCP, the well location where the groundwater sample was collected, and the suspected source/source area is tabulated below.

Chemicals of Potential Concern	Well ID/Highest Detected Concentration (µg/L)	Month and Year	Suspected Source/Source Area
PCP	01MW22/400	January 2003	Former PCP mixing AST

NOTES:

µg/L = micrograms per liter
 AST = aboveground storage tank
 PCP = pentachlorophenol

Concentrations of PCP were detected in one LNAPL sample during one out of seven LNAPL sampling events. No detections were observed in ten out of eleven wells sampled for PCP in LNAPL. The detectable concentration of PCP in LNAPL was 140 micrograms per gram in the LNAPL sample collected from monitoring well 01MW14 during the sampling event in July 2001 (Table 9).

3.3.3.1 Carcinogenic Polycyclic Aromatic Hydrocarbons

Concentrations of cPAHs were not detected above the laboratory reporting limits or the preliminary cleanup levels in the analyzed groundwater.

3.3.3.2 Lead

Concentrations of total lead were detected in groundwater samples during the one or more of the 19 monitoring events. The highest detectable concentrations of lead, the well location where the groundwater sample was collected, and the suspected source/source area is tabulated below.

Chemicals of Potential Concern	Boring/Highest Detected Concentration (µg/L)	Month and Year	Suspected Source/Source Area
Total Lead	01MW03/ 87	September 1999	Former USTs #1 through #3, former loading racks, former pipeline utilidor

NOTES:

µg/L = micrograms per liter
 UST = underground storage tank

Concentrations of dissolved lead were not detected above the laboratory reporting limits or the preliminary cleanup levels in the analyzed groundwater.

3.4 INTERIM ACTIONS

A summary of the interim actions conducted by others at the Site between 1991 and 2003 is provided below. Figures 11 and 12 illustrate the locations of the interim action conducted at the Bulk Terminal Property by others.

3.4.1 1991 Waste Oil Underground Storage Tank Removal

According to a letter from TOC to Ecology, dated December 30, 1991, Underground Storage Tank Site Check/Site Assessment at Seattle Terminal, Lee Morse Construction removed two USTs (USTs #1 and #2) and two fuel-dispensers as part of a facility upgrade on September 16, 1991 (Time Oil Co. 1991). The USTs included a 4,000-gallon UST (UST #1) containing unleaded gasoline with an unknown installation date and a UST (UST #2) with a baffled tank system, which provided two compartments of 1,500 and 2,500 gallons for storage of leaded gasoline and diesel fuel. UST #2 was reportedly installed in 1980 (Foster Wheeler 2000). The two USTs were located north of the northeast corner of the Headquarters Office Building (Figure 11). The fuel dispensers were part of the former pump island near the northeast corner of the Headquarters Office Building, shown on Figure 4. Upon completion of the removal, slight rusting and pitting was observed on the USTs; however, no holes were reportedly observed. Soil within the UST cavity excavation appeared to be impacted by petroleum hydrocarbons, which was attributed by Lee Morse Construction to years of tank overfill and spillage. The interim action included the excavation and removal of approximately 140 cubic yards of petroleum-contaminated soil at the Bulk Terminal Property. A new 4,000-gallon UST (UST #3) was installed within the excavation, after the excavation activities were completed. UST #3 was also baffled to provide two compartments of 1,000 and 3,000 gallons for diesel fuel and unleaded gasoline. Two new fuel-dispensers were also installed as part of the former pump island (Figure 4) near the northeast corner of the Headquarters Office Building.

The location and approximate lateral extent of the excavation is shown on Figure 11. The excavation measured approximately 25 feet by 20 to 25 feet. The final depth of the excavation is unknown, but extended at minimum to 7 feet bgs. The excavation was discontinued due to the proximity to the Headquarters Office Building to the south and high ambient air monitoring readings. Eight soil samples (N1-12', S1, E1, W1, Floor, NW1, PI1, and PI2) were collected from the sidewalls and bottom of the excavation and beneath the former fuel dispensers. Soil samples were submitted for laboratory analysis of DRPH, GRPH, BTEX, and/or lead.

Fill material was encountered within the excavation from ground surface to approximately 7 feet bgs and consisted of sandy silt with gravel, with some wood and metal debris. Native soil underneath the fill consisted of sandy silt with gravel grading to silty, fine to medium sand. Groundwater was encountered in the excavation at approximately 18 feet bgs. A heavy sheen was observed on the groundwater table. Analytical results for soil samples collected from the excavation limits indicated the following:

- Concentrations of DRPH were below the laboratory detection limit or the preliminary cleanup level in the analyzed soil samples.
- Concentrations of GRPH exceeding the preliminary cleanup level were detected in the two soil samples collected beneath the fuel dispensers at 4 feet bgs, from the bottom of the UST excavation at 12.5 feet bgs, and from the east sidewall at 10 feet bgs (Table 12).
- Concentrations of one or more volatile petroleum compounds (BTEX) exceeding the preliminary cleanup levels were detected in the soil samples collected beneath fuel-dispensers and from the bottom of the UST excavation (Table 12).

- Concentrations of lead were below the laboratory reporting limit or the preliminary cleanup level in the analyzed soil samples.

3.4.2 2002 Petroleum-Contaminated Soil Excavation

According to the letter report by Foster Wheeler regarding the Rapid Response Soil Excavation at the Western Edge of the Parking Area, located at 2737 West Commodore Way, dated August 23, 2002, a release of hydraulic fluid from a truck occurred on the western edge of the parking area at the Bulk Terminal Property (Foster Wheeler 2002a). The release reportedly impacted surface soil. The actual date of the release is not identified in the letter; however, excavation activities were conducted on June 20, 2002. Foster Wheeler observed the excavation of an area approximately 60 feet long by 5 feet wide by up to 4 feet deep. Most of the excavation was 2 to 8 inches deep.

Six confirmation soil samples (062002-1 through 062002-4, 062002-8, and 062002-9) were collected from the base of the excavation, and three soil samples (062002-5 through 062002-7) were collected from the stockpile and analyzed for one or more of the following: TPH as Hydrocarbon Identification, DRPH, ORPH, GRPH, BTEX, or lead. Foster Wheeler did not provide a figure showing the sample locations; however, Foster Wheeler provided a list of the sample locations as follows:

- Sample 062002-1 was located south end of the excavation.
- Sample 062002-2 was located approximately 20 feet north of 062002-1.
- Sample 062002-3 was located approximately 20 feet north of 062002-2.
- Sample 062002-4 was located north end of the excavation.
- Sample 062002-5 was located west end of the stockpile.
- Sample 062002-6 was located center of the stockpile.
- Sample 062002-7 was located east end of the stockpile.
- Sample 062002-8 was located south end of the excavation, approximately 4 feet deep.
- Sample 062002-9 was located near 062002-2, approximately 4 feet deep.

The analytical results indicated concentrations of the analyzed compounds were below the laboratory reporting limits or the preliminary cleanup levels in the confirmation soil samples (Table 12). The stockpile soil samples had concentrations of GRPH, DRPH, and ORPH exceeding the preliminary cleanup levels (Table 12). A total of 13 cubic yards were excavated, stockpiled, and later transported to a permitted treatment, storage, and disposal (TSD) facility. The excavation was backfilled with clean, imported fill material to surface grade.

3.4.3 2002 Pentachlorophenol-Contaminated Soil Excavation

A Final Limited Soil Removal Report at the Former PCP/Diesel Mixing Area describes an interim action conducted in September 2002 in the vicinity of the Former PCP Mixing AST (Foster Wheeler 2002b; Figure 12). The purpose of the interim action was to remove PCP-contaminated soil from the Bulk Terminal Property.

During the soil excavation, monitoring well 01MW-14/SB56 was decommissioned by removal. The excavation area measured approximately 28 feet long by 65 feet wide by 6 to 18 inches deep. In addition, two areas within the main excavation area were excavated to approximately 5 feet wide by 5 feet deep and 5 feet long by 10 feet wide by 7 feet deep (Figure 12).

Nine confirmation soil samples (PEC-ES-01, PEC-ES-02, and PEC-SS-01 through PEC-SS-07) were collected from the bottom of the excavation and analyzed for PCP. The analytical results indicated concentrations of PCP in the soil samples were below the laboratory reporting limit or the preliminary cleanup level.

The excavation was backfilled with clean, imported fill material to surface grade. Approximately 70 cubic yards of excavated soil was stockpiled on plastic, bermed, and covered adjacent to the excavation. The soil was designated as an F-listed dangerous waste (Category F027), approximately 1 week after the excavation was completed, Sensor Environment Services, Ltd. was contracted to transport and treat the soil for disposal at their incineration facility in Swan Hills, Alberta, Canada.

3.4.4 2003 Dual-Phase Extraction Pilot Test

Foster Wheeler completed a Final Cleanup Action Plan, dated May 2003, which summarized the results of several previous phases of subsurface investigations and pilot testing conducted at the Bulk Terminal Property (Foster Wheeler 2003). The 2003 Foster Wheeler Final Cleanup Action Plan was approved by Ecology by an email dated August 4, 2003 (Ecology 2003). Foster Wheeler performed a dual-phase extraction (DPE) pilot test in 2002 to evaluate DPE as a potential remedial technology at the Bulk Terminal Property.

The DPE pilot test field program included installing three monitoring wells (01MW18 through 01MW20) in the vicinity of 01MW05, performing a bail down and recovery test on well 01MW05, conducting baseline monitoring, and conducting two DPE step tests. The first DPE step test was conducted on July 8, 2002, for approximately 15 hours at an average liquid flow rate of 40 gallons per hour and an average vapor flow rate of 26 cubic feet per minute. The total volume of petroleum hydrocarbons and water recovered during the first step test was approximately 1,000 gallons. The second DPE step test was conducted on July 9, 2002, for approximately 47 hours at an average liquid flow rate of 41 gallons per hour and an average vapor flow rate of 14 cubic feet per minute. The total volume of petroleum hydrocarbons and water recovered during the second step test was approximately 2,800 gallons. Based on the liquid and vapor flow rates, extracted volumes, and analytical results from the groundwater and vapor samples collected at monitoring well 01MW18 before the step tests (Tables 4-2 and 4-3 of the Final Cleanup Action Plan [Foster Wheeler 2003]), it is estimated that a total of 19 pounds of TPH was extracted from the subsurface during this pilot test. A detailed summary of the monitoring well installation, bail down and recovery test, baseline monitoring, and DPE step tests is provided in the Final Cleanup Action Plan (Foster Wheeler 2003).

4.0 REMEDIAL INVESTIGATION AND INTERIM ACTIONS

SoundEarth performed several phases of remedial investigation field work at the Bulk Terminal Property between April 2006 and February 2013, to evaluate the data gaps identified during previous investigations, to assess the extent of COPCs, and to provide sufficient information to support the evaluation of technically feasible cleanup action alternatives. In addition, SoundEarth conducted several

interim actions that included stormwater pretreatment system operations, a UST removal conducted in 2006, a PCP plume interim action performed in 2010, a hot spot soil removal conducted in 2011, and a full-scale soil removal action performed in 2012. A summary of the data gaps, remedial investigation, and interim action field activities and results are provided in the following sections. A digital copy of laboratory analytical reports is provided on a compact disk in Appendix F.

4.1 DATA GAPS

The previous investigations performed by others did not provide sufficient information to meet the requirements under MTCA for a remedial investigation. Specific data gaps included the following:

- The lateral and vertical extents of TPH in soil and groundwater at the Bulk Terminal Property and West Commodore Way ROW were not fully delineated.
- The vertical and lateral extent of PCP in soil at the Bulk Terminal Property was not fully delineated.
- The lateral extent of the elevated concentrations of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (dioxins and furans) in soil associated with the releases of PCP to the subsurface at the Bulk Terminal Property was not defined.

4.2 REMEDIAL INVESTIGATION FIELD PROGRAM

The remedial investigation field program was performed between April 2006 and February 2013, and was divided into the following seven work elements: utility reconnaissance, GPR survey, soil and reconnaissance groundwater sample collection, monitoring well installation and development, groundwater monitoring, aquifer testing, and LNAPL sampling. A summary of the scope of work completed for each work element, as well as the results of the remedial investigation activities, is provided below.

4.2.1 Utility Reconnaissance

Underground Detection Service, Inc. of Seattle, Washington, or Applied Professional Service, Inc. of North Bend, Washington, performed a private utility locate survey before each subsurface investigation and located utilities in the vicinity of the proposed boring locations. Northwest Utility Notification Center was also contacted to locate utilities within the West Commodore Way ROW and easements.

4.2.2 Ground-Penetrating Radar Survey

SoundEarth observed a GPR survey performed by Geo-Recon International Ltd. of Seattle, Washington on July 22, 2009 (Geo-Recon International Ltd. 2009; Appendix G). The survey was conducted in several areas on the Bulk Terminal Property and one area on the East Waterfront Property. The survey results for the East Waterfront Property are summarized under a separate cover for the property. The purpose of the survey was to investigate likely areas for the presence of potential historical USTs.

The survey was comprised of 80 lines covering 6,250 feet of traverse. Two USTs were identified on the Bulk Terminal Property during the survey. The two USTs (USTs #5 and #6) were identified east of the Headquarters Office Building on the Bulk Terminal Property. The two USTs located east of the Headquarters Office Building were adjacent to each other to the north/south. The northern UST (UST #5) had a diameter of approximately 38 inches and the top of the tank was

approximately 3 feet bgs. The southern UST (UST #6) was estimated to measure approximately 7.8 feet by 3.5 feet with a volume of 550 gallons. The top of the southern UST was also approximately 3 feet bgs. The contents of UST #5 and UST #6 are unknown; however, based on their close proximity to the building and their size, these USTs probably stored heating oil.

4.2.3 Soil and Reconnaissance Groundwater Sample Collection

This work element included the advancement of direct-push and hollow-stem auger borings between April 2006 and August 2012 and the collection of soil and reconnaissance groundwater samples from select direct-push borings at various depths. The boring locations are shown on Figures 6A and 6B. Cross sections showing subsurface soil profile characteristics, geological units encountered during the explorations, and concentrations of TPH are presented on Figures 13 through 17. Boring logs from the subsurface investigations are included in Appendix H. A boring log was not completed for boring B225; however, the soil profile is assumed to be similar to adjacent borings B213, B215, and B221.

Drilling services were provided by Cascade Drilling, Inc. of Woodinville, Washington. A SoundEarth geologist observed drilling activities and collected soil and/or reconnaissance groundwater samples for potential laboratory analysis at each boring location. Field activities were conducted in accordance with a site-specific Health and Safety Plan as required by Part 1910 of Title 29 of the Code of Federal Regulations and WAC 296-62. A summary of the locations of the borings and associated monitoring wells completed during the remedial investigation, and the rationale for their location, is provided below.

4.2.3.1 Soil Sample Collection

- One boring (B01) was advanced near the former East Barrel Incline on April 17, 2006. Boring B01 was located in West Commodore Way and was converted into monitoring well 01MW30. This well was screened in the shallow water-bearing zone to evaluate if a release of TPH had occurred to subsurface soil and groundwater from the historical operations of the former East Barrel Incline.
- A total of 20 borings (GP01 through GP20) were advanced in the Upper Tank Yard and Lower Tank Yard of the Bulk Terminal Property on August 31, September 1, and September 5, 2006. The locations of the borings were selected to evaluate the quality of soil and/or groundwater where the former ASTs 1 through 14 (GP01 through GP14) and Former PCP Mixing AST (GP15 through GP20) were located at the Bulk Terminal Property.
- A total of 11 borings (01MW31 through 01MW36 and B68 through B72 [01MW47 through 01MW51]) were advanced near the North Trunk Sewer located within West Commodore Way or along the north property line of the Bulk Terminal Property. The field program for the 11 borings was performed in three separate phases on July 6 and 7, November 29 and 30, and December 21 and 22, 2006. These borings were converted into monitoring wells 01MW31 through 01MW36 and 01MW47 through 01MW51 with the exception of boring B68A. The wells were screened within the shallow water-bearing zone to assess the quality of soil and groundwater for TPH in West Commodore Way and were in close proximity to the North Trunk Sewer.

- Seven borings (SB58 through SB64) were advanced and converted into monitoring wells 01MW37 through 01MW43, respectively, on September 7 and 8, 2006. These boring and well locations were screened in the shallow water-bearing zone and selected to assess the quality of soil and groundwater in the vicinity of former ASTs 1 through 14 and Former Overhead Fuel Loading Racks at the Bulk Terminal Property.
- One boring (B82) was advanced and converted into monitoring well 01MW59 on November 17, 2008. Well 01MW59 was screened in the shallow water-bearing zone. The location of the monitoring well was selected to further assess the lateral extent of concentrations of trichloroethene (TCE) in groundwater at the ASKO Hydraulic Property, near the western boundary of the Bulk Terminal Property.
- Four borings (B117 through B120) were advanced at the Bulk Terminal Property on July 23 and 24, 2009. The four borings were converted into monitoring wells 01MW66, 01MW67, 01MW68, and 01MW69. In addition, monitoring wells 01MW67 and 01MW69 were installed at a 45-degree angle from the ground surface, while wells 01MW66 and 01MW68 were installed at the industry standard 90-degree angle to the ground surface. The four wells were screened in the shallow water-bearing zone. The purpose of these borings and associated wells was to define the crossgradient and downgradient extent of concentrations of PCP in groundwater at the Site (PCP dissolved-phase plume [PCP plume]).
- Injection wells 01IW01 through 01IW08 were advanced and installed within the PCP plume at the Bulk Terminal Property on July 31, 2009, and August 26, 2009. The purpose of the injection wells was to obtain design parameter data for an injection system.
- Ten borings (B121 through B130) were advanced throughout the Bulk Terminal Property on December 28 and 29, 2009. Borings B121, B122, B123, and B128 were advanced to assess the unsaturated soil conditions above the PCP plume for the presence of PCP and potential associated compounds above the applicable preliminary MTCA cleanup levels. The remaining borings were advanced to further assess the lateral and vertical distribution of TPH and BTEX in soil.
- Borings B138 through B166 were advanced on March 2, 2010, in a grid pattern across the west and northwest portions of the Lower Tank Yard at the Bulk Terminal Property. The purpose of these borings was to further assess the lateral and vertical extent of dioxins and furans associated with the historical release of PCP to the subsurface in the vicinity of the Former PCP Mixing AST.
- Borings B167 through B170 were advanced on March 10, 2010, at the Bulk Terminal Property and converted into monitoring wells 01MW72, 01MW73, 01MW74, and 01MW75. The purpose of these borings/wells was to define the upgradient extent of the LNAPL plume.
- Borings B176 through B178, B180, and B181 were advanced on March 25, 2011, at the Bulk Terminal Property to evaluate concentrations of TPH in soil around the area with concentrations of PCP and associated dioxins and furans in unsaturated soil.

- Borings F8IW01, G9IW01, J3IW01, J5IW01, J12, K4IW01, K5IW01, K6IW01, L5IW01, M5IW01, N7IW01, N9IW01, O8IW01, P6IW01, Q7IW01, and Q9IW01 were advanced between May 19, 2010, and June 21, 2010. These boring locations were also converted into wells to be used as part of an interim action in 2010. The objective of these borings was to collect additional soil quality data to further assess the concentrations of PCP and associated dioxins and furans in soil.
- Borings B183 through B184 were advanced on April 14, 2011, to laterally delineate the concentrations of PCP in soil.
- Borings B192/01MW84 and B196/01MW88 were advanced in the northwest portion and northeast portion of the West Commodore Way ROW associated with the Bulk Terminal Property to monitor the downgradient groundwater quality in the shallow water-bearing zone. These borings were advanced on April 19 and 21, 2011. In addition, borings B194/01MW86 and B195/01MW87 were advanced directly south of the North Trunk Sewer in the West Commodore Way ROW associated with the Bulk Terminal Property to monitor downgradient groundwater quality in the shallow water-bearing zone and to define the northern edge of the LNAPL plume on April 20, 2011.
- Borings B198 and B199 were advanced on December 29, 2011, at the Bulk Terminal Property and converted into monitoring wells 01MW90 and 01MW91. The purpose of these wells was to define the upgradient extent of the LNAPL plume.

The purpose of the borings advanced was to define the lateral and vertical extent of concentrations of PCP and/or associated dioxins and furans from suspected releases of PCP and/or PCP mixture to the surface and subsurface. The analytical results for soil samples collected from these borings was used to demonstrate compliance for soil at the Site for the 2012 interim action summarized below:

- Boring B200 was advanced on March 28, 2012, to the south of excavation soil sample P8-EX01-SSW01-02.5 to delineate TEQ concentrations of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (2,3,7,8-TCDD) in soil at 46.5 feet elevation above mean sea level (msl).
- Boring B201 was advanced on March 28, 2012, to the south of J12 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at a depth of 46.5 feet elevation above msl.
- Eight borings (B202 through B209) were advanced on April 5 and 6, 2012, around borings GP17, GP20, and B122 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations above msl ranging between 45.7 and 43.7 feet and concentrations of PCP in soil between 41.7 and 33 feet above msl.
- Six borings (B210 through B212 and B222 through B224) were advanced on March 29, 2012, around boring B139 and north of borings B123, B142, and B143 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at depths ranging from 33.7 to 32 feet elevation above msl.
- Two borings (B213 and B221) were also advanced on March 29 and April 6, 2012, west and south of J5 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at depths ranging from 46.5 to 33.7 feet elevation above msl.

- Five borings (B214, B215, B217, B218, and B225) were advanced between March 30 and April 11, 2012, near boring B183 and north of boring B213 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations above mean sea level ranging from 44.1 to 37 feet, and concentrations of PCP in soil at depths of 45 and 37 feet.
- One boring (B216) was advanced on March 30, 2012, to the north of B183 to delineate concentrations of PCP in soil at depths of 45 and 37 feet in elevation above msl.
- Boring B234 was advanced on May 11, 2012, to the southeast of B201 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at 44.5 feet in elevation above msl.
- Four borings (B235 through B238) were advanced between May 11 and May 14, 2012, near boring B216 to delineate TEQ concentrations of 2,3,7,8-TCDD and concentrations of PCP in soil at 45.08 to 42.09 feet elevation above msl.
- Four borings (B239 through B242) were advanced between July 9, 2012 and July 11, 2012, to the southeast (B240), northeast (B241), and southwest (B239 and B242) of B234 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.
- Boring B243 was advanced on July 11, 2012, to the southeast of B242, to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at 45.7 feet elevation above msl.
- Three borings (B245 through B247) were advanced on July 11, 2012, to the southeast (B245), east (B246), and north (B247) of B241 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.
- Five borings (B248 and B250 through B253) were advanced between July 13 and July 16, 2012, to the northeast (B248 and B253), north (B250), northwest (B251), and east (B252), of B238 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.
- Three borings (B254 through B256) were advanced on July 16, 2012, to the west (B254), northwest (B255), and north (B256) of B250 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.
- Boring B257 was advanced on July 16, 2012, to the west of B251, to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.
- Boring B262 was advanced on August 22, 2012, to the west of B251 to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.
- Boring B263 was advanced on August 29, 2012, to the southeast of B242, to delineate TEQ concentrations of 2,3,7,8-TCDD in soil at elevations greater than 45 feet above msl.

Direct-push borings were continually sampled from the ground surface to the maximum depth explored, typically using a 4-foot probe rod driven with a 140-pound-per-square-inch hydraulic hammer powered by pressurized hydraulic fluid. The sampler was lined with disposable polyvinyl chloride (PVC) or Teflon sleeves that were removed and opened to reveal the sample after each sample interval driven. Hollow-stem auger borings were sampled at varying intervals

ranging from continuous to every 15 feet to the maximum depths explored using a California split-spoon or Dames and Moore sampler advanced through the hollow-stem augers. Blow counts and sample recovery percentages were logged at each sample interval. Upon completion, direct-push borings were backfilled with bentonite and completed with an appropriate surface seal.

Soil samples were described in accordance with the Unified Soil Classification System (USCS) and screened in the field for potential evidence of contamination by using visual observations and notations of odor and by conducting headspace analysis using a photoionization detector (PID) to detect the presence of volatile organic vapors. Headspace analysis was conducted by placing soil from each sample interval into a sealable plastic bag and allowing the sample to warm for at least 30 seconds. The probe of the PID was then inserted into the bag, and the highest reading obtained over an approximately 30-second interval was recorded. The USCS symbol, visual and olfactory notations for the samples, and PID readings were recorded on boring log forms. The boring log forms are provided in Appendix H.

Soil and reconnaissance groundwater samples were placed directly into laboratory-prepared sample containers. The containers were placed in an iced cooler and transported for laboratory analysis to Friedman & Bruya, Inc. of Seattle, Washington; Libby Environmental Incorporated of Olympia, Washington; TestAmerica Laboratories, Inc., formerly North Creek Analytical, of Bothell, Washington; or Columbia Analytical Services of Houston, Texas, under standard chain-of-custody protocols. Upon completion, direct-push borings were backfilled with bentonite and completed with an appropriate surface seal to match surface conditions, if possible (e.g., asphalt or concrete surfaces). Generated soil cuttings and wastewater were placed into appropriately labeled 35-gallon or 55-gallon steel drums and transported to the designated staging area at the Bulk Terminal Property pending proper disposal to a permitted TSD facility.

Laboratory analyses for each soil and reconnaissance groundwater sample were selected, based on the boring locations, suspected COPCs, and source areas associated historical operations within the Seattle Terminal Properties. The soil and reconnaissance groundwater samples were submitted for laboratory analysis for one or more of the following: DRPH; ORPH; GRPH; BTEX; PCP and associated dioxins and furans; volatile organic compounds (VOC), including 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), MTBE, ethanol, tetrachloroethene (PCE), TCE, cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-dichloroethene (1,1-DCE), vinyl chloride, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, acetone, isopropylbenzene, n-butylbenzene, n-propylbenzene, p-isopropyltoluene, sec-butylbenzene, tert-butylbenzene, 2-butanone, and naphthalene; and metals including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

4.2.3.2 Reconnaissance Groundwater Sample Collection

A total of 13 reconnaissance groundwater samples were collected from borings advanced at the Bulk Terminal Property in August and September 2006. The objective of the reconnaissance groundwater samples collected from borings GP01, GP03, GP05, GP07, GP09, GP11, and GP14 was to assess groundwater quality in the former Upper and Lower Tank Yards where the 14 ASTs were located. The reconnaissance groundwater samples from borings GP15 through GP20 were collected to assess the groundwater quality in the vicinity of the Former PCP Mixing AST and associated 2002 PCP excavation area.

Reconnaissance groundwater samples were typically collected by driving a 2-inch-diameter stainless steel casing to 1 to 3 feet below the depth of the first encountered groundwater. The outer casing was then partially withdrawn, exposing a discrete portion of the water-bearing unit. Groundwater was purged through 0.25-inch-diameter tubing inserted down the 2-inch-diameter casing using a peristaltic pump until the groundwater no longer appeared turbid or a minimum of 2 gallons were removed. Following the temporary well purging, SoundEarth collected the reconnaissance groundwater samples from the following intervals in the borings. Groundwater was encountered between 5.5 to 12 feet bgs during reconnaissance groundwater sampling.

- Borings GP03 and GP07 were screened from 7 to 12 feet bgs, and groundwater was encountered at approximately 5.5 feet bgs.
- Borings GP05, GP17, and GP20 were screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 8 feet bgs.
- Borings GP09 and GP11 were screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 12 feet bgs.
- Boring GP14 was screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 8.5 feet bgs.
- Boring GP15 was screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 10 feet bgs.
- Boring GP16 was screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 9.5 feet bgs.
- Boring GP18 was screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 9 feet bgs.
- Boring GP19 was screened from 10 to 15 feet bgs, and groundwater was encountered at approximately 7 feet bgs.

4.2.4 Soil and Reconnaissance Groundwater Sampling Results

A summary of the soil profile observed from soil samples collected from borings advanced during the remedial investigation field program and the soil and reconnaissance groundwater sample analytical data is provided below. Analytical results for soil samples are presented in Tables 2 through 5, and Tables 16 and 17. Analytical results for reconnaissance groundwater samples are presented in Tables 6 and 18. The analytical results for COPCs in soil are illustrated on Figures 7A, 7B, 8A, 8B, 9A through 9C, 10A, and 10B. Laboratory analytical reports for the soil and reconnaissance groundwater samples collected during the remedial investigation are included in Appendix F.

4.2.4.1 Soil Profile

The soil profile observed in borings advanced at the Bulk Terminal Property and West Commodore Way ROW by SoundEarth and others consisted of fill material from ground surface to depths ranging from approximately 6 to 25 feet bgs, underlain by native deposits. The fill material and native deposits observed included fine- to coarse-grained soil layers comprised of varying amounts of silt and clay, silty sand, sand, and gravel.

There were two distinct soil layers consisting of fill material located throughout the Site (Figures 13 through 17). The uppermost soil layer consists of fine- to coarse-grained soils that include very loose to very dense silty sand, sand, and gravel from ground surface to up to 6 feet bgs. These soil types exhibit characteristics of Hf geologic unit. Underlying the Hf geologic unit is the Hdf geologic unit that consists of very soft to medium stiff, fine-grained sand, silt, and clay, with scattered organic particles from 3 to 23 feet bgs.

Underlying the Hf and Hdf geologic units appear to be Qpf deposits. The Qpf geologic unit consists of dense to hard, interbedded gravel, sand, and silt. These deposits can be further subdivided into Qpff and Qpfc deposits. Deposits observed at the ASKO Hydraulic Property are characterized as Qpff deposits, which consist of silt and clay with sandy interbeds. The Qpff geologic unit was encountered through the maximum depth explored of 99 feet bgs at the ASKO Hydraulic Property.

4.2.4.2 Soil Sample Results

This section provides the analytical results for soil samples collected from the Site during the remedial investigation. Analytical results for soil samples collected from borings are not listed below if the COPCs were not detected above laboratory practical quantification limits (PQLs) or preliminary cleanup levels. Analytical results for the soil samples indicated the following:

- Concentrations of DRPH exceeded the preliminary cleanup level in soil samples collected from borings GP06, GP10, 01MW33, B68 (01MW47), B70 (01MW49), B82 (01MW59), B118 (01MW67), B119 (01MW68), B123, B127, B128, B129, B152, B156, B166, B168 (01MW73), B169 (01MW74), B176, B184, B214, B216, B217, and B221 at depths ranging from 0.5 to 20 feet bgs (Figures 7A and 7B).
- Concentrations of ORPH exceeded the preliminary cleanup level in soil samples collected from borings GP06, B118 (01MW67), B122, and B221 at depths ranging from 0.5 to 8 feet bgs (Figures 7A and 7B).

Concentrations of GRPH exceeded the preliminary cleanup level in soil samples collected from borings SB-59 (01MW38), GP06, GP08, GP10, B01 (01MW30), 01MW33, 01MW35, 01MW47, 01MW49, B82 (01MW59), B118 (01MW67), B119 (01MW68), B122, B123, B127, B128, B129, B152, B156, B169 (01MW74), B176, B180, B181, B183, B184, B204, B207, B214, B216, B217, B221, and B224 at depths ranging from 1 to 20 feet bgs (Figures 8A and 8B).

- Concentrations of benzene exceeded the preliminary cleanup level in soil samples collected from borings 01MW31, 01MW33, SB-59 (01MW38), GP08, GP10, GP14, B68 (01MW47), B69 (01MW48), B119 (01MW68), B123, B126, B128, B152, B161, B167 (01MW72), B168 (01MW73), B169 (01MW74), B180, B181, B207, B214, B216, B217, and B221 at depths ranging from 0.5 to 28 feet bgs (Figures 8A and 8B).
- Concentrations of toluene exceeded the preliminary cleanup level in soil samples collected from borings GP10, B119 (01MW68), B128, B169 (01MW74), B181, B214, B216, and B217 at depths ranging from 2.5 to 10.5 feet bgs.
- Concentrations of ethylbenzene exceeded the preliminary cleanup level in soil samples collected from borings SB-59 (01MW38), GP10, B119 (01MW68), B123,

B128, B156, B169 (01MW74), B180, B181, B214, B216, B217, and B221 at depths ranging from 2.5 to 10.5 feet bgs.

- Concentrations of total xylenes exceeded the preliminary cleanup level in soil samples collected from borings SB-59 (01MW38), GP10, B119 (01MW68), B123, B127, B128, B156, B169 (01MW74), B180, B181, B214, B216, B217, and B221 at depths ranging from 0.5 to 10.5 feet bgs.
- Concentrations of PCP exceeded the preliminary cleanup level in soil samples collected from borings GP17, GP20, B122, B151, B216 at elevations ranging from 37.9 to 46.5 feet above msl (Figures 9B, 9C, and 18).
- TEQ concentrations of 2,3,7,8-TCDD exceeded the preliminary cleanup level in soil samples collected from borings B121, B122, B123, B139, B142, B143, B144, B145, B146, B149, B151, B156, B165, B166, B183, B201, B213, B216, B221, B234, B237, B238, B240, B241, B242, B243, B251, B263, J5IW01, J12, K5IW01, and O8IW01 at elevations ranging from 46.7 to 38.2 feet in elevation above msl (Figure 19).
- Concentrations of MTBE, EDB, EDC, ethanol, PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, vinyl chloride, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, acetone, isopropylbenzene, n-butylbenzene, n-propylbenzene, p-isopropyltoluene, sec-butylbenzene, tert-butylbenzene, 2-butanone, and metals including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver were not detected above laboratory PQLs or preliminary cleanup levels in the analyzed soil samples.
- Soil samples from borings 01MW32, 01MW34, 01MW36, SB-58 (01MW37), SB-60 (01MW39), SB-61 (01MW40), SB-62 (01MW41), SB-63 (01MW42), SB-64 (01MW43), GP01, GP02, GP03, GP04, GP05, GP07, GP09, GP11, GP12, GP13, GP15, GP16, GP18, GP19, B71 (01MW50), B72 (01MW51), B117 (01MW66), B120 (01MW69), B124, B125, B130, B138, B140, B141, B147, B148, B150, B170 (01MW75), B177, B178, B179, B192 (01MW84), B194 (01MW86), B195 (01MW87), B196 (01MW88), B198 (01MW90), B199 (01MW91), B200, B202, B203, B205, B206, B208, B209, B210, B211, B212, B215, B218, B222, B223, B225, B235, B236, B250, B252, B253, B254, B257, F8IW01, G9IW01, J3IW01, K4IW01, K6IW01, L5IW01, M5IW01, N7IW01, N9IW01, P6IW01, Q7IW01, and Q9IW01 did not have detectable concentrations of the analyzed COPCs in exceedance of preliminary cleanup levels.

4.2.4.3 Reconnaissance Groundwater Sample Results

During drilling activities, groundwater was encountered at depths ranging from approximately 5.5 to 14 feet bgs. The analytical results for reconnaissance groundwater samples collected from temporary wells were not reported below if COPCs were not detected above laboratory PQLs or preliminary cleanup levels. Analytical results for reconnaissance groundwater samples collected within the Bulk Terminal Property indicated the following:

- Concentrations of DRPH exceeded the preliminary cleanup level in the reconnaissance groundwater samples collected from borings GP03, GP05, GP07, GP11, and GP14.
- Concentrations of ORPH and GRPH exceeded the preliminary cleanup levels in the reconnaissance groundwater sample collected from boring GP14.

- Concentrations of PCP exceeded the preliminary cleanup level in the reconnaissance groundwater samples collected from borings GP07, GP15, GP16, GP17, GP18, GP19, and GP20.
- Concentrations of toluene, ethylbenzene, total xylenes, MTBE, EDB, EDC, and chlorinated VOCs (including PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, vinyl chloride, acetone, isopropylbenzene, and naphthalene) were below the laboratory reporting limits or preliminary cleanup levels in the analyzed reconnaissance groundwater samples.

4.2.5 Well Installation and Development

A total of 28 monitoring wells were installed and developed as part of the remedial investigation field program at the Bulk Terminal Property and downgradient West Commodore Way ROW between April 2006 and January 2012. The monitoring wells included 01MW30 through 01MW43, 01MW47 through 01MW51, 01MW59, 01MW66 through 01MW69, 01MW72 through 01MW75, 01MW84, 01MW86 through 01MW88, 01MW90, and 01MW91 (Figures 6A and 6B).

As part of the 2010 interim action, SoundEarth observed the installation of 144 injection wells. The injection wells included 01IW01 through 01IW03, 01IW05 through 01IW08, A3IW01 through A6IW01, B1IW01 through B4IW01, B6IW01, B7IW01, C1IW01 through C7IW01, D1IW01 through D8IW01, E1IW01 through E9IW01, F1IW01 through F10IW01, G1IW01 through G10IW01, H1IW01 through H10IW01, I1IW01 through I11IW01, J1IW01 through J11IW01, K1IW01 through K11IW01, L2IW01 through L12IW01, M2IW01, M3IW01, M5IW01 through M12IW01, N3IW01 through N6IW01, N7IW01/01IW04, N8IW01 through N12IW01, O5IW01 through O12IW01, P6IW01 through P12IW01, and Q7IW01 through Q10IW01 (Figure 20). Several of the injection wells have been incorporated in the compliance groundwater monitoring program.

A total of 16 monitoring wells were installed and developed as part of the remedial investigation in the West Commodore Way ROW associated with the Bulk Terminal Property between April 2006 and April 2011. These monitoring wells include 01MW30 through 01MW36, 01MW47 through 01MW51, 01MW84, 01MW86, 01MW87, and 01MW88 (Figure 6A).

Wells were constructed inside boreholes drilled with 8.25-inch-diameter hollow-stem augers. The well annulus above the screen interval was backfilled with bentonite chips. Well construction material for 2-inch-diameter wells consisted of 2-inch-diameter Schedule 40 PVC with 0.010- or 0.020-inch slotted screens. The bottom and top of each of the wells were fitted with a threaded PVC bottom cap and a locking compression fit well cap. A filter pack consisting of 2/12 silica sand was placed around each well screen interval. Continuous depth measurements were taken during placement of the filter pack. Bentonite chips, 3/8-inch in diameter, were hydrated and placed above the filter pack up to approximately 2 feet bgs. Monitoring wells were completed at the surface with a flush-mounted, traffic-rated well box set in concrete or completed aboveground level. Aboveground completion consisted of PVC casing with a hinged, locking cap. A metal bollard filled with concrete was positioned adjacent to the casing to provide additional protection. A well variance was granted by Ecology in accordance with WAC 173-160-106 to allow for construction of injection wells (Appendix I).

Monitoring wells 01MW67 and 01MW69 were installed at a 45-degree angle relative to the ground surface beneath the existing TOC Headquarters Office Building. The approximate screen

intervals for the monitoring wells are provided in Table 7. Boring logs detailing well construction are provided in Appendix I.

The monitoring wells were developed with the use of a submersible pump or dedicated bailer. Monitoring well development consisted of surging and purging the wells until a minimum of five submerged well volumes was removed. All non-dedicated field sampling equipment was cleaned and decontaminated between uses and before leaving the Bulk Terminal Property or West Commodore Way ROW. Wastewater generated during well development was placed into the groundwater pretreatment system located on the Bulk Terminal Property where it was treated and discharged to the sanitary sewer system in accordance with the King County Industrial Waste Discharge Permit Number 7689.

The monitoring well locations and elevations were surveyed by Axis Survey and Mapping Consulting Engineers of Kirkland, Washington. The monitoring well top of casings and top of monument were surveyed to an accuracy of 0.01 to 0.02 foot, using a NAVD88 benchmark (Table 7). Building footprints and additional features were also surveyed.

4.2.6 Groundwater Monitoring

Groundwater monitoring and sampling events were performed quarterly or semiannually from 2006 through 2012. Additional groundwater monitoring and sampling events consisted of a specific set of monitoring wells that were selected to further refine the extent of specific COPCs in groundwater at the Site. Each monitoring event consisted of opening the selected set of monitoring wells upon arrival and permitting fluid levels to equilibrate with atmospheric pressure for a minimum of 30 minutes before obtaining depth-to-groundwater and/or depth-to-LNAPL measurements. Fluid levels were measured to an accuracy of 0.01 feet, relative to the top of well casing, using electronic depth to water meters or oil/water interface probes.

Groundwater samples were collected in accordance with SoundEarth's *Standard Operating Procedure 007–Groundwater Sampling* and a site-specific work plan summary prepared before the sampling event. Purging and sampling of each monitoring well was performed using a peristaltic pump and dedicated polyethylene tubing at flow rates ranging from approximately 15 to 215 milliliters per minute. The tubing intake was generally placed at 3 feet below the water table in each monitoring well, or in the middle of the screen interval if the screen was submerged or there was less than 3 feet of water column present.

During purging, water quality was monitored using an YSI 556 water quality system, or equivalent water quality meter, equipped with a flow-through cell. A separate turbidimeter was used for turbidity readings. Water quality parameters monitored and recorded during purging included temperature, pH, specific conductance, dissolved oxygen, turbidity, and ORP. Following purging, groundwater samples were collected from the pump outlet tubing located upstream of the flow-through cell, and placed directly into laboratory-prepared sample containers. Each container was labeled with a unique sample identification number, placed on ice in a cooler, and transported for laboratory analysis under standard chain-of-custody protocols.

Select groundwater samples were collected through dedicated conduits installed in wells that contained measureable LNAPL. Wells with dedicated conduits are identified as LCG on Table 8. The conduits were installed to assess the groundwater quality beneath the LNAPL plume. The conduit-containing wells were sampled by threading sample tubing through the 0.75-inch-diameter conduit and into groundwater, bypassing the LNAPL. An oil/water interface probe was

inserted outside of the conduit to collect drawdown readings during purging. Water quality parameters were not collected during purging from wells containing PVC sampling conduits due to the elevated concentrations of TPH in the purged groundwater. Approximately 1.5 gallons of groundwater was purged from each conduit-containing well before sample collection. Following purging, groundwater samples were collected from the pump outlet tubing and placed directly into laboratory-prepared sample containers. Each container was labeled with a unique sample identification number, placed on ice in a cooler, and transported for laboratory analysis under standard chain-of-custody protocols.

Remedial investigation groundwater monitoring samples were submitted for laboratory analysis for one or more of the following: DRPH; ORPH; GRPH; BTEX; MTBE; EDB; EDC; ethanol; PCP; VOCs including PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, and vinyl chloride; selected metals, including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver; selected PAHs; and volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH).

In addition, selected groundwater and confirmation samples were analyzed for the following natural attenuation parameters and water quality parameters: nitrate, nitrite, total manganese, total iron, ferrous iron, ferric iron, sulfate, methane, ethane, ethane, sulfide, total Kjeldahl nitrogen, total phosphorous, alkalinity, and hardness. Select groundwater samples were also field analyzed for ferric iron, total iron, and manganese, and sulfate with the use of a Hach Test Kit. Additional parameters were analyzed as indicators of the subsurface environment and included the following: ORP, specific conductivity, turbidity, temperature, and pH. The natural attenuation parameter results are summarized in Table 19, the geochemical and water quality parameters are summarized in Table 20. An assessment of the baseline ORP conditions in the Bulk Terminal Property is provided below.

Purge water generated during sampling was placed into the groundwater pretreatment system located on the Bulk Terminal Property where it was treated and discharged to the sanitary sewer system in accordance with the King County Industrial Waste Discharge Permit Number 7689. Groundwater Sample locations are shown on Figures 19 and 21.

Groundwater monitoring and sampling events for the remedial investigation at the Site were conducted in June and December 2006; November 2008; January, April, July, and October 2009; January, April, July, September, and November 2010; January, April, and December 2011; April and October 2012; and January 2013. The following wells were typically included as part of the groundwater monitoring program: 01MW01, 01MW02, 01MW04, 01MW06, 01MW11, 01MW12, 01MW13, 01MW17, 01MW19, 01MW21/N7IW01, 01MW22/J7IW01, 01MW23, 01MW26, 01MW27, 01MW30, 01MW32, 01MW34, 01MW36, 01MW37, 01MW40, 01MW42, 01MW50, 01MW59, 01MW66, 01MW67, 01MW69, 01MW74, 01MW75, 01MW84, 01MW86, 01MW87, and 01MW88. Compliance monitoring and sampling events for the 2010 interim action completed at the Bulk Terminal Property were conducted in July, September, and November 2010; January, April, and November 2011; April and July 2012; and January 2013. In general, wells 01MW01, 01MW04, 01MW27, 01MW67, 01MW69, 01MW74, 01MW87, C3IW01, L2IW01, M5IW01, N7IW01, N10IW01, O5IW01/O6IW01, and Q9IW01 were sampled to assess concentrations of PCP in groundwater within the 2010 PCP treatment area. The July and September 2010 and January 2011 groundwater sampling events included VPH/EPH analysis of groundwater samples collected from wells 01MW23, 01MW29, 01MW41, 01MW73, C3IW01, or G7IW01 to assess the composition of dissolved-phase TPH in groundwater.

Wells not included in regular sampling events conducted within West Commodore Way include 01MW03, 01MW09, 01MW10, 01MW16, 01MW31, 01MW33, 01MW35, 01MW47 through 01MW49, and 01MW51. Wells 01MW31 and 01MW35 did not contain sufficient groundwater to collect samples from except for well 01MW35, which was sampled one time in December 2006. Groundwater samples collected from wells 01MW03, 01MW09, 01MW10, 01MW16, 01MW33, 01MW47, 01MW48, 01MW49, and 01MW51 contained concentrations of the COPCs or LNAPL for multiple sampling events; based on these individual analytical trends, sampling was temporarily discontinued for these wells. Upgradient wells 01MW02, 01MW04, 01MW19, 01MW34, 01MW36, 01MW86, and 01MW87, crossgradient wells 01MW30 and 01MW88, and downgradient wells 01MW32, 01MW50, and 01MW84, relative to the above listed well set, were sampled on a regular basis so groundwater quality in the area could be evaluated even though all the wells were not included in the groundwater sampling events. Wells not included in regular sampling events conducted at the Site include 01MW05, 01MW08, 01MW18, 01MW20, 01MW24, 01MW25, 01MW28, 01MW29, 01MW38, 01MW39, 01MW41, 01MW43, 01MW68, 01MW72, 01MW73, 01MW90, and 01MW91. Wells 01MW03, 01MW38, 01MW39, 01MW90, and 01MW91 did not contain detectable concentrations of the COPCs; therefore, sampling was discontinued since upgradient wells 01MW13, 01MW17, and 01MW59, crossgradient wells 01MW19 and 01MW37, and downgradient wells 01MW30, 01MW40, and 01MW74 continued to be sampled. Groundwater samples collected from wells 01MW05, 01MW18, 01MW20, 01MW24, 01MW25, 01MW28, 01MW29, 01MW41, 01MW43, 01MW68, 01MW72, and 01MW73 contained concentrations of the COPCs or LNAPL for multiple sampling events demonstrating a consistent trend. Based on the steady trend observed in these wells, sampling was discontinued.

4.2.7 Groundwater Results

Groundwater monitoring and LNAPL analytical results are presented on Tables 8 through 11, and Tables 21 and 22. A summary of the depth-to-groundwater, depth-to-LNAPL, and groundwater elevations for the monitoring wells on the Site are presented in Table 7. Groundwater monitoring results from October 2012 are also presented in Figures 22 through 24.

The shallow water-bearing zone groundwater elevation contours from the October 2012 monitoring event for the Seattle Terminal Properties indicate a general groundwater flow direction to the north-northwest toward Salmon Bay, which is consistent with previous groundwater monitoring events (Figure 21). The average hydraulic gradient of the shallow water-bearing zone at the Seattle Terminal Properties is 0.07 feet per foot. A rose diagram depicting historical groundwater flow direction and average hydraulic gradient of the shallow water-bearing zone from groundwater monitoring events conducted between June 2006 and October 2012 is shown on Figure 25. The average historical gradient of the shallow water-bearing zone calculated from the rose diagram is 0.03 feet per foot. The intermediate water-bearing zone groundwater elevation contours from the October 2012 monitoring event for the Seattle Terminal Properties indicate a general groundwater flow direction to the northwest (Figure 26). The hydraulic gradient of the intermediate-water bearing zone at the Seattle Terminal Properties is approximately 0.01 feet per foot.

The analytical results for groundwater samples collected from wells at the Site are summarized below by water-bearing zone. Analytical results for groundwater samples collected from wells were not reported below if a specific COPC was not detected above laboratory PQLs or

preliminary cleanup levels. Analytical results for the groundwater samples collected during the remedial investigation indicated the following:

4.2.7.1 Shallow Water-Bearing Zone

- Concentrations of DRPH exceeding the preliminary cleanup level were detected in the groundwater samples collected from wells 01MW01, 01MW04, 01MW05, 01MW06, 01MW08, 01MW12, 01MW13, 01MW17, 01MW18 through 01MW24, 01MW26 through 01MW28, 01MW36, 01MW37, 01MW38, 01MW40 through 01MW43, 01MW47, 01MW49, 01MW50, 01MW59, 01MW66 through 01MW69, 01MW72 through 01MW75, 01MW84, 01MW86, B3IW01, C3IW01, E9IW01, F4IW01, G10IW01, J10IW01, M5IW01, N7IW01, N10IW01, Q9IW01, and IW03 during one or more of the groundwater monitoring events.
- Concentrations of ORPH exceeding the preliminary cleanup level were detected in the groundwater samples collected from wells 01MW05, 01MW12, 01MW13, 01MW19, 01MW21, 01MW22, 01MW23, 01MW25 through 01MW27, 01MW29, 01MW40, 01MW41, 01MW43, 01MW68, 01MW72, 01MW74, 01MW75, 01MW86 B3IW01, C3IW01, E9IW01, N10IW01, Q9IW01, and IW03 during one or more of the groundwater monitoring events.
- Concentrations of GRPH exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW04, 01MW05, 01MW12, 01MW18 through 01MW29, 01MW40, 01MW41, 01MW43, 01MW47, 01MW49, 01MW68, 01MW69, 01MW72 through 01MW74, 01MW84, 01MW86, A6IW01, B3IW01, C3IW01, E9IW01, F4IW01, and N10IW01 during one or more of the groundwater monitoring events.
- Concentrations of benzene exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW01, 01MW04, 01MW12, 01MW18 through 01MW20, 01MW22 through 01MW29, 01MW41 through 01MW43, 01MW47, 01MW49, 01MW66, 01MW68, 01MW69, 01MW72 through 01MW75, 01MW84, 01MW86, A6IW01, B3IW01, C3IW01, E9IW01, F4IW01, G7IW01, J10IW01, K3IW01, N10IW01, and Q9IW01 during one or more of the groundwater monitoring events.
- Concentrations of ethylbenzene exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW04, 01MW18, 01MW19, 01MW20, 01MW23, 01MW29, 01MW41, 01MW47, 01MW73, C3IW01, and G7IW01 during one or more of the groundwater monitoring events.
- Concentrations of total xylenes exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW04, 01MW05, 01MW18, 01MW19, 01MW20, 01MW23, 01MW26, 01MW28, 01MW29, 01MW41, 01MW47, 01MW68, 01MW73, C3IW01, and G7IW01 during one or more of the groundwater monitoring events.
- Concentrations of EDC exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW12, 01MW27, 01MW36, 01MW41, 01MW42, and 01MW36 during one or more of the groundwater monitoring events.

- Concentrations of PCP exceeding the preliminary cleanup level were historically detected in the groundwater samples collected from wells 01MW01, 01MW12, 01MW13, 01MW21, 01MW22, 01MW23, 01MW24, 01MW25, 01MW26, 01MW27, 01MW28, 01MW29, 01MW37, 01MW41, 01MW43, 01MW66, 01MW69, 01MW74, A6IW01, C3IW01, F4IW01, J7IW01, J10IW01, K3IW01, L2IW01, M5IW01, O5IW01, 01MW03, 01MW10, and 01MW16 during one or more of the groundwater monitoring events.
- A concentration of TCE exceeding the preliminary cleanup level was detected in the groundwater sample collected from well 01MW20 during the December 2006 groundwater monitoring event.
- A concentration of vinyl chloride exceeding the preliminary cleanup level was detected in the groundwater sample collected from well 01MW06 during the April 2010 groundwater monitoring event.
- Concentrations of total and/or dissolved arsenic exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW39, 01MW41 (total only), 01MW42, and 01MW43 during one of the groundwater monitoring events.
- Concentrations of lead exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW02, 01MW03, and 01MW04 during one of the groundwater monitoring events. However, recent results demonstrate compliance for lead in groundwater.
- Concentrations of naphthalene exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW19, 01MW23, 01MW29, 01MW41, 01MW73, C3IW01, G7IW01, and 01MW47 during one or more of the groundwater monitoring events.
- VPH and EPH results show that aliphatics are much more prevalent in groundwater than aromatics indicating DRPH is likely the primary compound within the dissolved-phase TPH plume at the Site.

4.2.7.2 Intermediate Water-Bearing Zone

- Concentrations of DRPH exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW48 and 01MW51 during one or more of the groundwater monitoring events.
- Concentrations of ORPH exceeding the preliminary cleanup level were detected in groundwater samples collected from well 01MW48 during one of the groundwater monitoring events.
- Concentrations of GRPH exceeding the preliminary cleanup level were detected in groundwater samples collected from well 01MW48 during one or more of the groundwater monitoring events.
- Concentrations of benzene exceeding the preliminary cleanup level were detected in groundwater samples collected from wells 01MW48 and 01MW51 during one or more of the groundwater monitoring events.

4.2.7.3 Groundwater Geochemical Conditions

Monitoring wells 01MW13, 01MW69, 01MW74, 01MW75, G10IW01, M5IW01, N7IW01, and 01MW03 were selected to study the geochemical conditions within the dissolved-phase TPH plume. The monitoring wells are located on or near the centerline of the dissolved-phase TPH plume (Figures 20 and 21). Monitoring well 01MW13 is the most upgradient monitoring well for the monitoring well network and is located outside of the dissolved-phase TPH plume, while the most downgradient monitoring well is 01MW03. The remaining monitoring wells are located within the dissolved-phase TPH plume.

The objective of this study was to assess under what geochemical conditions dissolved-phase TPH is degrading in the groundwater and if these conditions are conducive to the survival of bacteria that degrade TPH. Analytical results for geochemical parameters used in the study were from samples collected in October 2012 and January 2013 and are presented in Tables 19 and 20. The results from the study are as follows:

- The dissolved oxygen concentrations in the shallow groundwater within the monitoring well network ranged from 0.27 milligrams per liter (mg/L) at monitoring well 01MW75 to 4.41 mg/L at monitoring well 01MW74. Dissolved oxygen concentrations less than 1 mg/L are typically associated with anaerobic conditions, while a dissolved oxygen concentration greater than 1 or 2 mg/L are typically associated with aerobic conditions (Wiedemeier et al. 1995, Salanitro 1993). Higher than typical dissolved oxygen is attributed to the 2010 interim action that included chemical oxidation injection.
- The nitrate concentrations in shallow groundwater within the monitoring well network ranged from below the laboratory reporting limit to 0.011 mg/L at 01MW74. Nitrate concentrations less than 1 mg/L are typically associated with anaerobic conditions (Wiedemeier et al. 1995, Salanitro 1993).
- Ferrous iron concentrations greater than 1 mg/L are associated with anaerobic conditions that are somewhat conducive to the relatively slow biodegradation (Wiedemeier et al. 1995; Salanitro 1993). Ferrous iron concentrations for the monitoring well network ranged from below the laboratory reporting limit to 34.0 mg/L at M5IW01.
- Sulfate concentrations in the shallow groundwater within the monitoring well network ranged from 12.2 mg/L at monitoring well 01MW74 mg/L to 3,023 mg/L at monitoring well M5IW01. Sulfate concentrations less than 20 mg/L are typically associated with anaerobic conditions (Wiedemeier et al. 1995, Salanitro 1993).
- The methane concentrations in the shallow groundwater within monitoring well network ranged from not detected above laboratory reporting limits to 0.82 mg/L at monitoring well 01MW13. Methane concentrations less than 0.5 mg/L are typically associated with aerobic to anoxic conditions (Wiedemeier et al. 1995, Salanitro 1993).
- The ORP readings from the shallow groundwater within monitoring well network ranged from 127 millivolts (mV) at monitoring well M5IW01 to -84 mV at monitoring well 01MW03. ORP readings less than 50 mV are associated with anaerobic conditions.

- The pH of the groundwater within the monitoring well network ranged from 5.0 to 6.8. A pH range of 5 to 9 is optimal to support indigenous anaerobic bacteria that support the degradation of TPH under anaerobic conditions (Wiedemeier et al. 1995, Salanitro 1993).

Results from the assessment of geochemical conditions in the dissolved-phase TPH plume at the Site indicate that TPH is degrading primarily under anaerobic conditions with some lesser amount of degradation occurring under aerobic conditions. These conclusions are based on the relative absence or presence and concentrations of oxygen, nitrate, ferrous iron, sulfate, and methane in the shallow groundwater within the monitoring well network. In addition, these conditions, along with the pH range of the groundwater, support the degradation of dissolved-phase TPH plume within the shallow water-bearing zone by indigenous anaerobic bacteria (Wiedemeier et al. 1995). Research has shown that anaerobic degradation may account for 90 percent or greater of the TPH being biodegraded in groundwater (Wiedemeier et al. 1995). Rates of biodegradation of TPH are much slower under anaerobic conditions compared to oxygen-rich conditions. However, some aerobic biodegradation is probably occurring within the dissolved-phase TPH plume at the Site because studies have shown that aerobic biodegradation can occur even at low concentrations of dissolved oxygen similar to the oxygen concentrations present in the shallow water-bearing zone at the Site (Wiedemeier et al. 1995).

4.2.8 Aquifer Testing

Aquifer testing was conducted at the Seattle Terminal Properties including the Bulk Terminal Property between 2009 and 2011 to estimate the hydraulic characteristics of shallow water-bearing zone and the underlying semiconfining to confining layer comprised of silt and clay. The aquifer testing at the Seattle Terminal Properties included slug and pump testing, and laboratory analysis for soil physical properties and organic carbon data. The hydraulic parameters obtained from these tests were used for contaminant fate and transport analysis and development of the CSM. Summary tables and charts of data collected and analyzed and figures from the aquifer testing are provided in Appendix J.

4.2.8.1 Slug Tests

In March 2009, SoundEarth conducted slug tests in monitoring wells 01MW03, 01MW21, 01MW38, 01MW40, and 01MW59 to estimate the hydraulic conductivity of the shallow water-bearing zone encountered beneath the Bulk Terminal Property. Slug tests were also conducted on an additional five monitoring wells installed at the ASKO Hydraulic Property or the East Waterfront property.

The slug used for testing was constructed from a piece of PVC pipe filled with clean sand to displace a known volume within the water column. Water levels were monitored during the slug tests using Aquistar PT2X vented pressure transducers that incorporate automatic logging of water level data using Aquistar Aqua4Plus software. The pressure transducer was programmed to record readings at intervals ranging from 1 second to 1 minute during the slug tests. An electronic water level indicator was also used to obtain periodic manual water level measurements during the slug tests.

The test wells were opened and allowed to equilibrate with the atmosphere for at least 30 minutes prior to conducting each test. The pressure transducer was placed at a depth of at least 2 feet below the targeted submergence depth of the slug. Water levels were monitored after

placing the pressure transducer in the monitoring well to confirm that the water level had stabilized before inserting the slug. To start the slug test, the slug was lowered into the well until it was fully submerged. Following the introduction of the slug, water levels were allowed to equilibrate. After equilibration was reached, the slug was quickly removed from the monitoring well to test the rising head, and water levels were allowed to re-equilibrate.

Following field testing, the water level data were downloaded from the pressure transducers, compiled, and processed for analysis. Data processing included selecting the time interval of interest, reducing the measurement frequency where appropriate, and converting the water levels to displacements (change versus the initial water level). Time series files of the recorded displacements for each test were then exported to AquiferWin32 (Environmental Solutions, Inc.) for analysis.

The data were analyzed by the Bouwer and Rice (1976) method, using the procedures described by Bouwer (1989), which pertain to wells screened across the water table. Assumptions of the Bouwer and Rice method include the following (Todd and Mays 2005, Bouwer 1989):

- The aquifer is unconfined and has an apparently infinite areal extent.
- The aquifer is homogeneous, isotropic, and of uniform thickness over the area influenced by the slug test.
- Prior to the test, the water table is (nearly) horizontal over the area that will be influence by the test.
- The head in the well is lowered instantaneously at time zero, the drawdown in the water table around the well is negligible, there is no flow above the water table.
- The inertia of the water column in the well and the linear and non-linear well losses are negligible.
- The well either partially or fully penetrates the saturated thickness of the aquifer.
- The flow to the well is in steady state.
- Because the water table in the aquifer is kept constant and is taken as a plane source of water, the Bouwer and Rice method can also be used for a leaky aquifer, provided that its lower boundary is an aquiclude and its upper boundary an aquitard.

The results from the slug tests indicated the following:

- The estimated hydraulic conductivity of the shallow water-bearing zone ranged from a low of 0.085 feet per day (ft/day) in monitoring well 01MW21 to a high of 5.1 ft/day in monitoring well 01MW38.
- The arithmetic mean hydraulic conductivity from the slug tests was 1.5 ft/day.

4.2.8.2 Pump Tests

Two pump tests were conducted by SoundEarth on August 16 and September 1, 2011, to estimate the hydraulic conductivity in the shallow water-bearing zone near the top of the water table beneath the Bulk Terminal Property. The pump tests were designed as low-flow pumping tests for the purpose of minimizing water level drawdowns and vertical migration of the LNAPL

present on the water table. Existing injection, recovery, and monitoring wells completed in the shallow water-bearing zone were used as pumping and observation wells for the tests.

A pneumatic pump (positive air displacement pumps) was used to extract water from the pump wells during the tests. The pneumatic pumps were operated using 35-second cycles (5 seconds of compressed air, followed by 30 seconds of re-filling) during the low-flow pumping tests. This timing was sufficient to maintain the water level at the level of the pump intake, which was set at approximately 1.5 feet below the initial static water level.

Pressure transducers were used to measure water levels in the pumping and observation wells. Depths to water and, if present, LNAPL were also measured manually using oil/water interface probes. The August 16, 2011, pumping test utilized remediation well N7IW01 as the pumping well. Monitoring well 01MW21 and remediation wells IW03, IW05, and IW07 were used as observations wells during the pumping test. These observation wells are located at distances ranging from about 2 to 6 feet from pumping well N7IW01, as shown in Appendix J. The pumping test continued for a period of about 6 hours, with an average pumping rate of 0.20 gallons per minute.

Remediation well P8IW01 was utilized as the pumping well for the September 1, 2011, pumping test, and remediation wells O8IW011, P7IW01, P9IW01 and Q8IW01 were used as observation wells. The four observation wells are located at distances ranging from about 8 to 11 feet from pumping well P8IW01. Pumping continued at well P8IW01 for more than 24 hours, although continued operation of the pump affected the longer-term water level data as discussed below. Groundwater was extracted from well P8IW01 at an average rate of 0.41 gallons per minute during the early portion of the pumping test.

Pressure transducer measurements were corrected for barometric effects. No corrections were required for LNAPL effects, since no changes in the LNAPL thicknesses (if present) in the monitoring wells were observed during the pumping tests.

A data summary table for each of the pump tests and each of the wells that were used in the analysis is included in Appendix J. The transmissivity and hydraulic conductivity values calculated for tests as well as graphical results with Neuman type curves and matches output from the AquiferWin32 program for each of the observation wells are included in Appendix J.

The resulting data were analyzed using the Neuman (Neuman 1972) method for unconfined aquifers. Pumping responses in unconfined aquifers are more complex than confined aquifers because the mechanisms releasing water from aquifer storage change over time. The delayed drainage of residual water above the water table provides an additional source of flow towards the pumping well. The Neuman method accounts for the delayed drainage in a water table aquifer. Assumptions of the Neuman method include the following (Neuman 1972):

- A confined aquifer is not dewatered during pumping and remains fully saturated.
- The water produced by a well in a confined aquifer comes from the expansion of the water in the aquifer due to a reduction of the water pressure, and from the compaction of the aquifer due to increased effective stresses.
- The flow towards the well in a confined aquifer is and remains horizontal and there are no vertical flow components in the aquifer.
- The aquifer is isotropic or anisotropic.

- The flow to the well is in an unsteady state.
- The influence of the unsaturated zone upon the drawdown in the aquifer is negligible.
- The volume of water released from storage per unit surface area per unit decline of the water table divided by the volume of water instantaneously released from storage per unit surface area per unit decline in head is greater than 10.
- An observation well screened over its entire length penetrates the full thickness of the aquifer.
- The diameters of the pumped and observation wells are small, i.e., storage in them can be neglected.

The results from the pump tests indicated the following:

- The estimated hydraulic conductivity from the pump test performed on August 16, 2011 from observation wells ranged from approximately 0.12 to 0.75 ft/day. The arithmetic mean was 0.42 ft/day.
- The estimated hydraulic conductivity from the pump test conducted on December 16, 2011 from observation wells ranged from approximately 2.5 to 4.2 ft/day. The arithmetic mean was 3.3 ft/day.

4.2.8.3 Laboratory Analysis of Soil Physical Properties and Organic Carbon Data

Soil samples were collected from the shallow water-bearing zone and underlying confining layer in boring B199 for laboratory analysis of soil physical properties. The samples were collected during drilling activities for the RI using Dames and Moore samplers lined with 2-inch-long brass rings. The containers were placed in an iced cooler and transported for laboratory analysis to PTS Laboratories, Inc. of Santa Fe Springs, California, under standard chain-of-custody protocols. The samples were submitted for laboratory analysis of the following:

- Moisture content by American Petroleum Institute (API) Recommended Practice (RP) 40 and American Society for Testing and Materials International (ASTM) D2216.
- Bulk and grain density, total and air filled porosity, and total pore fluid saturation by API RP 40.
- Effective permeability to water and hydraulic conductivity by API RP 40 and U.S. Environmental Protection Agency (EPA) Method 9100.
- Total and effective porosity by Modified ASTM D425.
- Fraction organic carbon and total organic carbon by Walkley-Black.
- Particle size analysis by ASTM D422 and ASTM 4464.

Analytical results for the samples analyzed for soil physical properties indicated the following:

- Moisture content was measured at 21.0 percent by weight in the shallow water-bearing zone at 9.25 feet below ground surface and 22.1 percent by weight in the confining layer at 19.6 feet below ground surface.

- Dry bulk grain density and grain density were measured at 1.52 and 2.70 grams per cubic centimeter (g/cm^3) in the shallow water-bearing zone. Dry bulk grain density and grain density were measured at 1.44 and 2.68 g/cm^3 in the confining layer at the Bulk Terminal Property.
- The total porosity and air-filled porosity in B199 were measured at 43.5 and 11.5 percent bulk volume, respectively, in the shallow water-bearing zone at 9.25 feet below ground surface. The total porosity and air-filled porosity in B199 were measured at 46.3 and 14.6 percent bulk volume, respectively, in the confining layer at 19.6 feet bgs at the Bulk Terminal Property.
- Total pore fluid saturation was measured at 73.6 percent pore volume in the shallow water-bearing zone and 68.6 percent pore volume in the confining layer at the Bulk Terminal Property.
- Effective permeability to water was measured in the confining layer at 1.33 millidarcys.
- Effective porosity was measured at 24.3 by percent bulk volume for the soil samples collected from the shallow water-bearing zone.
- Hydraulic conductivity was measured at 1.87×10^{-4} centimeters per second (cm/sec) for sample B199-9-9.5 collected from the shallow water-bearing zone, which is consistent with values obtained from slug tests. Hydraulic conductivity was measured at 1.31×10^{-6} cm/sec for sample B199-19.5-20 collected from the confining layer below the shallow water-bearing zone.
- Total organic carbon in the shallow water-bearing zone at the Bulk Terminal Property was 920 mg/kg in B199.
- Fraction organic carbon was measured at 0.00092 grams per gram in the shallow water-bearing zone in B199.
- The particle size distributions are consistent with the visual estimates recorded in the boring logs (Appendix H), which indicate fine to medium sand with total silt and clay contents ranging from approximately 15 to 55 percent in the shallow water-bearing zone and total silt and clay contents ranging from approximately 31 to 100 percent in the confining layer below the shallow water-bearing zone.

The values for the soil physical properties correspond to the range of typical values for soils with similar particle size distributions and densities (Freeze and Cherry 1979).

4.2.8.4 Aquifer Testing Analysis

SoundEarth conducted aquifer testing in the shallow water-bearing zone to analyze contaminant fate and transport. Aquifer properties of water storage include porosity, specific yield, and storativity. Aquifer properties of water transmission include hydraulic conductivity, transmissivity, hydraulic gradient, and seepage velocity.

The effective porosity was measured at 24.3 by percent bulk volume for the soil sample B199-9-9.5 collected from the shallow water-bearing zone. The soil observed at this boring is representative from the shallow water-bearing zone. Specific yield was not calculated based on

limitations associated with the testing methods. The storage coefficient geometric mean calculated from the pumping test ranged from 1.2×10^{-2} to 3.4×10^{-3} .

Hydraulic conductivity is the capacity to transmit water. The shallow aquifer hydraulic conductivity values calculated from the slug test, pump test, and laboratory testing for most of the locations are relatively consistent. Based on the studies, the hydraulic conductivity in the Bulk Terminal Property ranges from about 0.085 to 5.1 ft/day. The lower hydraulic conductivity values calculated from the slug test and aquifer pumping test correspond to the finer-grained soil characteristics observed in explorations completed in the vicinity of monitoring well 01MW21.

The hydraulic conductivity values analyzed by laboratory samples collected from the shallow water-bearing zone compare favorably to those obtained from the slug tests and the pumping tests. This range of hydraulic conductivity values correspond to the range of published values for similar silty sand materials (Coduto 1999). This supports a conceptualization of the aquifer as mostly homogenous at scales ranging from inches to feet. The values for the soil physical properties correspond to the range of typical values for soils with similar particle size distributions and densities (Freeze and Cherry 1979).

Transmissivity is a measure of the hydraulic conductivity through the saturated thickness of an aquifer. Based on the studies, the transmissivity in the Bulk Terminal Property ranges from about 8.7×10^{-5} to 2.6×10^{-4} square feet per second. These numbers were generated based on measured saturated thickness in wells N7IW01 and P8IW01 during pump testing which ranged from 9 to 13 feet thick. The calculated transmissivity was used to evaluate the estimated horizontal hydraulic conductivity which ranged from 0.12 to 4.3 feet per day. Given that transmissivity is a product of hydraulic conductivity and the range of hydraulic conductivity values correspond to the range of published values for similar silty sand materials, these numbers support soil types observed at the Bulk Terminal Property.

The average hydraulic gradient of the shallow water-bearing zone at the Seattle Terminal Properties is 0.07 feet per foot as presented in RI Report. Seepage velocity is calculated by multiplying hydraulic conductivity by the hydraulic gradient and dividing by the porosity. Based on the results of this aquifer testing analyses, estimated range of groundwater seepage velocity for the shallow water-bearing zone is 0.024 to 1.47 ft/day.

4.2.9 Light Nonaqueous-Phase Liquid Sampling

LNAPL is defined in MTCA as a hazardous substance that is present in the soil, bedrock, groundwater or surface water as a liquid not dissolved in water (WAC 173-340-200). Measurable LNAPL has been observed during one or more of the remedial investigation monitoring and sampling events in wells 01MW05, 01MW21 through 01MW25, 01MW27, 01MW28, 01MW29, 01MW41, 01MW43, 01MW68, 01MW72 through 01MW74, G7IW01, M5IW01, and IW08 in the Bulk Terminal Property and in monitoring wells 01MW02, 01MW09, 01MW10, 01MW16, 01MW33, 01MW47, 01MW49, and 01MW51 in the West Commodore Way ROW. A historical LNAPL plume is presented on Figure 27. The maximum thickness of LNAPL measured in a monitoring well was 5.27 feet in well 01MW10 during the Second Quarter 2011 monitoring event (Table 7).

In April 2009, March 2010, April 2010, July 2010, and January 2011 samples of LNAPL were collected from monitoring wells 01MW05, 01MW10, 01MW16, 01MW23, 01MW28, 01MW29,

01MW41, 01MW43, 01MW68, 01MW73, C3IW01, and G7IW01 analyzed for DRPH, ORPH, GRPH, or BTEX.

In November 2006, October 2008, October 2009, and March 2010 samples of LNAPL were collected from monitoring wells 01MW05, 01MW10, 01MW16, 01MW22, 01MW23, 01MW25, 01MW28, 01MW29, 01MW68, and 01MW73 and analyzed for PCP.

In July 2010, September 2010, and January 2011, samples of LNAPL were collected from wells 01MW23, 01MW29, 01MW41, 01MW73, C3IW01, and G7IW01 and analyzed for EPH/VPH.

4.2.9.1 Light Nonaqueous-Phase Liquid Results

A summary of the depth-to-groundwater, depth-to-LNAPL, and groundwater elevations for the monitoring wells on the Bulk Terminal Property and West Commodore ROW are presented in Table 7. LNAPL results are presented on Tables 8, 9, and 22. Analytical results for the LNAPL samples collected from the Bulk Terminal Property and West Commodore Way ROW during the remediation investigation indicated the following:

- Concentrations of TPH and/or BTEX were present in all of LNAPL samples analyzed. These results demonstrate that TPH and BTEX are the primary source of LNAPL; DRPH and GRPH are the most common constituents present in the LNAPL.
- Concentrations of PCP were not detected above the laboratory PQLs. These results indicate that if a release of the PCP mixture had occurred during the historical wood preservative production operations, the release of the PCP mixture would have been localized to an area near the PCP mixing area and associated AST and the migration of the PCP mixture did not migrate beyond the limits of the PCP plume.
- VPH and EPH results in LNAPL show that aliphatics are much more prevalent in than aromatics, weathering and biodegradation processes are occurring within the LNAPL plume at the Site.

4.3 INTERIM ACTION FIELD PROGRAM

A summary of the interim remedial actions conducted by SoundEarth at the Bulk Terminal Property and West Commodore Way ROW is provided below. The interim action field program included stormwater pretreatment system operations and associated surface water sample collection, a 2006 UST removal, a 2010 UST removal, 2010 PCP interim action, 2011 hot spot soil removal action, and the 2012 full-scale soil removal action.

4.3.1 Stormwater Pretreatment System

A stormwater pretreatment system is currently operating at the Bulk Terminal Property (Figure 3). The date of original installation and the contractor who completed the installation is unknown. The objective of the stormwater pretreatment system was to prevent the off-property migration of surface water with concentrations of PCP from the former bulk petroleum storage yard. The stormwater pretreatment system is composed of collection drains and two sumps, which have been in place since at least 1974; an oil/water separator installed in 1982; and a bag filter train, transfer tank, influent sump, and four water treatment vessels installed by SoundEarth in 2006 to reduce PCP concentrations in the process effluent. The GAC treatment media in the four water treatment vessels were installed by SoundEarth in 2012. Details of the initial design, operation, and supporting documentation for the treatment system are provided

in the Operation and Maintenance Manual for Stormwater Pretreatment System, prepared by SoundEarth dated May 21, 2009 (SES 2009).

Stormwater runoff from the Former Tank Yards, the paved area between the Headquarters Office Building and the Former Overhead Fuel Loading Racks, is intercepted by a series of zipper drains that route stormwater to the valve pit and system influent sump. Stormwater is pumped from the influent sump into the oil/water separator. No LNAPL is pumped as stormwater. The accumulated water within the oil/water separator drains by gravity to a transfer tank. Mechanical float switches control the fluid level in this surge tank through the operation of a process pump that pumps water from the surge tank through a series of bag filters before it is routed through two liquid-phase GAC treatment vessels. The system is designed to operate with a pair of GAC units in series, with a second pair of GAC units on standby if breakthrough occurs in the primary units. When the two GAC units in service become exhausted, the units are taken off line and the flow is routed through the clean standby units, which are also operated in series. Effluent water from the GAC vessels discharges to the King County Metro Storm Sewer and a data logger records flow rate and total cumulative flow data from the flowmeter located on the discharge line.

In accordance with King County terms for operation of the interim treatment system, SoundEarth collected water samples on an approximate daily basis for PCP analysis between November 11, 2006, and December 1, 2006; on a weekly to biweekly basis through February 2007; and on a monthly basis thereafter to present time. SoundEarth's current quarterly operation and maintenance includes the following (Table 23):

- Collecting influent process water samples from the effluent of the oil/water separator at the bag filters.
- Collecting a mid-GAC process water sample from the effluent of the primary GAC vessel before entry to the secondary GAC vessel.
- Collecting an effluent process water sample from the effluent of the secondary GAC vessel before the discharge point to the King County Metro sewer.

The process water samples are currently analyzed quarterly for PCP by EPA Method 8260; fats, oils, and greases by EPA Method 1664; BTEX by EPA Method 8021B; and pH by the EPA Method 9040C.

A quarterly submission of a Self-Monitoring Report of Monthly Effluent Sampling is submitted by the 15th of the month following the preceding quarter (i.e., January 15, April 15, July 15, and October 15), in accordance with the terms and conditions of Waste Discharge Permit Number 7689, obtained from King County Wastewater Treatment Division. Quarterly concentrations of PCP in treated effluent stormwater have been below the King County Industrial Allocation of 5.3 µg/L since inception (Table 24). Concentrations of fats, oils, and greases, BTEX, and pH for the previous four quarters in secondary treated stormwater have been below King County Industrial Waste Discharge Criteria (Table 17). A single set of dioxin and furan samples were collected in 2008 and are further discussed below (Table 25).

4.3.1.1 Surface Water Sample Collection

Stormwater runoff in the Former Tank Yards within the Bulk Terminal Property is collected through a series of zipper drains and sumps, pumped through an oil/water separator, and

discharged to the sanitary sewer under King County Industrial Waste Permit Number 7689. Beginning on November 3, 2006, runoff was routed through a GAC pretreatment system before discharge to sanitary sewer. Under the conditions of King County Industrial Waste Permit Number 7689, influent and effluent samples are collected monthly for PCP analysis. Effluent samples are collected quarterly for analysis of fats, oils, and greases, pH, and BTEX. TOC submits the results of periodic sampling and analysis to King County under a self-monitoring program. In February 2008, King County Metro and Ecology required that the influent and effluent samples be analyzed for dioxins to confirm the stormwater discharge to the sanitary sewer was within the applicable discharge limits. A portion of the stormwater runoff in the Former Tank Yards evaporates or infiltrates the ground surface in unpaved areas.

No stormwater collection infrastructure is known to exist between the Headquarters Office Building and the east fenced compound at the ASKO Hydraulic Property. Rainfall within this area flows overland as sheet-flow downhill toward West Commodore Way and either collects within the catch basin stormwater system connected to the North Trunk Sewer, evaporates, or infiltrates exposed soil within unpaved areas. Rainfall within these Seattle Terminal Properties flows overland, evaporates, or infiltrates exposed soil within unpaved areas.

A groundwater pretreatment system was combined with the stormwater treatment system in 2010 to treat COPCs from groundwater sampling. Discrete samples are collected from the groundwater pretreatment system before batch discharges.

4.3.1.2 Surface Water Sample Results

The results of sampling and analysis conducted since March 27, 2006, confirmed the presence of PCP in stormwater runoff from the Former Tank Yard. The results of influent and effluent stormwater analysis are summarized on Tables 23 through 25.

Between November 11, 2006, and January 28, 2013, concentrations of PCP in influent stormwater ranged from less than the detection limit to 36 µg/L. Since November 11, 2006, concentrations of PCP in influent stormwater exceeded the King County discharge criteria of 5.3 µg/L on four occasions: November 16, 2006; December 29, 2006; January 2, 2007; and March 6, 2007. The first exceedance coincided with a spell of dry weather when the intake pump collected muddy water from the base of the collection sump. The cause(s) of the second, third, and fourth exceedances has not been established. Concentrations of PCP in treated effluent have not exceeded the King County Discharge Levels throughout the operation of the pretreatment system (Table 23). In addition, concentrations of dioxins collected on February 7, 2008, in treated effluent met the King County applicable discharge limits (Table 25). According to an Ecology email dated July 24, 2008, Ecology does not consider the treated stormwater and spent GAC stormwater treatment units to be a listed (F027) dangerous waste in accordance with WAC 173-303-070(2)(a) of the Washington State Dangerous Waste Regulations. This determination is based on the current site conditions, current information Ecology has reviewed regarding TOC past operations (including cleanup), and the data provided (Ecology 2008b).

Discharge results for the groundwater pretreatment system are below the King County Discharge criteria and are presented on Table 26.

4.3.2 2006 Underground Storage Tank Removal

In April 2006, TOC contracted the removal of two fuel-dispensers and a 4,000-gallon, dual-compartment UST (UST #3) located north of the northeast corner of the Headquarters Office

Building, and a 3,000-gallon UST (UST #4) historically used as a vapor knockout additives tank located at the north end of the Former Tank Yard (Figure 11; Tables 12, 13, and 28). No dispensers or buried runs of piping were associated with the vapor knockout UST. The two fuel-dispensers and 4,000-gallon, dual-compartment UST were installed at the Bulk Terminal Property in 1991, at the time of the removal of the three former USTs and two fuel-dispensers, which were previously described above in Section 3.0. The installation date of the vapor knockout UST is unknown; however, the UST is present on a drawing titled Pollution Control Facilities, Drawing No. 1, dated October 27, 1982 (Harvey R. Dodd and Associates 1982).

The contents of the 3,000-gallon UST were initially unknown; therefore, on January 26, 2006, a grab sample was collected from the vapor within the tank with the use of a 1-liter Summa canister. The vapor sample was analyzed at Air Toxics Ltd. of Folsom, California, for VOCs by EPA Method TO-15. Concentrations of ethanol and toluene were detected in the vapor sample. A copy of the laboratory report is included in Appendix F.

The 4,000-gallon, dual-compartment UST appeared to be in good condition upon removal, with no holes observed. Blue-stained soil was observed on the east sidewall at approximately 6 to 8 feet bgs within the UST cavity. No additional excavation was conducted, and the UST cavity was backfilled with the soil overburden. The two fuel-dispensers were removed and a single sample was collected from approximately 1.5 feet beneath each dispenser.

The vapor knockout UST appeared rusted upon removal; however, no holes were observed. Upon removal of the vapor knockout UST, a sheen was observed on groundwater in the UST cavity as well as on soil. No additional excavation was conducted. The UST cavity measured approximately 13 feet by 25 feet by 12 feet deep. The UST cavity was backfilled with the soil overburden.

A total of 12 soil samples were collected: two from the fuel-dispenser excavation (D-N-1.5, D-S-1.5); five from the Headquarters Office Building UST cavity (HQ-B-12, HQ-E-8, HQ-N-8, HQ-S-8, HQ-W-8); and five from the vapor knockout UST cavity (VK-B-12, VK-E-10, VK-N-10, VK-S-10, VK-W-10). Soil samples collected from the fuel-dispenser and UST cavities were submitted for laboratory analysis of one or more of the following: GRPH by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx; DRPH and ORPH by Method NWTPH-Dx; BTEX by EPA Method 8021B; VOCs and oxygenates by EPA Method 8260B; or lead by EPA Method 200.7.

4.3.2.1 Results

The laboratory analytical results for the UST removal vapor knockout UST removal are summarized below.

4.3.2.1.1 Headquarters Office Building Underground Storage Tank Results

Analytical results for soil samples collected from beneath the fuel-dispenser cavity and the 4,000-gallon UST cavity, located north of the northeast corner of the Headquarters Office Building, indicated the following (Figure 11; Tables 12 and 13):

- Concentrations of GRPH exceeding the preliminary cleanup level were detected in the soil sample collected from beneath the northern fuel-dispenser from approximately 1.5 feet bgs and from the soil sample collected from the east sidewall of the UST cavity from approximately 8 feet bgs.

- A concentration of benzene exceeding the preliminary cleanup level was detected in the soil sample collected from the base of the UST cavity at approximately 12 feet bgs.
- Concentrations of DRPH, ORPH, toluene, ethylbenzene, total xylenes, EDB, EDC, MTBE, ethanol, and lead were below the laboratory reporting limits or the preliminary cleanup levels in the analyzed samples.

4.3.2.1.2 Vapor Knockout Underground Storage Tank Results

Analytical results for soil samples collected from the cavity of the vapor knockout UST excavation indicated the following (Figure 11; Tables 12, 13, and 28):

- A concentration of DRPH exceeding the preliminary cleanup level was detected in the soil sample collected from the north sidewall at approximately 10 feet bgs.
- Concentrations of GRPH exceeding the preliminary cleanup level were detected in the soil samples collected from the north and west sidewalls at approximately 10 feet bgs.
- Concentrations of ORPH, BTEX, ethanol, VOCs, and lead were below the laboratory reporting limits or the preliminary cleanup levels in the analyzed samples.

4.3.3 2010 Underground Storage Tank Removal

UST #6 was removed from the Bulk Terminal Property on June 24, 2010 (Figure 4). Removal activities were performed by Clearcreek Contractors, Inc. of Everett, Washington. SoundEarth provided an International Fire Code Institute-certified UST Site Assessor (Certificate No. 8008373-U7) to observe and document the UST decommissioning and removal activities.

A concrete slab above UST #6 was removed and overburden above the tank was stockpiled on visqueen. A marine chemist from Sound Testing Inc. confirmed the tank was inert and a City of Seattle Fire Marshall approved tank removal. UST #6 measured approximately 5.2 feet long by 3 feet in diameter with a volume of approximately 300 gallons. No holes were observed in UST #6 after removal. A pipe was exposed at the northeast corner of the excavation. Further investigation of the pipe revealed it to be filled from 50 percent to 75 percent with cement.

Three soil samples were collected from the sidewalls and base of the UST excavation. The sidewall samples collected from the east and south sidewalls at 4.5 feet bgs and north and west sidewalls were composited by the analytical laboratory, and a single sample was collected from the base of the excavation at 7 feet bgs. Three soil samples were collected from the soil stockpile and composited by the analytical laboratory. Each sample was submitted for laboratory analysis for DRPH, ORPH, and BTEX.

4.3.3.1 Results

Strong hydrocarbon odor and staining were observed in soil from ground surface to approximately two feet above UST #6. LNAPL was observed from approximately 1 to 2 feet bgs. Soil overburden consisted of silty sand with trace gravel. Groundwater was not encountered during UST removal activities.

Concentrations of DRPH, ORPH, and BTEX in soil samples collected from the UST excavation and soil stockpile were not detected above the preliminary cleanup levels or the laboratory

reporting limits (Table 12). The stockpiled soil was drummed for future disposal and the excavation was backfilled with clean, imported fill material.

4.3.4 2010 Pentachlorophenol Interim Remedial Action

Between February 2010 and January 2011, SoundEarth completed an interim action to remediate the PCP plume located within the designated PCP treatment area (Figure 20).

An injection well network installation grid measuring approximately 120 feet by 170 feet and segregated into 204 discrete grid cells (A1 through Q12), each measuring approximately 10 feet by 10 feet was used to identify the locations of injection wells and provide a naming convention for injection wells. The locations of injection wells were on center in selected grid cells located within the PCP plume. In the event that access issues were encountered at proposed drilling locations, the injection wells were moved to accessible locations.

A total of 144 injection wells were installed on approximate 10-foot centers. The injection wells were constructed of 2-inch-diameter blank PVC casing, flush-threaded to 0.010-inch slotted well screen. The bottom and top of each of the wells were fitted with a threaded PVC bottom cap and a locking compression-fit well cap. The annulus of the monitoring wells was filled with #2/12 silica sand to approximately 1 foot above the top of the screened interval. A bentonite seal having a minimum thickness of 1 foot was installed above the sand pack. The wells were completed to the surface with cement grout. Select boring logs from this interim action are included in Appendix H and represent typical soil profile and well completion.

Operation of the injection system began on October 7, 2010, and concluded on December 22, 2010. The injection system was used to mix a high concentration of sodium persulfate with potable water as specific ratios to create a 10 percent aqueous-phase sodium persulfate mixture. A total of approximately 302,500 gallons of sodium persulfate mixture was injected during the injection. A total of 114 bags of sodium persulfate were used to make a total of 114 batches of sodium persulfate mixture.

4.3.4.1 Results

A baseline groundwater monitoring event was conducted in July and August 2010 to confirm groundwater quality within and nearby the PCP treatment area prior to implementation of the 2010 PCP interim remedial action. The baseline groundwater monitoring event included the sampling of 37 wells and analyzing the samples for PCP. Wells sampled during the baseline groundwater monitoring event included 01MW01, 01MW04, 01MW12, 01MW13, 01MW21 through 01MW29, 01MW37, 01MW38, 01MW40 through 01MW43, 01MW66 through 01MW69, 01MW72 through 01MW75, C3IW01, E9IW01, F4IW01, J10IW01, K3IW01, L2IW01, M5IW01, N10IW01, O5IW01, and Q9IW01. The analytical results from the baseline event indicated that 12 of the 37 groundwater samples collected from wells located in the PCP treatment area had detectable concentrations of PCP exceeding the preliminary cleanup level. The highest detectable concentration of PCP was detected in well K3IW01 at a concentration of 160 µg/L (Table 8).

Quarterly performance groundwater monitoring conducted after the 2010 PCP interim remedial action to assess the groundwater quality at the Site has included sampling up to 50 wells for PCP and other COPCs. Analytical results for the performance groundwater samples collected from 50 wells after the 2010 PCP interim remedial action indicated the following:

- Concentrations of PCP exceeding the preliminary cleanup level were detected in the groundwater samples collected from 24 wells (01MW01, 01MW13, 01MW21, 01MW22, 01MW23, 01MW25, 01MW27, 01MW29, 01MW37, 01MW41, 01MW66, 01MW69, 01MW74, A6IW01, C3IW01, F4IW01, J7IW01, J10IW01, K3IW01, L2IW01, M5IW01, O5IW01, 01MW10 and 01MW16) during one or more of the quarterly groundwater monitoring events between January 2011 and February 2013 with a maximum concentration of 24 µg/L observed in 01MW22. This is a reduction in concentration of 85 percent.
- Concentrations of PCP were below the laboratory PQLs or the preliminary cleanup level in groundwater samples collected from wells 01MW04, 01MW12, 01MW24, 01MW26, 01MW28, 01MW33, 01MW38, 01MW40, 01MW42, 01MW43, 01MW67 through 01MW68, 01MW72, 01MW73, 01MW75, 01MW87, 01MW90, 01MW91, E9IW01, G10IW01, N7IW01, N10IW01, O6IW01, Q9IW01, and IW03 during one or more groundwater monitoring events between January 2011 and February 2013.

The groundwater analytical results from the baseline groundwater monitoring event and quarterly performance groundwater monitoring indicate that a reduction of 85 percent or greater has occurred in the concentrations of PCP in the shallow water-bearing zone within the PCP treatment area as a result of 2010 PCP interim remedial action. It is anticipated that the rate of attenuation of dissolved PCP will accelerate over time based on the significant amount of mass and source area treated during the 2010 interim remedial action.

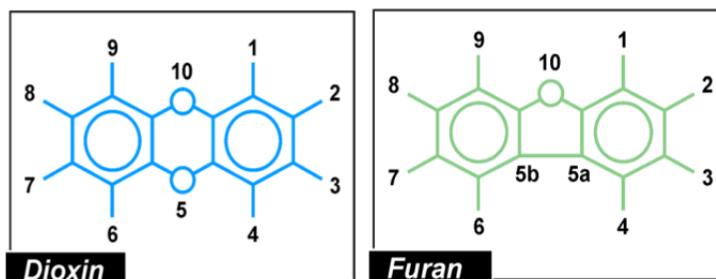
4.3.5 Dioxins and Furans Background Information

Previous subsurface investigations and interim remedial actions conducted by SoundEarth and others confirmed that PCP and/or a PCP mixture were released to the subsurface during the historical wood preservative production operations at the Bulk Terminal Property. The release(s) of the PCP and/or PCP mixture to the subsurface is the primary source of 2,3,7,8-TCDD that is not naturally occurring. The extent of soil with concentrations of PCP that exceeds the MTCA Method B cleanup level of 2.5 mg/kg is in a limited area and in close proximity to the Former PCP Mixing AST and associated production area (Figure 4).

Dioxins and furans are globally distributed and are produced by natural events and industrial activities. Natural sources of dioxins and furans include forest fires and volcanic activity. Industrial activities that generate dioxins and furans include burning of fuels, waste incineration, bleaching, pesticide manufacturing, and wood treatment. The production of certain chlorinated organic chemical compounds, such as PCP or use of acetone during specific extraction steps, can generate dioxins and furans. In addition, PCP contains low concentrations of dioxins and furans. Dioxins and furans have no commercial or domestic applications and are not intentionally produced, except for small quantities used in research (Ecology 1998).

Dioxins and furans emitted to the air from industrial processes can be widely dispersed and travel long distances to settle on water, land, or vegetation. Dioxins and furans are relatively insoluble in water and prefer to adsorb with carbon-based substrates, such as oils and fats, and soils and sediments with high carbon content. The primary exposure route of dioxins and furans to humans is the food chain where dioxins and furans are ingested by organisms, such as fish, poultry, and livestock, and then ingested by humans (Ecology 1998).

Dioxins and furans are large chemical structures that contain two carbon rings with attached chloride atoms joined by either two oxygen atoms for dioxin congeners or one oxygen atom for furan congeners. There are 210 unique dioxin and furan congeners. Of these 210 congeners, 17 are toxic and carcinogenic, and are listed in Table 28. In addition, there are 8 homolog groups within the 17 dioxin and furan congeners, ranging from polychlorinated monochlorodibenzo-*p*-dioxin/furan to polychlorinated octachlorodibenzo-*p*-dioxin/furan. The basic structure of a polychlorinated dibenzo-*p*-dioxin congener and a polychlorinated dibenzofuran congener are presented below:



Reference: Publication EPA-600/2-80-197, November 1980 (Esposito et al. 1980)

The 17 polychlorinated dibenzo-*p*-dioxin and polychlorinated dibenzofuran congeners are considered a single hazardous substance, as defined in WAC 173-340-708(8)(d)(i). The relative toxicity values for each of the 17 congeners are referred to as toxicity equivalency factors (TEF) under MTCA, Table 708-1 of WAC 173-340-900. The most toxic of the congeners is 2,3,7,8-TCDD. A TEF of 1 is assigned to 2,3,7,8-TCDD. The other 16 congeners are assigned TEFs of 1 or less (Table 28).

The TEFs are used to calculate the total toxic equivalent concentration (TTEC) of a sample for comparison to the cleanup levels/remediation levels using the TTEC methodology in WAC 173-340-708. The TTEC is also referred to as the TEQ by the EPA and is a more common term used in the environmental industry. The TTEC is calculated by multiplying the analytical result for each of the 17 congeners with their assigned TEF, and then summing them for the sample TTEC (Ecology 2007).

In 1998, Ecology collected 30 soil samples at numerous locations throughout Washington State to define the background concentrations of 2,3,7,8-TCDD in soils (Ecology 1998, Ecology 1999). The soil samples were collected from four designated land use types that included forested land, open areas, urban areas, and forested and open areas. The natural background TEQ for 2,3,7,8-TCDD in Washington soils is estimated at 2.2 nanograms per kilogram (ng/kg) or parts per trillion. The average TEQ of 2,3,7,8-TCDD is higher in urban areas versus forested and open areas and is typically elevated in the urban areas even when there is no known local industrial source. Of the 30 soil samples, 14 were collected from urban areas and the TEQ for 2,3,7,8-TCDD ranged from 0.133 to 19.5 ng/kg. This study cannot be used to establish a generic urban area background concentration because the sample size does not meet the area background sample size requirement of 20 or more soil samples.

In September 2011, Ecology collected 120 soil samples from six neighborhoods in Seattle to determine the range and magnitude of 2,3,7,8-TCDD in soils in the urban area. The neighborhoods of South Park, Georgetown, West Seattle, Ballard, Capitol Hill, and Ravenna each

had 20 samples collected from various parts of the neighborhood. The TEQ for 2,3,7,8-TCDD ranged from 1.7 to 110 ng/kg or parts per trillion. The average TEQ of 2,3,7,8-TCDD was 19 ng/kg. The nonparametric 90th percentile concentration for the Seattle area was 46 ng/kg (Ecology 2011).

4.3.6 2011 Pentachlorophenol and Associated Dioxins and Furans Hot Spot Excavations

A hot spot soil removal action was conducted in 2011 to accelerate the time frame to remediate soil with concentrations of 2,3,7,8-TCDD that exceeded the MTCA Method C cleanup levels, reduce potential cross contamination caused by surface water infiltration and leaching of adsorbed soil contamination to groundwater, and assist with waste characterization by removing the soil with the known highest concentrations of 2,3,7,8-TCDD before conducting the a full-scale remedial action.

The primary objectives of the hot spot excavations were met by the 2011 interim remedial action. These objectives included accelerating the time frame to remediate soil with concentrations of 2,3,7,8-TCDD that exceed the MTCA Method C cleanup levels, reducing potential cross contamination caused by surface water infiltration and leaching of adsorbed soil contamination to groundwater, and assisting with waste characterization by removing the soil with the known highest concentrations of 2,3,7,8-TCDD before conducting a full-scale remedial action. The hot spot removal action is described in detail in the Draft Interim Action Progress Report: Full-Scale F027 Excavation (SoundEarth In Progress).

Based on the soil analytical results from borings B144 and B151 and other surrounding borings from the subsurface investigations, two hot spot excavation areas were developed to remove soil with the highest concentrations of 2,3,7,8-TCDD that exceed the MTCA Method C cleanup level of 1,460 ng/kg. The highest recorded concentration of 2,3,7,8-TCDD in the hot spot excavation areas was 5,430 ng/kg located in boring B151. The hot spot excavation areas are shown on Figure 28.

4.3.6.1 Results

SoundEarth selected seven samples from hot spot excavation area #1 and six soil samples from hot spot excavation area #2 for laboratory analysis for PCP by EPA Method 8270C and/or 2,3,7,8-TCDD by EPA Method 8290B. The sample elevations ranged from near-surface, approximately 46 feet elevation above msl, to a maximum 39 feet elevation above msl. The soil sample analytical results for PCP ranged from below the PQL to 1.2 mg/kg (Table 14) and the TEQ for 2,3,7,8-TCDD ranged from 0.05 to 23.2 ng/kg (Table 20). Of the 13 soil samples, 4 exceeded the TEQ for 2,3,7,8-TCDD of 11 ng/kg. These four sidewall soil samples were located at elevations ranging from 46 to 41.7 feet elevation above msl. These 13 soil samples were incorporated in the work plan to assist with delineating the lateral and vertical extent of PCP and dioxins and furans at the Bulk Terminal Property (Figure 28).

4.3.7 2012 Full-Scale F027 Soil Removal Action

The focus of the interim action was to remove soil with concentrations of PCP greater than the MTCA Method B cleanup level and soil with concentrations of 2,3,7,8-TCDD greater than the MTCA method B cleanup level or greater than the Seattle area background remediation level. The full-scale F027 soil removal action is described in detail in the Draft Interim Remedial Action Progress Report: Full-Scale F027 Excavation (SoundEarth In Progress). A summary of the

preliminary remediation level for concentrations of 2,3,7,8-TCDD in soil; points of compliance; and soil removal action field activities and results.

4.3.7.1 Preliminary Remediation Level

The MTCA Method B cleanup level for PCP in soil is 2.5 mg/kg. The MTCA Method B cleanup level for 2,3,7,8-TCDD in soil is 11 ng/kg. The Seattle area background remediation level for 2,3,7,8-TCDD in soils is 46 ng/kg (Ecology 2011). A preliminary remediation level for 2,3,7,8-TCDD in soil was established for this interim remedial action as a substitute to establishing a final cleanup level for 2,3,7,8-TCDD for the Bulk Terminal Property. The MTCA Method B cleanup level for 2,3,7,8-TCDD of 11 ng/kg is a very conservative remediation level based on the results of the study conducted in September 2011 by Ecology in six neighborhoods in Seattle, described in Section 4.3.4.1 (Ecology 2011). According to this study, a background TEQ for 2,3,7,8-TCDD of 46 ng/kg is a reasonable concentration to distinguish if impacts are from area background concentrations or from a site-specific source of 2,3,7,8-TCDD. The preliminary remediation level for 2,3,7,8-TCDD in soil is the Seattle area background remediation level of 46 ng/kg.

Other primary COPCs were encountered in soil during the interim remedial action, and performance soil samples were collected and analyzed to further delineate the extent of COPC at the Bulk Terminal Property and to assist with the development and selection of a future cleanup action.

4.3.7.2 Points of Compliance

The points of compliance are the locations at which cleanup levels for the COPCs in each medium of concern must be attained to meet the requirements for obtaining a No Further Action determination from Ecology.

The point of compliance for soil with concentrations of PCP is defined by the lateral and vertical extent of soil with concentrations of PCP that exceed the MTCA Method B cleanup level of 2.5 mg/kg (Figure 18). The extent of soil with concentrations of PCP that exceed the MTCA Method B cleanup level is limited in area and located within the defined boundaries of the PCP in groundwater treatment area shown on Figure 20.

The point of compliance for soil with concentrations of 2,3,7,8-TCDD is defined as the site-specific source of 2,3,7,8-TCDD from releases of PCP and/or a PCP mixture to the subsurface during the historical wood preservative production operation at the Bulk Terminal Property. The releases of the PCP to the subsurface are the primary source of 2,3,7,8-TCDD that are not naturally occurring. The extent of soil with concentrations of PCP that exceeds the MTCA Method B cleanup level is limited in area and located in close proximity to the Former PCP Mixing AST and associated production area (Figure 4). The approximate lateral extent of soil with a TEQ concentration for 2,3,7,8-TCDD that exceeds the MTCA Method B cleanup level of 11 ng/kg or Seattle area background remediation level of 46 ng/kg comprises an area of 11,550 square feet (Figure 19). The maximum elevation of soil with TEQ concentrations of 2,3,7,8-TCDD greater than 46 ng/kg is approximately 32 feet above mean sea level. The source of soil with concentrations of 2,3,7,8-TCDD is PCP from historic PCP mixing activities. 2,3,7,8-TCDD is relatively insoluble compared to PCP, and 2,3,7,8-TCDD contamination is limited to the historical PCP in groundwater treatment area as shown in Figure 20.

The median nonparametric 90th percentile TEQ concentration for 2,3,7,8-TCDD of 46 ng/kg in soil is a reasonable concentration to distinguish if impacts are from area background

concentrations or from a site-specific source of 2,3,7,8-TCDD (Ecology 2011). Soil with TEQ concentrations for 2,3,7,8-TCDD of 46 ng/kg or lower outside of the PCP release area is considered representative of the typical urban area background for Seattle and does not require investigation or cleanup for the Bulk Terminal Property.

4.3.7.3 Soil Removal Action

The soil removal action component of the interim action included excavation and grading of seven elevations within an area footprint of approximately 11,550 square feet at the Bulk Terminal Property (Figure 19). The seven elevations decrease in area with elevation to the deepest elevation of approximately 32 feet above msl.

Soil with concentrations of other primary COPCs, such as TPH, was encountered during the soil removal action (Figure 29; Table 12). Soil samples were collected and analyzed to further assess the extent of the other primary COPCs and to assist with the waste profiling of the generated soil waste before transportation and disposal at the permitted TSD facility, Chemical Waste Management's Subtitle C Landfill in Arlington, Oregon.

The soil generated during the soil removal action was classified based on the results of the previous subsurface investigations and interim remedial actions, and the pre-excavation soil profile action described in Section 4.2.4.1. Soil with concentrations of PCP and associated 2,3,7,8-TCDD generated during excavation and grading was designated with a waste code of F027. The waste code designation of F027 was listed on the uniform hazardous waste manifests for transport and disposal (Appendix K).

4.3.7.4 Results

This section summarizes the results of the interim action full-scale excavation at the Bulk Terminal Property. Analytical results for soil samples collected during the interim remedial action are presented on Figures 9B, 9C, 18, and 29 and are summarized in Tables 12, 14, and 16. Laboratory analytical reports are included as Appendix F.

In August through October 2012, SoundEarth conducted full-scale excavation field activities that included removing approximately 4,491 tons of contaminated soil and collecting 74 performance or confirmation soil samples. Four of the soil samples were analyzed for dioxins and furans, 47 were analyzed for TPH and BTEX, and 23 soil samples were analyzed for PCP. Sample results indicate that PCP and associated dioxins and furans in soil have been removed from the Site and are no longer COPCs at the Bulk Terminal Property. A summary of the analytical results for the interim action is provided below:

- PCP was below the applicable MTCA Method B cleanup levels in 12 of the 23 soil samples (Figure 9C).
- PCP exceeded the applicable MTCA Method B cleanup levels in 11 of the 23 soil samples (Figure 9C). All soil with PCP exceedances were removed and bounded by samples that met the points of compliance.
- 2,3,7,8-TCDD presented as TEQ for dioxins were below the applicable MTCA Method B cleanup levels in two of the four soil samples (Figure 19).
- 2,3,7,8-TCDD presented as TEQ for dioxins exceeding the applicable MTCA Method B cleanup levels, but were below the 2,3,7,8-TCDD background remediation level (Figure 19).

- 2,3,7,8-TCDD presented as TEQ for dioxins did not exceed the applicable MTCA Method C cleanup levels in any soil samples (Figure 28).
- GRPH was above applicable MTCA Method A cleanup levels in 20 of the 46 samples that were analyzed (Figure 29). The remaining 26 samples were below the applicable MTCA Method A cleanup levels. Samples that were removed are not shown on Figure 28.
- DRPH was above applicable MTCA Method A cleanup levels in 18 of the 46 samples that were analyzed (Figure 29). The remaining 28 samples were below the applicable MTCA Method A cleanup levels.
- ORPH was above applicable MTCA Method A cleanup levels in 3 of the 46 samples that were analyzed (Figure 29). The remaining 43 samples were below the applicable MTCA Method A cleanup levels.
- Benzene was above applicable MTCA Method A cleanup levels in 13 of the 46 samples that were analyzed (Figure 29). The remaining 33 samples were below the applicable MTCA Method A cleanup levels.
- Toluene was above applicable MTCA Method A cleanup levels in 4 of the 46 samples that were analyzed (Figure 29). The remaining 42 samples were below the applicable MTCA Method A cleanup levels.
- Ethylbenzene was above applicable MTCA Method A cleanup levels in 8 of the 46 samples that were analyzed (Figure 29). The remaining 38 samples were below the applicable MTCA Method A cleanup levels.
- Total xylenes were above applicable MTCA Method A cleanup levels in 9 of the 46 samples that were analyzed (Figure 29). The remaining 37 samples were below the applicable MTCA Method A cleanup levels.

Performance soil samples collected during the pre-excavation soil profile action were used as confirmation samples in many areas of the excavation due to the long laboratory analytical turnaround time and expense of the laboratory analyses for dioxins and furans. The results of 2,3,7,8-TCDD concentrations in the pre-excavation samples not addressed in the hot spot soil removal action ranged from 0.0282 to 2,860 in borings B202 and B213, respectively. The confirmation monitoring and sampling results were used to assess when the cleanup levels had been met at the defined points of compliance. The performance samples used as confirmation samples from the excavation are summarized in the Interim Action Progress Report: Full-Scale F027 Excavation (SoundEarth In Progress) and are shown on Figures 9B, 9C, and 19 and on Tables 3 and 16.

Statistical analysis was performed on 2,3,7,8-TCDD confirmation samples to confirm that cleanup standards for dioxins and furans in soil have been met. The 95 percent upper confidence limit (UCL) for the 2,3,7,8-TCDD confirmation soil samples results was calculated and compared to the Seattle area background remediation level of 46 ng/kg. The UCL was calculated in accordance with the Ecology's *Statistical Guidance for Ecology Site Managers* publication number 92-54 and dated August 1992 (Ecology 1992). To determine the preliminary applicable statistical test (parametric or non-parametric) to calculate the UCL, a test for normality was performed using Ecology's statistical analysis tool *MTCAStat 97 Module*. The data set contained

99 confirmation samples collected from the soil profile action and interim action excavations. There was no censored data. The data set was determined to be log-normally distributed using the D'Agostino test for normality. The UCL on the mean of the data was calculated using the Land's Method in accordance Ecology guidance. MTCAsat 97 Module calculated a one-sided 95 percent UCL for the dioxin data set of 3.79 ng/kg.

5.0 CONCEPTUAL SITE MODEL

A CSM identifies confirmed and suspected source areas of hazardous substances, primary release mechanisms for COPCs, affected media, transport mechanisms, fate of hazardous substances in the environment, environmental media of potential concern, and exposure pathways for potential receptors. The CSM is the basis for developing technically feasible cleanup alternatives from which a final cleanup action approach is selected. A CSM may be refined when additional information becomes available during the implementation of the feasibility study and cleanup action. A preliminary exposure assessment, based on a mixed zoning designation of industrial and commercial use, is presented on Figure 30. Figure 31 is a schematic drawing showing the CSM based on the preliminary exposure assessment.

This section presents the components of the CSM developed for the Site based on the completion of the remedial investigation conducted by SoundEarth and others. This section also includes a discussion of the confirmed and suspected source areas, affected media, contaminant fate and transport, and the preliminary exposure assessment.

5.1 CONFIRMED AND SUSPECTED SOURCE AREAS

A source area is the location of a release of a hazardous substance (i.e., PCP and TPH) that has affected one or more of the following at the Site: soil, surface water, groundwater, or air quality. The historical mechanical systems used for facility operations and processes, and unknown releases including spills and leaks are identified as confirmed and suspected sources of releases of hazardous substances. The source areas are listed below:

- Former Rail Spurs
- Former underground distribution pipelines
- Former 14 ASTs located in the area of the Upper and Lower Tank Yards
- Former PCP Mixing AST
- Former stormwater influent sump area
- Former open trench area
- Former manifold pit
- Former pump shed area
- Former underground storage tanks
- Former Overhead Fuel Loading Racks
- Former pump island
- Former Pipeline Utilidor

- Former Barrel Inclines
- Former Barreling Sheds

Confirmed and suspected source areas for the Site are located in the vicinity of the historical mechanical systems and where the highest concentrations of COPCs are present at the Site.

5.2 AFFECTED ENVIRONMENTAL MEDIA

The affected environmental media consists of soil and groundwater with COPCs that were detected at concentrations exceeding their respective preliminary cleanup levels. Soil vapor and outdoor air has been retained as a medium of potential concern based on concentrations of TPH in soil and groundwater. The cleanup of the affected soil and groundwater is expected to result in the elimination of soil vapor and outdoor air as a future medium of concern for the Site. Based on the findings of the remedial investigation, the primary COPCs at the Site is TPH and PCP (groundwater only). Concentrations of secondary COPCs are encompassed by the larger TPH plumes (Figures 32A through 32D). Secondary COPCs identified for the Site include the following:

- Lead in soil
- PAHs in soil
- Naphthalene, 1-methyl-naphthalene, and 2-methyl-naphthalene in soil.

5.3 CONTAMINANT FATE AND TRANSPORT OF COPCS IN AFFECTED ENVIRONMENTAL MEDIA

Fate and transport of COPCs in affected environmental media are dependent on the physical and chemical properties of the COPC and the geochemical and hydraulic properties of the subsurface environment. Contaminants may exist in four phases in a subsurface environment from a release of a hazardous substance. The four phases include: free-phase (nonaqueous-phase liquid [LNAPL]), sorbed-phase (adsorbed to organics or clay soil particles), aqueous-phase (dissolved in water) and gaseous-phase (volatilization from soil or water to air). Commonly, contaminants exist in multiple phases with some degree of partitioning between phases. The contaminant phase depends not only on the properties of the COPC and the site-specific geological properties, but also on the magnitude and extent of release. The physical and chemical properties that control the fate and transport of COPCs include specific gravity, solubility, vapor pressure, Henry's Law constant, and the octanol-water partition coefficient.

5.3.1 Physical and Chemical Properties Affecting Fate and Transport

Specific gravity (SG) is a dimensionless number relating the density of a compound to the density of water. Density is the ratio of mass to volume and is a predictor of whether the compound will sink or float in the subsurface. Compounds that are less dense than water (SG less than 1) will tend to float and the free-phase will create a layer of LNAPL. Conversely, compounds that have a SG greater than 1 will tend to sink and collect as dense nonaqueous-phase liquid.

Solubility is a measure of the extent to which a compound dissolves in water and is defined as the maximum concentration of the compound that will dissolve in water at a given temperature. A compound with high water solubility would be expected to exist at higher aqueous-phase concentrations than a compound with low water solubility. For example, gasoline may exist as free-phase or LNAPL layer because of its limited water solubility, while miscible (i.e., capable of being and remaining soluble in water) compounds such as methanol would not form a LNAPL

layer. The solubility of a chemical compound is a function of attractive forces between the solute and water and the size and shape of the molecule. Solubility is inversely proportional to molar volume. The presence of functional groups (e.g. halogens) decreases the chemical compounds water solubility.

The vapor pressure (P_v) is a measure of the pressure exerted by the compound on the atmosphere and is an indication of volatility or the transfer of the compound from the liquid to the gaseous phase. Henry's Law constant (H) is the best indicator of a chemical's propensity to volatilize from water. Henry's law constant is the ratio of a compound's concentration in air to the concentration in water, or the ratio of vapor pressure to solubility. The potential for volatilization from water increases with increasing vapor pressure and decreases with increasing water solubility. However, compounds with low vapor pressures may have a tendency to volatilize if the water solubility is sufficiently low.

A sample set of ranges of Henry's Law constants from Watts 1998 and what the ranges indicate is provided herein. A Henry's Law number less than 10^{-7} atmosphere-cubic meters/mole would indicate that a pollutant is less volatile than water or a pollutant concentration may increase. A Henry's Law constant between approximately 3×10^{-7} to 2×10^{-5} atmosphere-cubic meters/mole could indicate that a pollutant tends to partition into water where the transfer is gaseous-phase controlled, a pollutant may volatilize slowly, or volatilization may be significant in shallow rivers. A range of 2×10^{-5} to 10^{-2} atmosphere-cubic meters/mole could indicate that volatilization of pollutants may not be rapid but will possibly be significant, volatilization of pollutants may be significant in all water, or the liquid phase may control pollutant volatilization.

Sorption is primarily driven by the hydrophobicity of a chemical compound. The octanol-water partition coefficient (K_{ow} , unitless) is an effective indicator of hydrophobic partitioning and an important predictor of a compounds behavior in the environment. K_{ow} has been correlated to bioaccumulation, toxicity, and tendency to sorb to soil organic matter and clay. K_{ow} is usually reported as $\log K_{ow}$ because values range from 0.001 to over 10^8 . Generally, the higher the $\log K_{ow}$, the more hydrophobic the compound is and the greater the tendency for the chemical to be sorbed to soil rather than dissolved in water.

In addition, geochemical parameters, such as the amount of soil organic matter, clay, and metals and their oxidation states, also impact the fate and transport of contaminants in the subsurface environment. Examples include:

- Soils with more organic matter and clay content are more likely to cause contaminants to adsorb.
- Ferrous iron (Fe[II]) present in soils serves as a very important abiotic reductant that can reduce a wide variety of organic pollutants.

5.3.2 Contaminant Fate

Once a released COPC is present in the environment, each phase is subject to abiotic and/or biotic transformation processes. Abiotic transformation processes include hydrolysis, oxidation-reduction reactions by soil minerals, and elimination reactions. Hydrolysis is the addition of hydrogen and hydroxyl ions of water to a molecule which causes the compound to split into simpler molecules which are easily biodegraded. Iron oxides present in the soil can serve as a reductant and reduce oxidized organics. Generally, abiotic degradation plays a limited role in

degradation compared to the biologically mediated degradation of organic compounds. Biotic transformation processes are oxidation-reduction reactions mediated by microorganisms. Microorganisms present in the subsurface have the capacity to oxidize reduced compounds (petroleum hydrocarbons) and/or reduce oxidized compounds (chlorinated hydrocarbons and phenols), thereby degrading the contaminants.

5.3.3 Contaminant Transport

Contaminant transport is the processes by which COPCs move through porous soil media. The principal transport mechanisms for COPCs in affected environmental media include advection, dispersion, diffusion, and adsorption. Advection is the process by which moving water carries dissolved-phase contaminants or air transports vapor-phase contaminants through porous media. Typically, advection is the primary transport mechanism for contaminant mass to move in groundwater. Mechanical dispersion is the different flow paths that contaminants take through porous media and it is a result of the advection and dispersion of water or air. Dispersion and the direction of flow is controlled by the permeability of soil media and pressure gradients. Mechanical dispersion may dilute contamination by mixing with non-contaminated water or air.

Diffusion is the process where contamination in water or air moves from areas of higher concentration to areas of lower concentration. Initially, contamination travels through the porous soil media where the permeability is highest. Over time, the contamination may diffuse into low permeability areas based on proximity, pore openings, and relatively lower concentrations of COPCs. It is possible for the COPCs to move through a porous media by diffusion even if the water and air is not moving. When water or air is moving very slowly, diffusion may become the primary transport process. Adsorption occurs when dissolved-phase contaminants interact with soil with high organic matter or clay particles and temporarily adsorb on the surface of the soil. Adsorption is caused by an imbalance in electrical charge in the soil particles which may be satisfied by adsorbing a charged ion from dissolved-phase contamination. This process results in the retardation of the contamination.

5.4 CHEMICAL SPECIFIC FATE AND TRANSPORT

The contaminant fate and transport of COPCs in affected environmental media is dependent on the physical and chemical properties of individual components, such as specific gravity, solubility, vapor pressure, Henry's Law constant, and sorption. The chemical-specific fate and transport of the primary COPCs at the Bulk Terminal Property are discussed below.

5.4.1 Petroleum Hydrocarbons

In general, petroleum hydrocarbons with lower carbon numbers (e.g., GRPH and BTEX) are more soluble, and have lower $\log K_{ow}$ values and higher vapor pressures than petroleum hydrocarbons with higher carbon numbers (e.g., DRPH and ORPH). Therefore, GRPH and BTEX are more mobile, have less affinity to sorb to soil organic matter, are more likely to exist in vapor form, and are more easily biodegraded than heavy fuel fraction. For example, benzene is moderately water soluble (1,770 mg/L), tends to rapidly volatilize from water ($H = 5.48 \times 10^{-3}$), is quite hydrophobic and will sorb to soil ($\log K_{ow} = 2.05$). Dodecane (a 12 carbon compound in DRPH) is nearly insoluble in water ($S = 0.008$ mg/L), may volatilize from water ($H = 24.2$), but not as free-phase ($P_v = 0.3$ mm Hg), and will strongly sorb to soil ($\log K_{ow} = 6.44$).

Biodegradation of TPH in groundwater is dependent on the oxidation-reduction conditions of the groundwater, which is a function of the presence or absence of electron acceptors that support biologically mediated degradation. Biologically mediated oxidation of TPH occurs most effectively under aerobic conditions. Aerobic metabolism occurs when microorganisms transfer electrons from the electron donor (TPH) to an electron acceptor (O_2) in order to gain energy. O_2 is the most energetically favored electron acceptor followed by nitrate (NO_3^-), manganese or ferric oxides (MnO_2), sulfate (SO_4^{2-}) and carbon dioxide (CO_2 , methanogenesis). Aerobic metabolism tends to be the quickest form of biodegradation of TPH. Biodegradation occurs when the contaminants are in the dissolved-phase in groundwater or in the capillary fringe. TPH biodegrades at faster rates under aerobic conditions, which are typically found at dissolved-phase plume boundaries. Aerobic biodegradation occurs first in the source area, depleting oxygen levels and creating a predominantly anaerobic environment.

The results from this remedial investigation indicate the presence of DRPH, ORPH, GRPH, and BTEX in soil beneath the Site. The remedial investigation conducted by SoundEarth and historical investigations conducted by others at the Site have demonstrated the following:

- The highest concentration of DRPH remaining in soil was detected at a concentration of 33,900 mg/kg in 01SB08 approximately 12.5 feet bgs beneath the Former Overhead Fuel Loading Racks and near the Pipeline Utilidor (Figure 7A). Concentrations of DRPH in soil are present at approximately 0.5 to 25 feet bgs across the Site in the vicinity of source areas.
- The highest concentration of ORPH remaining in soil was detected at a concentration of 7,730 mg/kg in SB-31 approximately 2 feet bgs near the former barrel incline on the ASKO Hydraulic Property (Figure 7A). Concentrations of ORPH in soil are present at approximately 1 to 2 feet bgs across the Site in the vicinity of source areas.
- The highest concentration of GRPH remaining in soil was detected at a concentration of 755,000 mg/kg in 01SB09 approximately 12.5 feet bgs beneath the former pump island (Figure 8B). Concentrations of GRPH in soil are present at approximately 1 to 20 feet bgs across the Site in the vicinity of source areas. The GRPH concentration of 755,000 mg/kg indicates LNAPL was present in the soil sample.
- The highest concentration of benzene remaining in soil was detected at a concentration of 5,590 mg/kg in 01SB09 approximately 12.5 feet bgs beneath the former pump island (Figure 8B). Concentrations of benzene in soil are present at approximately 0.5 to 20 feet bgs across the Site in the vicinity of source areas.
- The lateral extent of TPH as LNAPL covers an area of approximately 21,500 square feet in the Bulk Terminal Property and associated West Commodore Way ROW (Figure 27). The maximum thickness of LNAPL measured in a monitoring well was 5.27 feet in well 01MW10 during the Second Quarter 2011 monitoring event (Table 7).
- The highest concentrations of TPH and/or BTEX in groundwater are present in the shallow water-bearing zone near the former underground distribution pipelines,

former ASTs and USTs, former manifold pit, former loading racks, and former pipeline utilidor.

The principal fate and transport mechanisms for TPH and BTEX in affected environmental media are summarized below:

- The lateral distribution of concentrations of TPH and BTEX in soil is a result of transport via adsorption of the soil matrix and direct contact of LNAPL.
- Surface erosion may transport contaminated soil to surface water. The direct contact of contaminated soil with surface water and groundwater may result in soil to water partitioning via leaching.
- The lateral distribution of concentrations of TPH and BTEX in groundwater is a result of direct contact with historical releases of LNAPL and associated LNAPL to water partitioning, and leaching of adsorbed-phase petroleum-contaminated soil via soil-to-water partitioning, and the natural attenuation processes, such as advection/dispersion, diffusion, sorption, and biodegradation.
- Natural mechanisms, including temperature, groundwater, and barometric pressure fluctuations, may result in the volatilization of TPH and BTEX in soil and groundwater to soil vapor via soil and/or groundwater to air partitioning. Soil vapor with concentrations of TPH and BTEX may transport to the surface with barometric pressure fluctuations.

5.4.2 Pentachlorophenol

The environmental fate for PCP in groundwater is similar to that of TPH, but is limited by the low water solubility of PCP. PCP has a high log K_{ow} and tends to sorb to soil. Once sorbed, PCP is unavailable for biodegradation. The low water solubility ($S=14$ mg/L) and moderate vapor pressure (1.4×10^{-4} millimeters mercury @ 20 degrees Celsius) yield a low Henry's Law constant of 3.4×10^{-6} which indicates that PCP volatilizes very slowly. A log K_{ow} of 4.41 suggests PCP by itself is relatively immobile in the subsurface environment.

Environmental pH is an important parameter affecting the adsorption and mobility of chlorinated phenols. PCP sorption to clay has been observed to decrease with increasing pH.

PCP is a highly oxidized compound that can be biodegraded aerobically and anaerobically through pathways that include methylation, acylation, dechlorination and hydroxylation. In addition, the PCP has been observed to degrade via a reductive dechlorination pathway under anaerobic conditions. During reductive dechlorination, bacteria gain energy by transferring electrons from an electron donor (H_2) to an electron acceptor (PCP). The chlorine atoms of PCP are sequentially replaced with hydrogen atoms.

The remedial investigation conducted by SoundEarth and historical investigations conducted by others at the Site have demonstrated the following:

- The highest concentration of PCP remaining in shallow groundwater after the 2012 interim remedial action was detected at a concentration of 2.1 $\mu\text{g/L}$ in M5IW01 in January 2013 (Table 8). Additional detections of PCP in groundwater above the MTCA Method B cleanup level after October 2012 were observed in wells 01MW69, 01MW74, A6IW01, and LWIW01 (Table 8). Detections of PCP in groundwater remain

largely downgradient of the former PCP mixing area and/or near the associated interim remedial action excavation area described in Section 4.3.4.

- The interim actions performed at the Bulk Terminal Property have removed the PCP-contaminated soil at the Site.

The principal fate and transport mechanisms for PCP in affected environmental media are summarized below:

- The lateral distribution of concentrations of PCP in soil is a result of transport via adsorption of the soil matrix. No residual contamination (adsorbed-phase PCP contamination on soil particles) remains at the Site based on the results from the 2012 interim action.
- The low volatility of PCP precludes it from being present in the vapor phase (in soil vapor).
- The remaining transport mechanism is the aqueous phase (contaminants dissolved in groundwater). Subsurface contamination by PCP is controlled by the natural attenuation processes, such as advection/dispersion, diffusion, and biodegradation.

5.5 PRELIMINARY EXPOSURE ASSESSMENT

The preliminary exposure assessment identifies potential receptors for exposure pathways for environmental media of potential concern from contaminant fate and transport mechanisms. Potential receptors at risk from exposure associated with the presence of COPCs at the Site are human and ecological receptors. The two potential receptors were segregated into subcategories to better identify the potential receptors at risk of exposure from the presence of COPCs in environmental media of potential concern. The subcategories for human health include workers, recreational use, drinking water consumption, and fish and shellfish consumption; the subcategories for ecological include terrestrial and aquatic biota.

The objective of the preliminary exposure assessment is to assess the completeness of exposure pathways from environmental media of potential concern and associated contaminant fate and transport mechanisms for the potential receptors for the Site. The results from the preliminary exposure assessment will assist with the evaluation of potential feasible cleanup alternatives that are protective of the potential receptors identified as complete. The preliminary exposure assessment for the Site is illustrated in a flow diagram (Figure 30). The preliminary exposure assessment for each exposure pathway and associated environmental media of potential concern is summarized below by affected environmental media.

5.5.1 Soil

Soil with concentrations of COPCs above the preliminary cleanup levels may present a potential exposure pathway to human and/or ecological receptors. The principal contaminant fate and transport mechanisms for soil at the Site include sorption, volatilization, erosion, leaching, partitioning, advection, dispersion, and diffusion, biodegradation (Figure 30). Leaching of TPH and BTEX from soil by dissolution and desorption to groundwater is discussed below. The exposure pathway for soil at the Site includes direct contact with soil, volatilization to soil vapor/outdoor air, soil erosion and soil to leaching to surface water, soil leaching to

groundwater, and LNAPL associated with soil partitioning to groundwater. The human consumption of drinking water is not an applicable potential receptor for the exposure pathway for soil at the Site. The potential exposure pathways for soil are discussed in the sections below.

5.5.1.1 Direct Contact (Dermal Contact and Ingestion) with Subsurface Adsorbed-Phase Contaminated Soil

This exposure pathway is complete for subsurface soil via dermal contact or ingestion for COPCs at the Site. The standard point of compliance for the direct contact exposure pathway for soil is 15 feet bgs for human health and 6 feet bgs for terrestrial receptors. A depth of 15 feet bgs is a reasonable depth that could be excavated during normal redevelopment activities and distributed at the ground surface (WAC 173-340-[6][d] and WAC 173-340-7490[4][b]). COPCs above the preliminary cleanup levels are present in shallow subsurface soil within 6 feet bgs at the Site in areas that are unpaved. Although the unpaved areas are surrounded by a permanent fence and covered with 6 inches of quarry spall, which has minimized the exposure risk for workers, additional controls to mitigate the potential exposure pathway will be required. Most terrestrial receptors are not at risk for direct contact of surface soil due to quarry spall ground cover; however, the direct contact pathway for subsurface soil is complete for terrestrial receptors such as burrowing mammals.

5.5.1.2 Inhalation of Soil Vapor/Outdoor Air

This exposure pathway is considered complete for worker and terrestrial receptors by potential inhalation of volatile COPCs originating in the vadose zone and ambient air. The air-filled pore space between soil grains in the unsaturated zone, or partially saturated zone, is referred to as soil gas or soil vapor. Low molecular weight aromatic and aliphatic TPH fractions are highly volatile due to their relative low vapor pressures. The volatilization of TPH fractions from LNAPL, and adsorbed-phase contaminated soil can accumulate the concentrations of TPH in soil vapor and migrate to the surface to locally impact outdoor air quality near the unpaved surfaces. Once in the atmosphere, the vapors are unlikely to result in an exposure pathway to the general public due to the vapors being dispersed and/or degraded.

5.5.1.3 Direct Contact with Surface Water

Surface water (stormwater) that comes in contact with TPH in near surface soil located below the quarry spall cover in unpaved areas at the Site are potentially susceptible to leaching/partitioning via dissolution and desorption. The exposure pathway could be complete for workers and terrestrial receptors for TPH in surface water runoff. The interim remedial actions completed in 2011 and 2012 to remediate sources of PCP resulted in removing near surface soil with concentrations of PCP from the Site and the potential exposure pathway of soil leaching to surface water. Therefore, this exposure pathway is incomplete for PCP.

5.5.2 Groundwater

Groundwater has been affected by historical releases of COPCs to the surface and subsurface and the leaching of LNAPL directly into the shallow water-bearing zone and the leaching of TPH and PCP into infiltrating surface water that passes through unsaturated adsorbed-phase soil and migrates to groundwater. Groundwater with concentrations of TPH and PCP above the preliminary cleanup levels may present a potential risk to human and/or ecological receptors. The primary contaminant fate and transport mechanism for groundwater at the Site include leaching via dissolution and desorption, advection/dispersion, diffusion, and volatilization

(Figure 30). Other contaminant fate and transport processes, such as biodegradation and oxidation or reduction, are expected to have minor to no influences in reducing potential exposures of COPCs to receptors without active source treatment. The biodegradation and oxidation or reduction processes appear to be occurring at a naturally slow rate to significantly contribute to the fate and transport processes of COPCs for the Site. The potential exposure pathways for groundwater are discussed below.

5.5.2.1 Direct Contact with Dissolved-Phase Contaminated Surface Water

Groundwater has been affected by historical releases of COPCs to the surface and subsurface and the leaching of LNAPL directly into the shallow water-bearing zone and the leaching of TPH and PCP into infiltrating surface water that passes through unsaturated adsorbed-phase soil and migrates to groundwater. Groundwater with concentrations of TPH and PCP above the preliminary cleanup levels may present a potential risk to human and/or ecological receptors. The primary contaminant fate and transport mechanism for groundwater at the Site include leaching via dissolution and desorption, advection/dispersion, diffusion, and volatilization (Figure 30). Other contaminant fate and transport processes, such as biodegradation and oxidation or reduction, are expected to have minor to no influences in reducing potential exposures of COPCs to receptors without active source treatment. The biodegradation and oxidation or reduction processes appear to be occurring at a naturally slow rate to significantly contribute to the fate and transport processes of COPCs for the Site. The potential exposure pathways for groundwater are discussed below.

5.5.2.2 Direct Contact with Dissolved-Phase Contaminated Shallow Water-Bearing Zone

This exposure pathway is considered complete for workers and could be complete for drinking water for TPH and PCP based on results from performance groundwater sampling that indicate detectable concentrations of TPH and PCP exceeding the preliminary cleanup levels are present in the shallow water-bearing zone. Workers may come into direct contact with the shallow groundwater at the Site during environmental or development work. It is unlikely that water beneath the Site would be used for drinking water because of the availability of municipal water supplies and land use of the Site; however, there is potential that future land use could allow for use of groundwater beneath the Site for drinking water. The exposure pathway is incomplete for human recreational users, fish and shellfish consumption, terrestrial organisms, and aquatic biota because these receptors do not have contact with groundwater.

5.5.2.3 Direct Contact with Dissolved-Phase Contaminated Intermediate Water-Bearing Zone

This exposure pathway could be complete for workers and drinking water for COPCs; however, these potential receptors are unlikely. The COPCs released to the subsurface typically adsorbed to unsaturated soil with high total organic carbon content located within the vadose zone and/or migrate laterally when dissolved in groundwater. The vertical migration of COPCs from the shallow water-bearing zone through the semi-confining to confining silt and clay layer that separates the shallow and intermediate water-bearing zones is unlikely based on the chemical properties of the COPCs such as molecular weight. Workers could come into direct contact with the intermediate water-bearing zone during environmental or development work. It is unlikely that water beneath the Site would be used for drinking water because of the availability of municipal water supplies and land use of the Site; however, there is potential that future land use could allow for use of groundwater beneath the Site for drinking water. The exposure

pathway is incomplete for human recreational users, fish and shellfish consumption, terrestrial organisms, and aquatic biota because these receptors do not have contact with groundwater.

5.5.2.4 Inhalation of Vapors from the Dissolved-Phase Contamination in the Shallow Water-Bearing Zone

This exposure pathway is considered complete for workers and could be complete for drinking water consumption because light-range TPH fractions are readily volatile. PCP has low volatility, so this exposure pathway is incomplete for PCP. It is unlikely that water beneath the Site would be used for drinking water because of the availability of municipal water supplies and land use of the Site; however, there is potential that future land use could allow for use of groundwater beneath the Site for drinking water. The exposure pathway is incomplete for recreational users, fish and shellfish consumption, terrestrial organisms, and aquatic biota because these receptors do not have contact with groundwater.

5.5.2.5 Inhalation of Vapors from the Dissolved-Phase Contamination in the Intermediate Water-Bearing Zone

This exposure pathway could be complete for workers and drinking water, but the potential receptor is unlikely. It is unlikely that water beneath the Site would be used for drinking water because of the availability of municipal water supplies and land use of the Site; however, there is potential that future land use could allow for use of groundwater beneath the Site for drinking water. The exposure pathway is incomplete for recreational users, fish and shellfish consumption, terrestrial organisms, and aquatic biota because these receptors do not have contact with groundwater.

5.5.2.6 Inhalation of Soil Vapor/Outdoor Air

The fate and transport mechanism for this exposure pathway is volatilization of COPCs in groundwater to the vadose zone and outdoor air with subsequent inhalation by potential receptors. This exposure pathway is considered complete for workers and terrestrial receptors. The exposure pathway is incomplete for recreational use because the unpaved portions of the Site cannot be accessed by the general public. The exposure pathway is considered incomplete for fish and shellfish and drinking water consumption and for aquatic biota.

5.6 TERRESTRIAL ECOLOGICAL EVALUATION

As specified in WAC 173-340-7490, a Terrestrial Ecological Evaluation (TEE) is required for any site where a release of a hazardous substance has been confirmed. The regulation requires that one of the following actions be taken:

- Document an exclusion from any further TEE using the criteria presented in WAC 173-340-7491.
- Conduct a simplified TEE in accordance with WAC 173-340-7492.
- Conduct a site-specific TEE in accordance with WAC 173-340-7493.

The Bulk Terminal Property does not qualify for a TEE exclusion under the criteria set forth in WAC 173-340-7491(2)(a)(ii), and a site-specific TEE will be conducted in accordance with WAC 173-340-7493 under consultation from Ecology in accordance with WAC 173-340-7493(1)(c).

6.0 PLANNED WORK

The information collected during the remedial investigation is sufficient to provide a CSM and meets the specific MTCA requirements in WAC 173-340-350. As such, a Feasibility Study has been prepared for the Bulk Terminal Property that presents and evaluates feasible cleanup alternatives for the Bulk Terminal Property in accordance with WAC 173-340-360 through 173-340-390.

7.0 BIBLIOGRAPHY

Aerial photographs of the Property and Adjoining Areas for the years 1936, 1946, 1953, 1961, 1965, 1970, 1978, 1985, 1989, 1995, and 2001. Reviewed at the University of Washington Map Library, Seattle, Washington.

Aerial Photographs of the Property and Adjoining Areas for the year 1929. Reviewed at Seattle Public Utilities Engineering Records Vault, Seattle, Washington.

Alvarez, J.J and Walter A. Illman. 2006. *Bioremediation and Natural Attenuation: Process Fundamentals and Mathematical Models*. John Wiley & Sons, Hoboken, NJ.

Anchor QEA. 2012. *Supplemental Remedial Investigation Report DRAFT East Waterway Operable Unit SRI/FS*. March.

Baist's Atlases of Seattle, Washington, for the years 1905, 1908, and 1912.

Booth, Derek B., Kathy Goetz Troost, and Scott A. Shimel (Booth et al.). 2005. *Geologic Map of Northwestern Seattle (Part of the Seattle North 7.5' X 15' Quadrangle), King County, Washington*. U.S. Geological Survey Scientific Investigations Map 2903.

City of Seattle Department of Planning and Development (DPD). 2013a. Seattle's Industrial Zones reviewed online at the City of Seattle Department of Planning and Development Website <http://www.seattle.gov/dpd/cms/groups/pan/@pan/documents/web_informational/dpds021569.pdf>. October.

_____. 2013b. Environmentally Critical Areas reviewed online at the City of Seattle Department of Planning and Development Website <<http://www.seattle.gov/dpd/toolsresources/Map/default.htm>>.

Coduto, Donald P. 1999. *Geotechnical Engineering*. Prentice-Hall, Inc., Upper Saddle River, NJ.

Converse Davis Dixon Associates, Inc. 1976. *Report of Geotechnical Exploration, North Truck Sewer – Rehab IV, Seattle, Washington*. Reviewed at the King County Transportation and Natural Resources Library. June 14.

Environmental Data Resources Inc. (EDR). 2008. *The EDR—City Directory Abstract, 2737 W. Commodore Way, Seattle, WA 98199*. (References R.L. Polk Co., Cole Information Services, and others). September 15.

- _____. 2010. *Certified Sanborn® Map Report, TOC Seattle Terminal 2737 W. Commodore Way, Seattle, WA 98199*. (References Sanborn Fire Insurance Maps). April 29.
- Esposito, M.P., T.O. Tiernan, and Forrest E. Dryden (Esposito et al.). 1980. *Dioxins*. Publication EPA-600/2-80-197. November.
- Floyd Snider McCarthy. 2003. *North BINMIC Hydrogeologic and Environmental Settings Report, Ballard Interbay North Manufacturing Industrial Center USEPA Brownfields Pilot Project*. August.
- Foster Wheeler Environmental Corporation (Foster Wheeler). 2000. *Environmental Site Assessment: Phase I at 2737 West Commodore Way, Seattle, Washington*. August 25.
- _____. 2001. *Phase III Environmental Site Assessment, 2737 and 2750 West Commodore Way Properties, Seattle, Washington*. December.
- _____. 2002a. Letter Regarding Rapid Response Soil Excavation at the Western edge of Parking Area, located at 2737 West Commodore Way. From Bryan Graham, Project Manager at Foster Wheeler. To Scott B. Sloan at Time Oil Company. August 23.
- _____. 2002b. *Final Limited Soil Removal Report at the Former PCP/Diesel Mixing Area at 2737 West Commodore Way, Seattle, Washington*. December 18.
- _____. 2003. *Final Cleanup Action Plan for Petroleum-Impacted Soil and Groundwater, 2737 West Commodore Way, Seattle, Washington*. May.
- Freeze, Allan and John A. Cherry (Freeze and Cherry). 1979. *Groundwater*. Prentice-Hall, Inc., Englewood, Cliffs, NJ.
- Galster, R.W and W.T. Laprade (Galster and Laprade). 1991. "Geology of Seattle, Washington, United States of America." *Bulletin of the Association of Engineering Geologists*" v 28 (no. 3): p 235–302.
- Geo-Recon International Ltd. 2009. Letter Regarding Results of Ground Penetrating Radar Survey. From Geo-Recon International Ltd. To Sound Environmental Strategies Corporation. July 22.
- Harvey R. Dodd and Associates. 1982. Reviewed In-House. Pollution Control Facilities, Drawing No. 1. Prepared for Time Oil Co. October 27.
- IDcide. 2013. Weather data. Reviewed online at <http://www.idcide.com/weather/index.htm>.
- King County Assessor. 2009. Historical Appraisal Records for the Property and Adjacent Parcels. Obtained from Puget Sound Regional Archives, Bellevue College, Bellevue, Washington. December.
- _____. 2013. Assessor Property Characteristics Reports for Parcel Number 112503-9120 and 112503-9068. Reviewed online at the King County GIS Center Website <<http://www5.kingcounty.gov/kcgisreports>>.

Kroll Map Company. (no date). Historical Kroll Atlases of the East Waterfront Property and Adjoining Areas for the years 1920, 1924, 1930, 1950, 1966, and 1977.

Landau Associates, Inc. 2005. *Annual Event/Fourth Quarter 2005 Groundwater Monitoring Event, Site # 01-600, Seattle, Washington*. December 20.

Morissette, H.E (Morissette). 1967. Letter Regarding GSA bid for 55,250 5-gal. pails of Wood Preservative going to Viet Nam. From H.E. Morissette. To J.W. Barnet with Time Oil Company in Seattle, Washington; Newton Lesh with Time Oil Company in Portland, Oregon; George Mills, J.M. Montgomery, R.M. Morriss, Dick Miller, C.F. Grafton, and H. Struessel. July.

Municipality of Metropolitan Seattle. 1989. *Fort Lawton Parallel Tunnel Project, Contract w/F16-89, Part E – Geotechnical Report, Vol. 4*. October.

The Puget Sound Clean Air Agency and the University of Washington (PSCAA). 2010. Tacoma and Seattle Area Air Toxics Evaluation. October.

Salanitro, Joseph. 1993. "The Role of Bioattenuation in Management of Aromatic Hydrocarbon Plumes in Aquifers." *Groundwater Monitoring and Review*. Fall. pp 150–160.

Sound Environmental Strategies Corporation (SES). 2009. *Operation and Maintenance Manual for Stormwater Pretreatment System, TOC Holdings Facility No. 01-600, 2737 West Commodore Way, Seattle, Washington*. May 21.

_____. 2010. *Remedial Investigation Summary, Seattle Terminal Properties, TOC Holdings Facility No. 01-600, 2737, 2750, 2800, and 2805 West Commodore Way, Seattle, Washington*. May 12.

SoundEarth Strategies, Inc. (SoundEarth). *Full-Scale F027 Excavation Interim Remedial Action, Seattle Terminal Properties, TOC Holdings Facility No. 01-600, 2737 West Commodore Way, Seattle, Washington*. In Progress.

Tetra Tech FW, Inc. (Tetra Tech). 2003. Letter Regarding Results of Ground Penetrating Radar and Electromagnetic Survey for Time Oil Company at 2737 West Commodore Way, Seattle, Washington. From Bryan S. Graham, Project Manager at Tetra Tech FW, Inc. To Scott B. Sloan at Time Oil Company. September 17.

_____. 2004. *Final Quarterly Groundwater Sampling Report for July 2004 at 2737 West Commodore Way and 2750 West Commodore Way, Seattle, Washington*. November.

_____. 2005. *Draft Quarterly Groundwater Sampling Report for November 2004 at 2737 West Commodore Way and 2750 West Commodore Way, Seattle, Washington*. March.

Time Oil Co. 1991. Letter Regarding Underground Storage Tank Site Check/Site Assessment at Seattle Terminal, 2737 West Commodore Way, Seattle, WA – Property No. 01-228. From Liam J. Russell, Geologist with Time Oil Co. To Joe Hickey with Washington State Department of Ecology. December 30.

U.S. Appraisal Co. 1957. *Valuation Report, Time Oil Company, Washington, Bulk Plants*. September.

- U.S. Geological Survey (USGS). 2011. Shilshole Bay Quadrangle, Washington, 7.5-Minute Series.
- Vaccaro, J.J., Arnold J. Hansen Jr., and M.A. Jones (Vaccaro et al.). 1998. *Hydrogeologic Framework for the Puget Sound Aquifer System, Washington and British Columbia*. USGS Professional Paper 1424-D.
- Waitt Jr., Richard B. and Robert M. Thorson (Waitt Jr. and Thorson). 1983. "The Cordilleran Ice Sheet in Washington, Idaho, and Montana." IN: H.E. Wright, Jr., (ed.), 1983, *Late-Quaternary Environments of the United States, Volume 1: The Late Pleistocene* (Stephen C. Porter [ed.]): University of Minnesota Press. Chapter 3, p.53–70.
- Watts, R.J. 1998 *Hazardous Wastes: Sources, Pathways, Receptors*. John Wiley & Sons, New York.
- Washington State Department of Ecology (Ecology). 1991. *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*. Underground Storage Tank Program. Publication No. 90-52. February.
- _____. 1992. *Statistical Guidance for Ecology Site Managers*. Publication No. 92-54. August.
- _____. 1995. *Guidance for Remediation of Petroleum Contaminated Soils*. Publication No. 91-30. November.
- _____. 1998. *Washington State Dioxin Source Assessment*. Publication No. 98-320. July.
- _____. 1999. *Final Report, Screening Survey for Metals and Dioxins in Fertilizer Products and Soils in Washington State*. Ecology Publication No. 99-309. April.
- _____. 2000. *Saltwater Intrusion in Salmon Bay and Lake Union Sediments*. August.
- _____. 2003. Email Message Regarding Time Oil DPE Cleanup Action Plan. From Jerome Cruz. To Scott Sloan. August 4.
- _____. 2007. *Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures Using Toxicity Equivalency Factors*. Model Toxics Control Act Cleanup Regulation, Cleanup Levels and Risk Calculations Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>. (New Rule Adopted November 12).
- _____. 2008a. *Guidelines for Property Cleanups under the Voluntary Cleanup Program*. Toxics Cleanup Program Publication No. 08-09-044. July.
- _____. 2008b. Email Message Regarding TOC Holdings Co., Seattle Bulk Terminal Stormwater – Listed Waste Designation. From Dean Yasuda, P.E., Environmental Engineer. To Mark Selman and Mark Chandler. July 24.
- _____. 2009. *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*. October.

_____. 2011. *Urban Seattle Area Soil Dioxin and PAH Concentration Initial Summary Report*. Pub. No. 11-09-049. <<https://fortress.wa.gov/ecy/publications/publications/1109049.pdf>>. September.

Western Regional Climate Center. 2013. Reviewed online at Western Regional Climate Center Website <www.wrcc.dri.edu/htmlfiles/westwinddir.html> July.

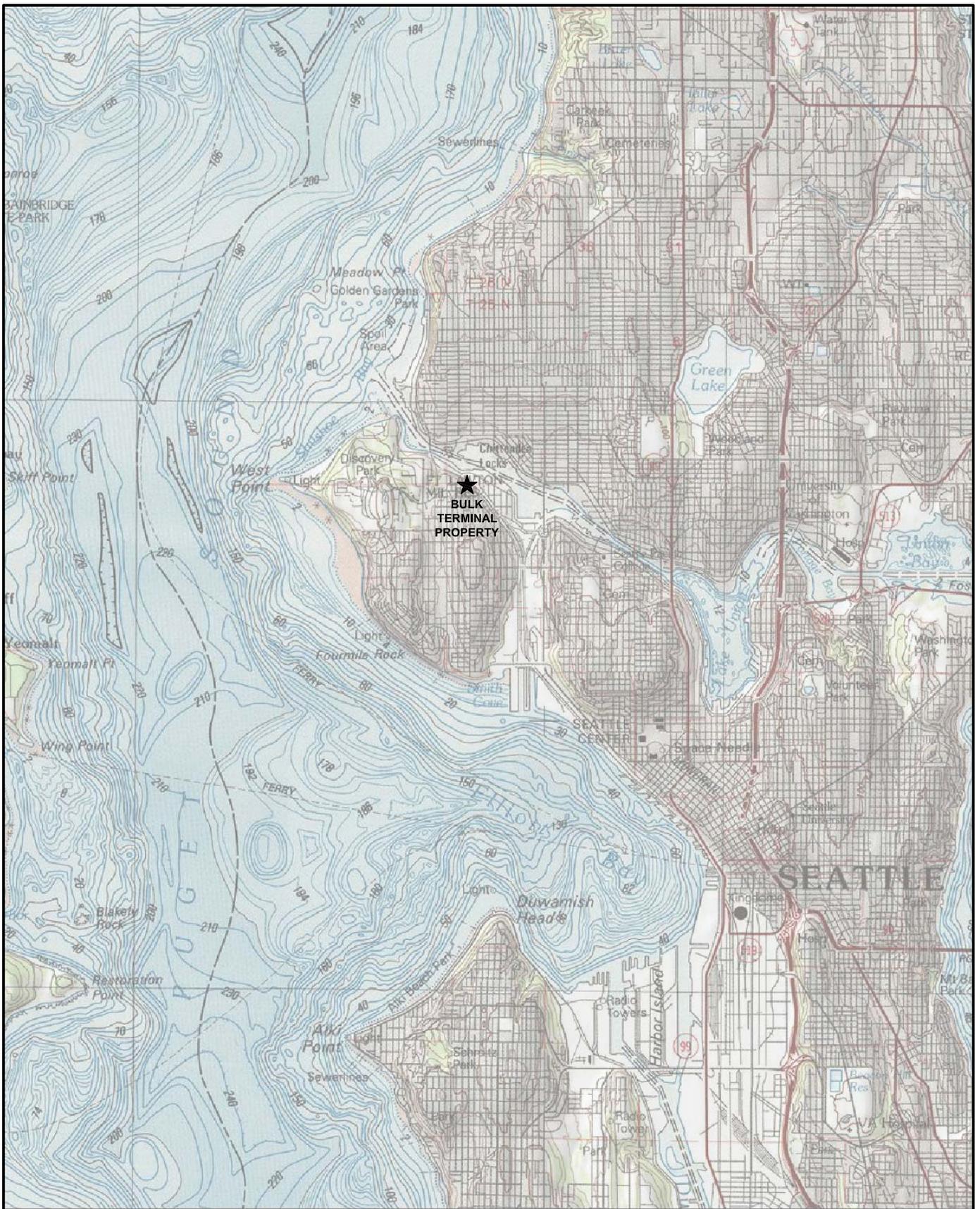
Wiedemeier, T.H., Ross Miller, John Wilson, and Donald Kampbell (Wiedemeier et al.). 1995. Significance of Anaerobic Processes For the Intrinsic Bioremediation of Fuel Hydrocarbons. National Groundwater Association Dublin, Ohio.

8.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

FIGURES



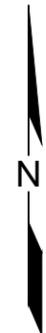
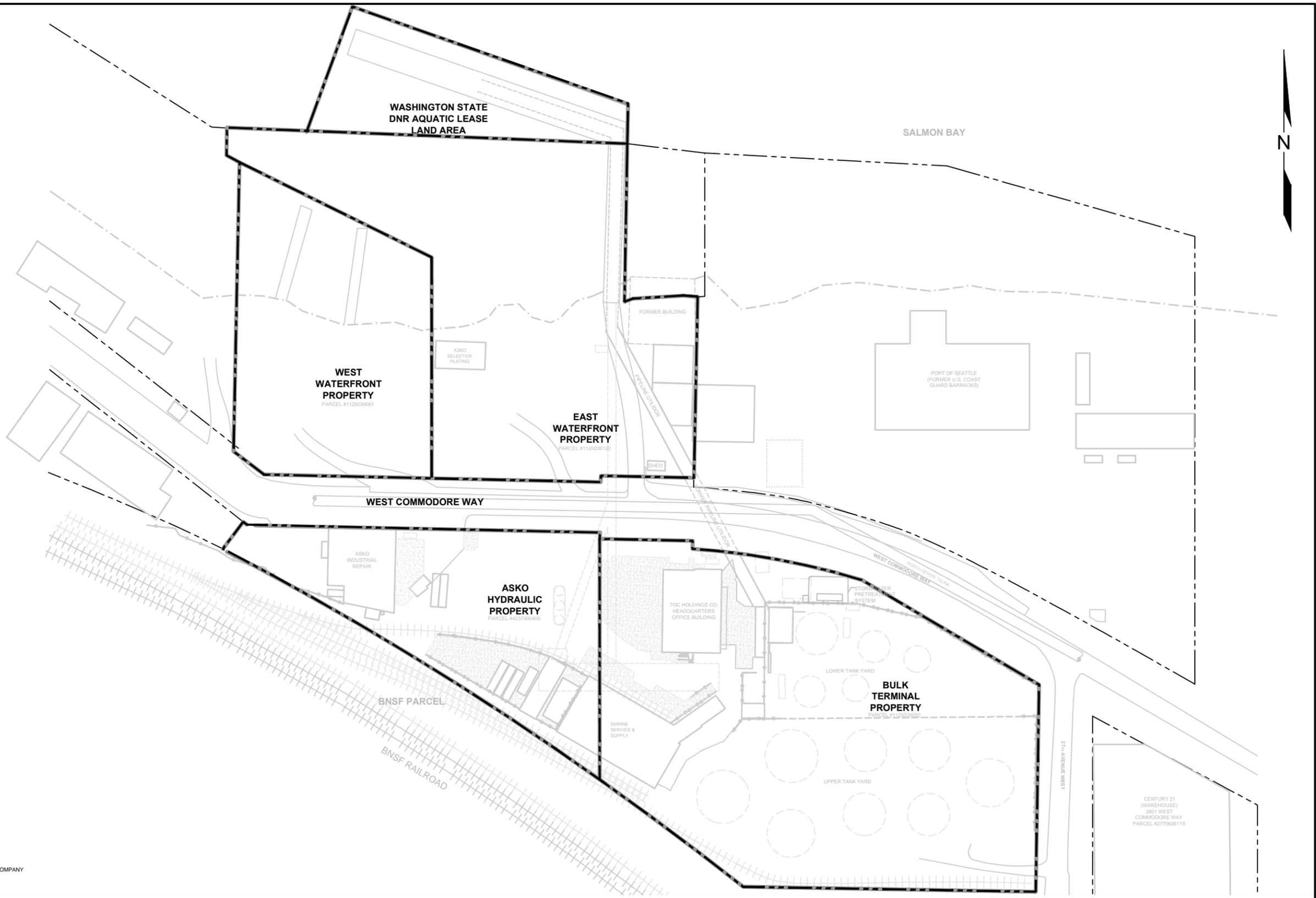
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 DRAWN BY: _____NAC
 CHECKED BY: _____JAB/TSB
 CAD FILE: _____0600_FIG1_VICINITY_BULK

PROJECT NAME: _____BULK TERMINAL PROPERTY
 PROJECT NUMBER: _____0440-004
 STREET ADDRESS: _____2737 WEST COMMODORE WAY
 CITY, STATE: _____SEATTLE, WASHINGTON

FIGURE 1
 PROPERTY LOCATION MAP



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- SHORELINE
- BNSF RAILROAD
- FORMER RAIL SPUR
- FORMER STRUCTURES
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- BNSF BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
- DNR DEPARTMENT OF NATURAL RESOURCES



DATE: 06/14/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_PP

PROJECT NAME: TOC HOLDINGS CO. SEATTLE TERMINAL PROPERTIES
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737, 2750, 2800, AND 2805 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

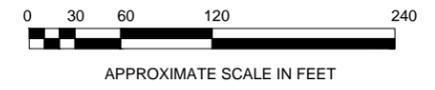
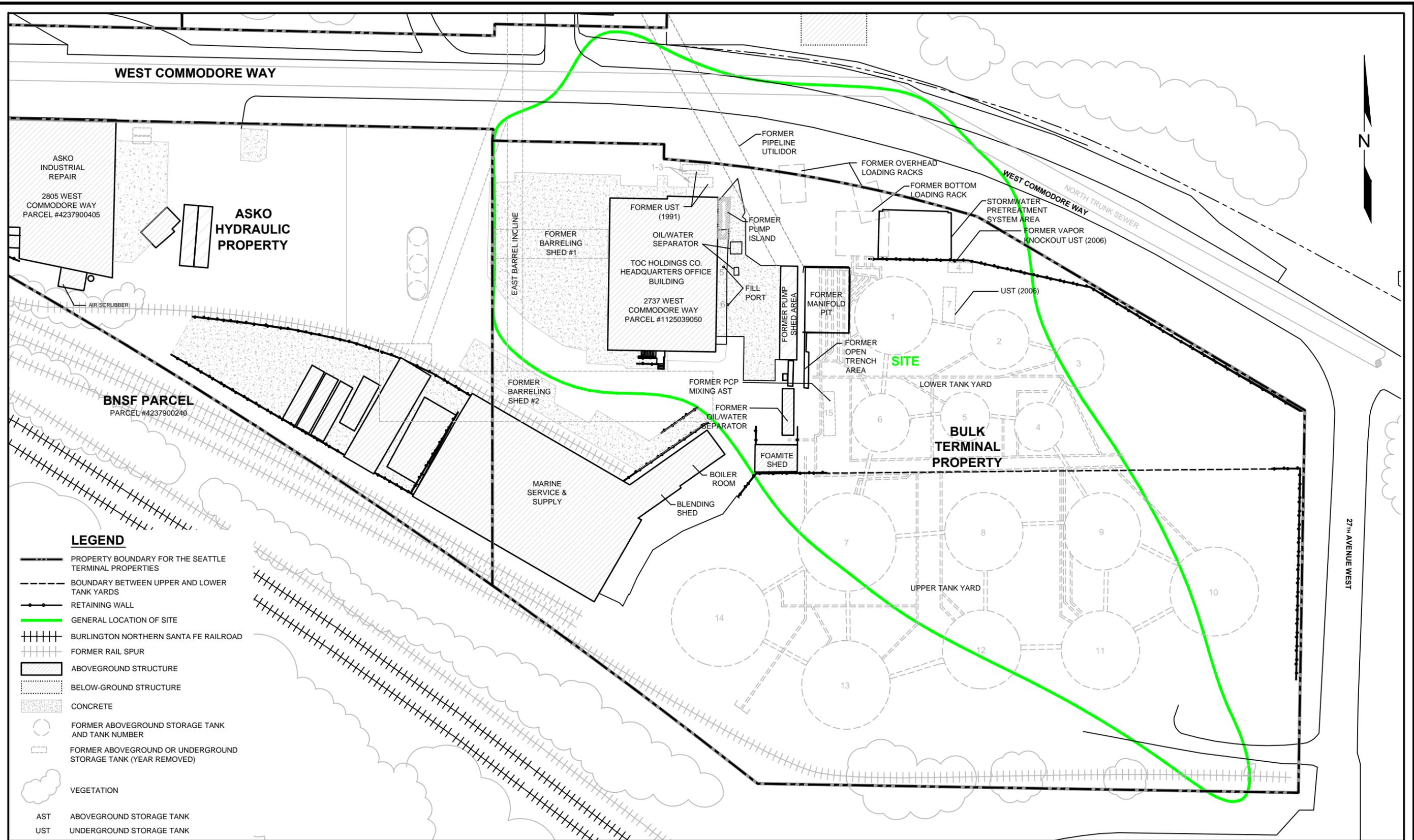


FIGURE 2
 SEATTLE TERMINAL PROPERTIES
 PROPERTY PLAN



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- GENERAL LOCATION OF SITE
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK AND TANK NUMBER
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK (YEAR REMOVED)
- VEGETATION
- AST ABOVEGROUND STORAGE TANK
- UST UNDERGROUND STORAGE TANK



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 CAD FILE: 01-600_2014RI_SITES

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 SES PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

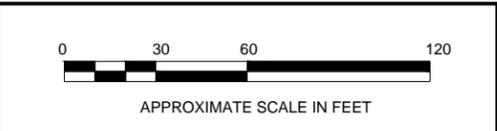
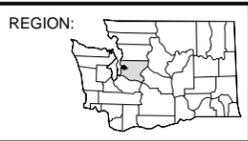
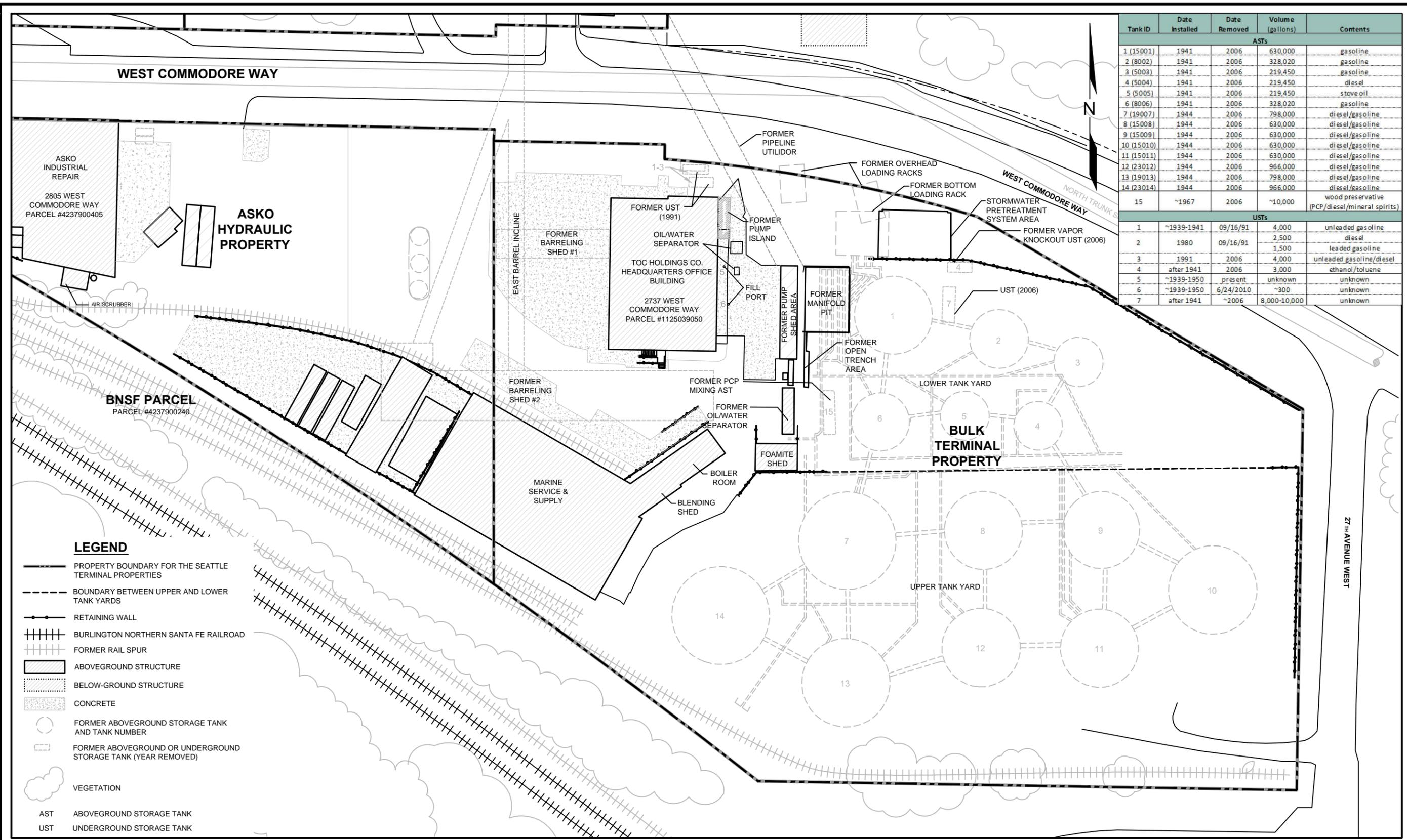


FIGURE 3
 SITE BOUNDARY MAP



Tank ID	Date Installed	Date Removed	Volume (gallons)	Contents
ASTs				
1 (15001)	1941	2006	630,000	gasoline
2 (8002)	1941	2006	328,020	gasoline
3 (5003)	1941	2006	219,450	gasoline
4 (5004)	1941	2006	219,450	diesel
5 (5005)	1941	2006	219,450	stove oil
6 (8006)	1941	2006	328,020	gasoline
7 (19007)	1944	2006	798,000	diesel/gasoline
8 (15008)	1944	2006	630,000	diesel/gasoline
9 (15009)	1944	2006	630,000	diesel/gasoline
10 (15010)	1944	2006	630,000	diesel/gasoline
11 (15011)	1944	2006	630,000	diesel/gasoline
12 (23012)	1944	2006	966,000	diesel/gasoline
13 (19013)	1944	2006	798,000	diesel/gasoline
14 (23014)	1944	2006	966,000	diesel/gasoline
15	~1967	2006	~10,000	wood preservative (PCP/diesel/mineral spirits)
USTs				
1	~1939-1941	09/16/91	4,000	unleaded gasoline
2	1980	09/16/91	2,500	diesel
3	1991	2006	4,000	unleaded gasoline/diesel
4	after 1941	2006	3,000	ethanol/toluene
5	~1939-1950	present	unknown	unknown
6	~1939-1950	6/24/2010	~300	unknown
7	after 1941	~2006	8,000-10,000	unknown

LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- - - BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- ++++ BURLINGTON NORTHERN SANTA FE RAILROAD
- ++++ FORMER RAIL SPUR
- ▭ ABOVEGROUND STRUCTURE
- ▭ BELOW-GROUND STRUCTURE
- ▭ CONCRETE
- FORMER ABOVEGROUND STORAGE TANK AND TANK NUMBER
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK (YEAR REMOVED)
- ☁ VEGETATION
- AST ABOVEGROUND STORAGE TANK
- UST UNDERGROUND STORAGE TANK



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PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 SES PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

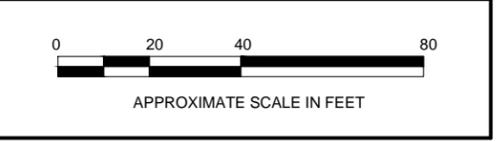
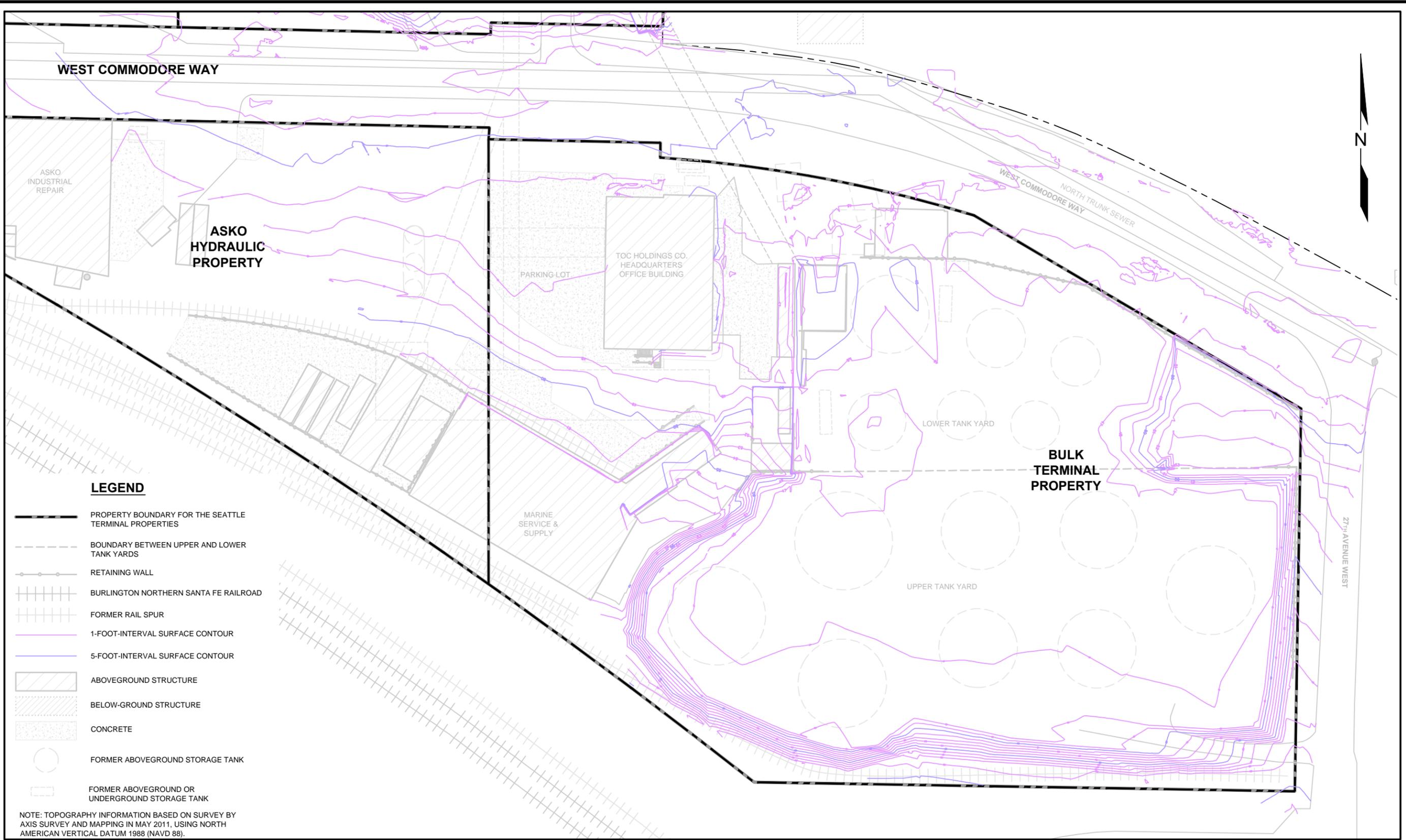


FIGURE 4
HISTORICAL FEATURES

6/18/2014

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTP\RI\01-600_2014RI_TOPO_F.DWG



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- 1-FOOT-INTERVAL SURFACE CONTOUR
- 5-FOOT-INTERVAL SURFACE CONTOUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK

NOTE: TOPOGRAPHY INFORMATION BASED ON SURVEY BY AXIS SURVEY AND MAPPING IN MAY 2011, USING NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).



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 CITY, STATE: SEATTLE, WASHINGTON

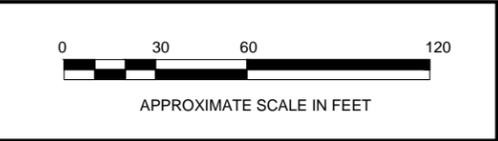
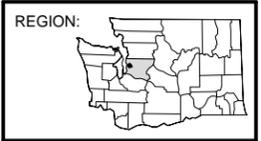
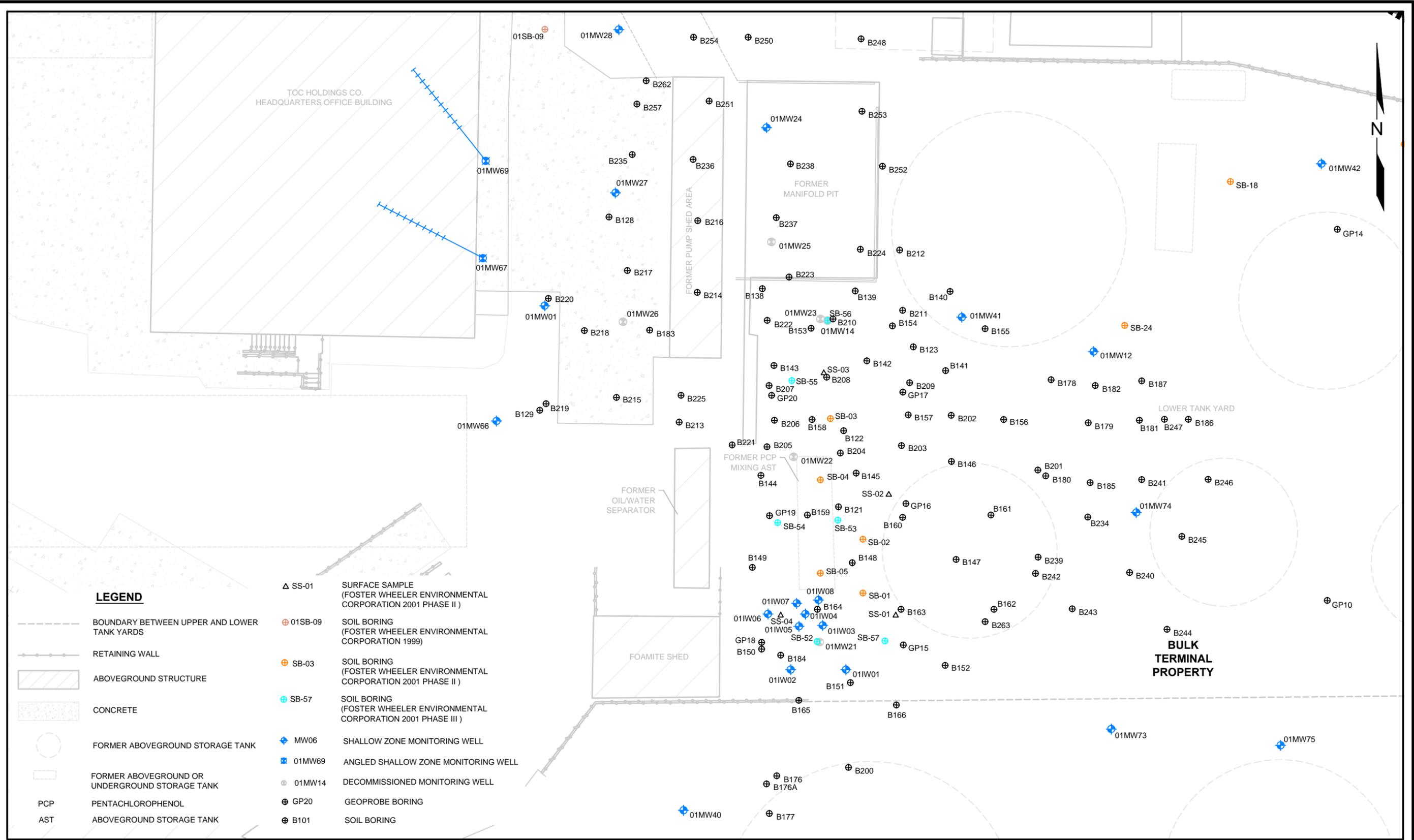


FIGURE 5
 SURFACE TOPOGRAPHY MAP

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 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

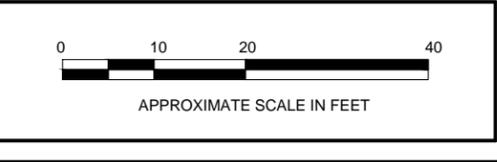
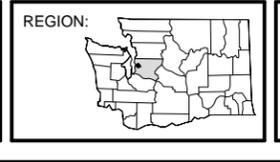
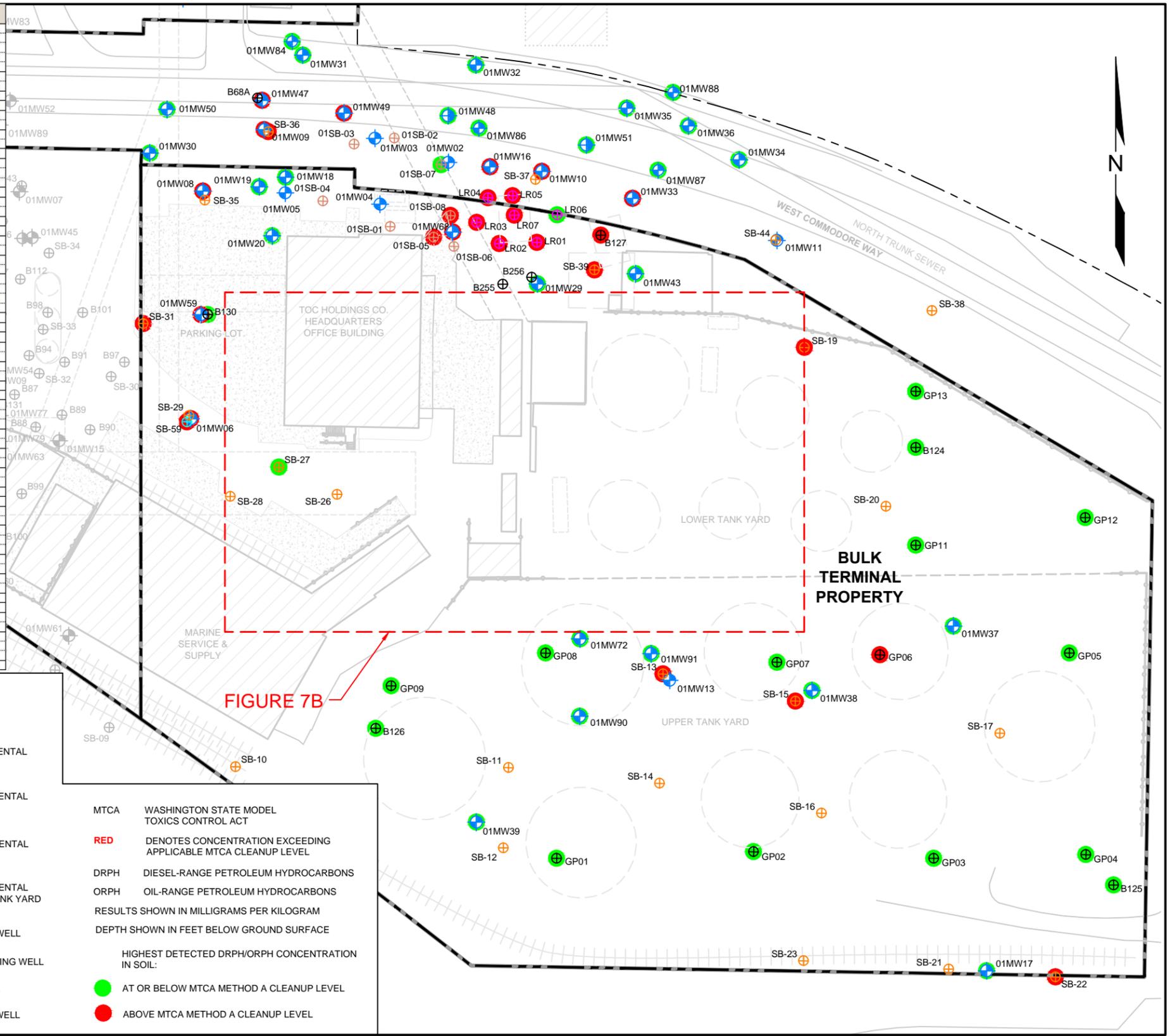


FIGURE 6B
 SOIL BORING AND MONITORING WELL LOCATIONS - ZOOM IN

Sample Location	Date Sampled	Sample Depth	DRPH	ORPH	Sample Location	Date Sampled	Sample Depth	DRPH	ORPH	Sample Location	Date Sampled	Sample Depth	DRPH	ORPH
Bulk Terminal Property														
01SB01	06/06/99	10	2,480	<12.6	01MW39/SB-60	09/07/06	2.5	<12.3	<30.6	01MW16/SB-60	07/19/01	2	38.7	79.8
01SB08	06/06/99	12.5	33,900	<10.0										
SB-27	11/00	5	1,180	<2.5										
SB-11	2000	2	10,600	1,500	01MW43/SB-64	09/08/06	7.5	<12.3	<30.8					
SB-15	2000	2	2,910	265										
SB-18	2000	2	4,070	<27.5										
SB-22	2000	5	19.4	<25.0	GP01	08/31/06	11	<11.5	<28.6					
		10	6,490	<25.0										
01MW06/SB-29	11/00	2	3,220	1,180	GP02	08/31/06	8	<12.4	<30.9					
SB-21	11/00	2	11,400	7,730										
01MW08/SB-33	2000	5	9,460	691	GP03	08/31/06	11	<12.3	<31.0					
SB-38	2001	2	2,440	480										
		5	1,300	197	GP04	08/31/06	8	<11.1	<30.2					
		2	528	470										
SB-58	07/19/01	3	4,890	1,170	GP05	08/31/06	12	<12.2	<30.6					
		10	<10.0	<25.0										
		15	<10.0	<25.0	GP06	08/31/06	9.5	<12.9	<32.2					
		20	<10.0	<25.0										
01MW17/SB-61	07/19/01	2	20.1	88.0	GP07	08/31/06	13	<12.4	<31.0					
		5	<10.0	<25.0										
		10	<10.0	<25.0	GP08	08/31/06	6	<13.2	<32.9					
01MW18/SB-63	08/11/02	10	<10.0	<25.0										
		15	876	<25.0	GP09	09/01/06	12	<11.8	<29.8					
		20	<10.0	<25.0										
		30	<10.0	<25.0										
01MW19/SB-66	08/11/02	5	42.9	70.1	GP11	09/01/06	8	<11.8	<29.1					
		10	17.9	29.3										
		15	<10.0	<25.0	GP12	09/01/06	10	<12.3	<30.8					
		20	<10.0	<25.0										
		25	<10.0	<25.0	GP13	09/01/06	12	<11.9	<29.4					
		30	<10.0	<25.0										
01MW20/SB-67	08/11/02	5	112	73.2	GP14	09/01/06	9	<11.1	<27.9					
		10	<10.0	<25.0										
		15	<10.0	<25.0										
		20	<10.0	<25.0										
		25	<10.0	<25.0										
		30	5.0	<25.0										
01MW29	12/03/02	10	75.2	<25.0										
		15	312	<25.0										
		20	<10.0	<25.0										
		30	7,440	<1,000										
LR01	12/03/02	5	2,670	<250										
		10	13,500	<250										
		20	<10.0	<25.0										
LR02	12/04/02	5	280	<25.0										
		10	11,700	<250										
		15	19,500	<250										
		20	<10.0	<25.0										
LR03	12/04/02	5	219	<25.0										
		10	88,800	<250										
		15	17,800	<250										
		20	4,230	<250										
LR07	12/02	10	5,840	<250										
		15	11,400	<250										
		20	<12.7	<31.8										
01MW37/SB-58	09/07/06	7.5	<12.4	<31.0										
		12.5	<12.5	<31.2										
		2.5	<12.5	<31.4										
01MW38/SB-59	09/07/06	7.5	1.7	<29.7										
		12.5	<12.0	<29.9										
West Commodore Way														
01SB07	06/06/99	5	1,180	78.3										
01MW09/SB-36	2000	15	11,300	<27.5										
01MW10/SB-37	2000	10	5,770	<27.5										
		15	9,130	<27.5										
MTEA Method A Cleanup Level 2,000 2,000														



LEGEND	
	PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
	BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
	RETAINING WALL
	FORMER RAIL SPUR
	ABOVEGROUND STRUCTURE
	BELOW-GROUND STRUCTURE
	CONCRETE
	FORMER ABOVEGROUND STORAGE TANK
	FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
	GP20 GEOPROBE BORING
	B101 SOIL BORING
	01SB-09 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 1999)
	SB-45 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
	SB-60 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE III)
	LR06 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2002 LOWER TANK YARD INVESTIGATION)
	MW06 SHALLOW ZONE MONITORING WELL
	01MW57 INTERMEDIATE ZONE MONITORING WELL
	01MW65 DEEP ZONE MONITORING WELL
	01MW79 PERCHED ZONE MONITORING WELL

FIGURE 7B

MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT

RED DENOTES CONCENTRATION EXCEEDING APPLICABLE MTCA CLEANUP LEVEL

DRPH DIESEL-RANGE PETROLEUM HYDROCARBONS

ORPH OIL-RANGE PETROLEUM HYDROCARBONS

RESULTS SHOWN IN MILLIGRAMS PER KILOGRAM

DEPTH SHOWN IN FEET BELOW GROUND SURFACE

HIGHEST DETECTED DRPH/ORPH CONCENTRATION IN SOIL:

AT OR BELOW MTCA METHOD A CLEANUP LEVEL

ABOVE MTCA METHOD A CLEANUP LEVEL



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 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

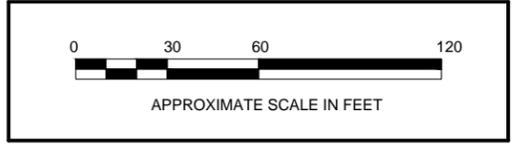
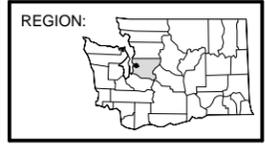


FIGURE 7A
 HISTORICAL SOIL ANALYTICAL RESULTS FOR DRPH AND ORPH

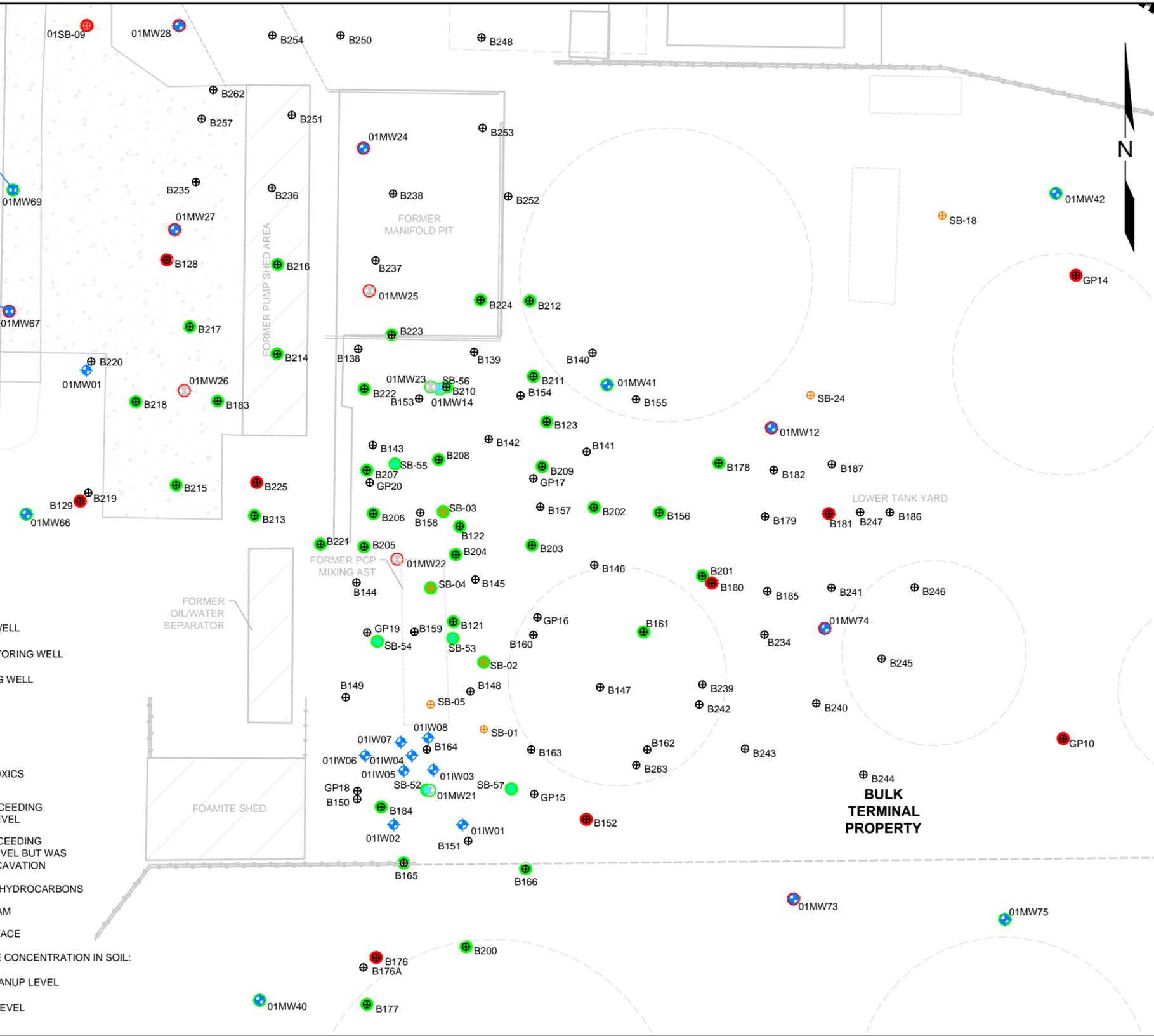
Sample Location	Date Sampled	Sample Depth	DRPH	ORPH	Sample Location	Date Sampled	Sample Depth	DRPH	ORPH	Sample Location	Date Sampled	Sample Depth	DRPH	ORPH
01SB09	06/06/99	2.5	1,780	514	01MW26	12/04/02	5	<10.0	<25.0	01MW74/B169	03/10/10	3.5	2,300	<25.0
		7	74,800	<25.0			10	34,000	<2,500			10.5	2,700	<25.0
		12.5	15,000	<25.0			15	7,000	<25.0			2.5	2,400	36.0
SB-02	11/00	2	1,400	158	01MW27	12/04/02	5	7,410	<200	01MW75/B170	03/10/10	3.5	610	<25.0
SB-03	11/00	0.5	2,010	4,790			10	31,000	<25.0			10	640	39.0
SB-04	11/00	2	14,700	6,390			15	3,810	<200			15	810	810
		2	5,870	2,310			20	<20.0	<25.0			20	<20.0	<25.0
		3	117	250			25	1,840	<25.0			25	81	<25.0
01MW12/SB-24	2/00	2	2,610	<2,000	01MW28	12/03/02	10	39,300	<2,500			30	420	<25.0
		1.0	266	80.8			15	2,810	<200			30	2,300	<25.0
		2.5	4,180	<2,000			20	<20.0	<25.0			30	6	<25.0
SB-32	07/16/01	6	34.4	<25.0			25	<20.0	<25.0			30	0.5	<25.0
		1.0	10.3	<25.0			25	<2.8	<2.3			30	2.5	<25.0
		2	<2.0	<25.0	01MW40/B-61	09/07/06	7.5	<11.3	<8.3			30	0.5	1,300
		3	<2.0	<25.0			12.5	<12.4	<8.1			30	12.5	<25.0
		1.0	12.7	<25.0			2.5	<12.1	<8.3			30	12.5	<25.0
SB-34	07/16/01	2	1,500	1,210	01MW41/B-62	09/08/06	7.5	<12.0	<8.1			30	10	<25.0
		3	<2.0	<25.0			12.5	<12.3	<8.9			30	12.5	<25.0
		1.0	<2.0	<25.0	01MW42/B-63	09/08/06	7.5	<11.5	<8.7			30	12.5	<25.0
		2.5	<2.0	<25.0			12.5	<11.8	<8.8			30	10	<25.0
SB-35	07/16/01	6	370	<25.0	GP10	09/01/06	4	15.6	<8.8			30	12.5	<25.0
		1.0	18.4	<25.0			7	15,700	<2,850			30	12.5	1,800
01MW14/SB-56	07/17/01	5	2,040	<25.0	GP14	09/01/06	7	1,390	<300			30	12.5	<25.0
		1.0	<2.0	<25.0			10	<12.1	<8.3			30	12.5	<25.0
		1.5	3,970	881	01MW66/B117	07/23/09	2.5	<25.0	<25.0			30	12.5	<25.0
		3	54	<25.0			7.5	<25.0	<25.0			30	12.5	<25.0
01MW21	12/02/02	1.0	<2.0	<25.0	01MW67/B118	07/23/09	2.5	8,700	3,100			30	12.5	<25.0
		1.5	<2.0	<25.0			7.5	<25.0	<25.0			30	12.5	<25.0
		2.0	31.5	<25.0	01MW68/B120	07/24/09	11	<25.0	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0			13	<25.0	<25.0			30	12.5	<25.0
01MW22	12/02/02	1.0	<2.0	<25.0	B121	12/28/09	2.5	<25.0	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0			4.5	<25.0	<25.0			30	12.5	<25.0
		2.0	<2.0	<25.0	B122	12/28/09	0.5	1,300	2,200			30	12.5	<25.0
		2.5	<2.0	<25.0			7.5	200	<25.0			30	12.5	<25.0
		3	681	154	B123	12/28/09	2.5	490	<25.0			30	12.5	<25.0
01MW23	12/02/02	1.0	32.5	<25.0			4.5	2,900	390			30	12.5	<25.0
		1.5	<2.0	<25.0	B124	12/29/09	1.5	4,800	1,900			30	12.5	<25.0
		2.0	<2.0	<25.0			7.5	11,000	870			30	12.5	<25.0
		3	3,000	149	B125	12/29/09	2.5	2,000	980			30	12.5	<25.0
01MW24	12/02/02	1.0	418	<25.0	B126	03/01/10	2.5	13,000	990			30	12.5	<25.0
		1.5	11.8	<25.0	B127	03/02/10	2.5	96	<25.0			30	12.5	<25.0
		2.0	<2.0	<25.0	B128	03/02/10	7	<25.0	<25.0			30	12.5	<25.0
		3	<2.0	<25.0	B129	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
01MW25	12/02/02	1.0	<2.0	<25.0	B130	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B131	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		2.0	<2.0	<25.0	B132	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		3	<2.0	<25.0	B133	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B134	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B135	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B136	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B137	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B138	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B139	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B140	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B141	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B142	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B143	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B144	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B145	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B146	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B147	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B148	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B149	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B150	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B151	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B152	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B153	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B154	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B155	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B156	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B157	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B158	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B159	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B160	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B161	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B162	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B163	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B164	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B165	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B166	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B167	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B168	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B169	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.8	<2.0	<25.0	B170	03/02/10	2.5	2,400	<25.0			30	12.5	<25.0
		1.5	<2.0	<25.0	B171	03/02/10	2.5	2,400	<25.0			30	12.	

Sample Location	Date Sampled	Sample Depth	GRPH	Benzene	Sample Location	Date Sampled	Sample Depth	GRPH	Benzene	Sample Location	Date Sampled	Sample Depth	GRPH	Benzene
Bulk Terminal Property														
01SB05	06/06/99	10	2.860	<2.5	01MW39/SB-60	09/07/06	2.5	<0.35	<0.00187	01MW16/SB-60	07/18/01	2	22.8	<0.0500
01SB08	06/06/99	12.5	3.650	9.86			5	<0.35	<0.00159			5	<0.35	<0.0500
SB-27	11/00	2	12.1	<0.1			12.5	<0.35	<0.00151			10	<0.35	<0.0500
SB-13	2000	2	9.340	14.3	01MW43/SB-64	09/08/06	7.5	<0.35	<0.00135			15	1.240	1.68
SB-15	2000	2	9.02	<0.5			17.5	<0.35	<0.00135			20	<0.35	0.0500
SB-19	2000	2	1.500	<1			8	<0.02	0.00339	LR04	12/04/02	10	827	0.32
SB-22	2000	2	360	<0.3	GP01	08/31/06	15	<0.42	0.00892	LR05	12/04/02	15	2.590	4.87
01MW06/SB-28	11/00	2	293	<0.23	GP02	08/31/06	8	<0.71	<0.00989	LR06	12/01/02	10	869	0.940
SB-31	11/00	2	577	<0.512	GP03	08/31/06	11	<0.32	<0.00980	LR06	12/01/02	15	1.320	2.23
01MW08/SB-25	2000	2	393	<0.2	GP04	08/31/06	15	<0.48	<0.00980	LR06	12/01/02	5	38	<0.0300
SB-38	2001	2	34.8	<0.5	GP04	08/31/06	8	<0.30	<0.00904	01MW30/B01	04/21/06	10	827	0.32
SB-29	07/19/01	2	65.6	<0.0500	GP05	08/31/06	15	<0.41	<0.00980	01MW30/B01	04/21/06	15	3.90	0.940
01MW17/SB-61	07/18/01	2	799	<0.0	GP05	08/31/06	12	<0.48	<0.00980	01MW31	07/06/06	10	3.71	<0.0300
		5	192	<0.1	GP06	08/31/06	8	<0.03	0.00946	01MW31	07/06/06	15	8.19	<0.0200
		10	1.640	<0.0	GP06	08/31/06	15	<0.48	<0.00980	01MW31	07/06/06	20	4.90	0.05
		15	34.8	<0.5	GP06	08/31/06	12	<0.42	<0.00978	01MW32	07/06/06	10	3.31	<0.0200
		20	60.5	<0.280	GP06	08/31/06	15	<0.41	<0.00980	01MW32	07/06/06	15	4.89	<0.0200
		25	65.6	<0.0500	GP07	08/31/06	8	<0.43	<0.00980	01MW32	07/06/06	20	7.01	<0.0135
		30	799	<0.0	GP07	08/31/06	12	<0.71	<0.00980	01MW33	07/06/06	10	4.74	<0.02
		35	799	<0.0500	GP08	08/31/06	15	<0.41	<0.00980	01MW33	07/06/06	15	6.74	<0.02
		40	799	<0.0500	GP08	08/31/06	12	<0.42	<0.00978	01MW33	07/06/06	20	4.90	0.05
		45	799	<0.0500	GP09	08/31/06	8	<0.35	<0.00980	01MW33	07/06/06	25	6.74	<0.02
		50	799	<0.0500	GP09	08/31/06	15	<0.41	<0.00980	01MW34	07/07/06	10	3.31	<0.0200
		55	799	<0.0500	GP10	08/31/06	12	<0.42	<0.00978	01MW34	07/07/06	15	4.89	<0.0200
		60	799	<0.0500	GP10	08/31/06	15	<0.41	<0.00980	01MW34	07/07/06	20	7.01	<0.0135
		65	799	<0.0500	GP11	08/31/06	8	<0.36	<0.00989	01MW35	07/07/06	10	4.20	<0.02
		70	799	<0.0500	GP11	08/31/06	15	<0.41	<0.00980	01MW35	07/07/06	15	6.20	<0.02
		75	799	<0.0500	GP12	08/31/06	12	<0.30	<0.00980	01MW36	07/07/06	10	4.20	<0.02
		80	799	<0.0500	GP12	08/31/06	15	<0.41	<0.00980	01MW36	07/07/06	15	6.20	<0.02
		85	799	<0.0500	GP13	08/31/06	8	<0.36	<0.00989	01MW37	07/07/06	10	4.20	<0.02
		90	799	<0.0500	GP13	08/31/06	15	<0.41	<0.00980	01MW37	07/07/06	15	6.20	<0.02
		95	799	<0.0500	GP14	08/31/06	12	<0.30	<0.00980	01MW38	07/07/06	10	4.20	<0.02
		100	799	<0.0500	GP14	08/31/06	15	<0.41	<0.00980	01MW38	07/07/06	15	6.20	<0.02
		105	799	<0.0500	GP15	08/31/06	8	<0.36	<0.00989	01MW39	07/07/06	10	4.20	<0.02
		110	799	<0.0500	GP15	08/31/06	15	<0.41	<0.00980	01MW39	07/07/06	15	6.20	<0.02
		115	799	<0.0500	GP16	08/31/06	12	<0.30	<0.00980	01MW40	07/07/06	10	4.20	<0.02
		120	799	<0.0500	GP16	08/31/06	15	<0.41	<0.00980	01MW40	07/07/06	15	6.20	<0.02
		125	799	<0.0500	GP17	08/31/06	8	<0.36	<0.00989	01MW41	07/07/06	10	4.20	<0.02
		130	799	<0.0500	GP17	08/31/06	15	<0.41	<0.00980	01MW41	07/07/06	15	6.20	<0.02
		135	799	<0.0500	GP18	08/31/06	12	<0.30	<0.00980	01MW42	07/07/06	10	4.20	<0.02
		140	799	<0.0500	GP18	08/31/06	15	<0.41	<0.00980	01MW42	07/07/06	15	6.20	<0.02
		145	799	<0.0500	GP19	08/31/06	8	<0.36	<0.00989	01MW43	07/07/06	10	4.20	<0.02
		150	799	<0.0500	GP19	08/31/06	15	<0.41	<0.00980	01MW43	07/07/06	15	6.20	<0.02
		155	799	<0.0500	GP20	08/31/06	12	<0.30	<0.00980	01MW44	07/07/06	10	4.20	<0.02
		160	799	<0.0500	GP20	08/31/06	15	<0.41	<0.00980	01MW44	07/07/06	15	6.20	<0.02
		165	799	<0.0500	GP21	08/31/06	8	<0.36	<0.00989	01MW45	07/07/06	10	4.20	<0.02
		170	799	<0.0500	GP21	08/31/06	15	<0.41	<0.00980	01MW45	07/07/06	15	6.20	<0.02
		175	799	<0.0500	GP22	08/31/06	12	<0.30	<0.00980	01MW46	07/07/06	10	4.20	<0.02
		180	799	<0.0500	GP22	08/31/06	15	<0.41	<0.00980	01MW46	07/07/06	15	6.20	<0.02
		185	799	<0.0500	GP23	08/31/06	8	<0.36	<0.00989	01MW47	07/07/06	10	4.20	<0.02
		190	799	<0.0500	GP23	08/31/06	15	<0.41	<0.00980	01MW47	07/07/06	15	6.20	<0.02
		195	799	<0.0500	GP24	08/31/06	12	<0.30	<0.00980	01MW48	07/07/06	10	4.20	<0.02
		200	799	<0.0500	GP24	08/31/06	15	<0.41	<0.00980	01MW48	07/07/06	15	6.20	<0.02
		205	799	<0.0500	GP25	08/31/06	8	<0.36	<0.00989	01MW49	07/07/06	10	4.20	<0.02
		210	799	<0.0500	GP25	08/31/06	15	<0.41	<0.00980	01MW49	07/07/06	15	6.20	<0.02
		215	799	<0.0500	GP26	08/31/06	12	<0.30	<0.00980	01MW50	07/07/06	10	4.20	<0.02
		220	799	<0.0500	GP26	08/31/06	15	<0.41	<0.00980	01MW50	07/07/06	15	6.20	<0.02
		225	799	<0.0500	GP27	08/31/06	8	<0.36	<0.00989	01MW51	07/07/06	10	4.20	<0.02
		230	799	<0.0500	GP27	08/31/06	15	<0.41	<0.00980	01MW51	07/07/06	15	6.20	<0.02
		235	799	<0.0500	GP28	08/31/06	12	<0.30	<0.00980	01MW52	07/07/06	10	4.20	<0.02
		240	799	<0.0500	GP28	08/31/06	15	<0.41	<0.00980	01MW52	07/07/06	15	6.20	<0.02
		245	799	<0.0500	GP29	08/31/06	8	<0.36	<0.00989	01MW53	07/07/06	10	4.20	<0.02
		250	799	<0.0500	GP29	08/31/06	15	<0.41	<0.00980	01MW53	07/07/06	15	6.20	<0.02
		255	799	<0.0500	GP30	08/31/06	12	<0.30	<0.00980	01MW54	07/07/06	10	4.20	<0.02
		260	799	<0.0500	GP30	08/31/06	15	<0.41	<0.00980	01MW54	07/07/06	15	6.20	<0.02
		265	799	<0.0500	GP31	08/31/06	8	<0.36	<0.00989	01MW55	07/07/06	10	4.20	<0.02
		270	799	<0.0500	GP31	08/31/06	15	<0.41	<0.00980	01MW55	07/07/06	15	6.20	<0.02
		275	799	<0.0500	GP32	08/31/06	12	<0.30	<0.00980	01MW56	07/07/06	10	4.20	<0.02
		280	799	<0.0500	GP32	08/31/06	15	<0.41	<0.00980	01MW56	07/07/06	15	6.20	<0.02
		285	799	<0.0500	GP33	08/31/06	8	<0.36	<0.00989	01MW57	07/07/06	10	4.20	<0.02
		290	799	<0.0500	GP33	08/31/06	15	<0.41	<0.00980	01MW57	07/07/06	15	6.20	<0.02
		295	799	<0.0500	GP34	08/31/06	12	<0.30	<0.00980	01MW58	07/07/06	10	4.20	<0.02
		300	799	<0.0500	GP34	08/31/06	15	<0.41	<0.00980	01MW58	07/07/06	15	6.20	<0.02
		305	799	<0.0500	GP35	08/31/06	8	<0.36	<0.00989	01MW59	07/07/06	10	4.20	<0.02
		310	799	<0.0500	GP35	08/31/06	15	<0.41	<0.00980	01MW59	0			

Sample Location	Date Sampled	Sample Depth	GRPH	Benzene	Sample Location	Date Sampled	Sample Depth	GRPH	Benzene	Sample Location	Date Sampled	Sample Depth	GRPH	Benzene		
01SB09	06/06/09	2.5	381	2.12	01MW26	12/04/02	5	681	<0.0300	01MW74/B169	03/10/10	3.5	2,600	12		
		7	2,360	3.45			15	1,480	<0.0300			10.5	200	3.9		
		11.5	759,000	9.990			20	<0.0300				01MW75/B170	03/10/10	3.5	<0.02	
SB-02	11/00	2	1,970	8.58			5	5,600	8.21			1176	03/25/11	2.5	200	<0.02
		0.5	<0.00	<0.03			10	2,370	8.21			1177	03/25/11	2.5	19.9	<0.02
SB-03	11/00	2	1,670	<0.0			15	377	0.365			1178	03/25/11	0.5	<0.02	<0.02
		2	513	<0.02			20	<0.00	<0.0300			1180	03/25/11	4.5	1,300	0.89
SB-04	11/00	2	8.42	<0.02			25	<0.00	<0.0300			1181	03/25/11	2.5	2,800	4.0
		2	39	<0.02			30	<0.00	<0.0300			1183	04/14/11	0.5	6.8	<0.02
01MW12/SB-24	2000	2.5	252	<0.238			10	1,170	<0.0300			1184	04/14/11	2.5	39	<0.02
		2.5	1,430	<0.0			20	<0.00262	<0.0300			1200	03/28/12	0.5	<0.02	<0.02
SB-52	07/16/01	6	<0.00	<0.0300			2.5	<0.58	<0.0165			1201	03/28/12	0.5	<0.02	<0.02
		10	<0.00	<0.0300			11.5	<0.22	<0.0128			1202	04/05/12	11.5	<0.02	<0.02
SB-53	07/16/01	2	<0.00	<0.0300			2.5	<0.60	0.00173			1203	04/06/12	11.5	<0.02	<0.02
		2	<0.00	<0.0300			7.5	<0.81	<0.00152			1204	04/06/12	10	33	0.023
SB-54	07/16/01	10	<0.00	<0.0300			11.5	<0.86	<0.00163			1205	04/05/12	11.5	2.5	<0.02
		5	<0.00	<0.0300			2.5	<0.33	<0.00139			1206	04/05/12	10	<0.02	<0.02
SB-55	07/16/01	2	<0.00	<0.0300			7.5	<0.87	<0.00151			1207	04/05/12	8	7.1	<0.02
		6	185	<0.200			11.5	<0.93	<0.00150			1208	04/05/12	11.5	180	0.26
01MW14/SB-56	07/17/01	2.5	5,100	10.2			15	639	0.142			1209	04/05/12	11.5	<0.02	<0.02
		10	<0.00	<0.0300			7	11.5	0.012			1210	03/28/12	11.5	<0.02	<0.02
SB-57	07/2001	1.5	2,590	0.397			10	<0.27	0.0735			1211	03/28/12	11.5	<0.02	<0.02
		5	<0.00	<0.0300			15	<0.98	<0.00389			1212	03/28/12	11.5	<0.02	<0.02
01MW21	12/02/02	10	<0.00	<0.0300			15	<0.00	<0.0300			1213	03/28/12	11.5	<0.02	<0.02
		20	<0.00	<0.0300			11.5	<0.00	<0.0300			1214	03/28/12	11.5	<0.02	<0.02
01MW22	12/02/02	10	<0.00	<0.0300			11	480	<0.1			1215	03/30/12	2.5	5,000	1.9
		20	<0.00	<0.0300			11	7	<0.02			1216	03/30/12	0.5	880	0.93
01MW23	12/02/02	2	<0.00	<0.0300			11	<0.02	<0.02			1217	03/30/12	2.5	1,600	2.7
		10	<0.00	<0.0300			4.5	79	<0.02			1218	03/30/12	4.5	9.1	0.035
01MW24	12/02/02	5	732	0.817			2.5	10	0.1			1219	03/30/12	8.5	570	1.1
		10	<0.00	<0.0300			1.5	410	<0.02			1221	04/06/12	8	340	0.67
01MW25	12/02/02	15	28.4	0.03			7.5	1,500	5.2			1222	04/06/12	11.5	<0.02	<0.02
		20	<0.00	0.0454			2.5	230	<0.2			1223	04/06/12	11.5	<0.02	<0.02
		5	<0.00	0.0491			9.5	<0.02	<0.02			1224	04/06/12	11.5	42	<0.02
		10	176	0.0688			7	200	0.51			1225	04/11/12	2.5	<0.02	<0.02
		15	<0.00	<0.0300			10	3	0.12					10	13	0.082
		18	<0.00	<0.0300			0.5	28	<0.2							
							10	3	0.12							

LEGEND

- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- ▨ ABOVEGROUND STRUCTURE
- ▨ CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- PCP PENTACHLOROPHENOL
- AST ABOVEGROUND STORAGE TANK
- ⊕ 01SB-09 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 1999)
- ⊕ SB-03 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
- ⊕ SB-57 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE III)
- ⊕ MW06 SHALLOW ZONE MONITORING WELL
- ⊕ 01MW69 ANGLED SHALLOW ZONE MONITORING WELL
- ⊕ 01MW14 DECOMMISSIONED MONITORING WELL
- ⊕ GP20 GEOPROBE BORING
- ⊕ B101 SOIL BORING
- mg/kg MILLIGRAMS PER KILOGRAM
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- RED DENOTES CONCENTRATION EXCEEDING APPLICABLE MTCA CLEANUP LEVEL
- BLUE DENOTES CONCENTRATION EXCEEDING APPLICABLE MTCA CLEANUP LEVEL BUT WAS REMOVED DURING A PRIOR EXCAVATION
- GRPH GASOLINE-RANGE PETROLEUM HYDROCARBONS
- RESULTS SHOWN IN MILLIGRAMS PER KILOGRAM
- DEPTH SHOWN IN FEET BELOW GROUND SURFACE
- HIGHEST DETECTED GRPH/BENZENE CONCENTRATION IN SOIL:
- AT OR BELOW MTCA METHOD A CLEANUP LEVEL
- ABOVE MTCA METHOD A CLEANUP LEVEL



DATE: 06/28/13
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 CAD FILE: 01-600_2014RI_SD_GB_Z

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

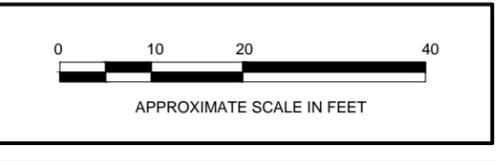
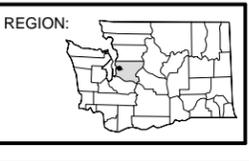
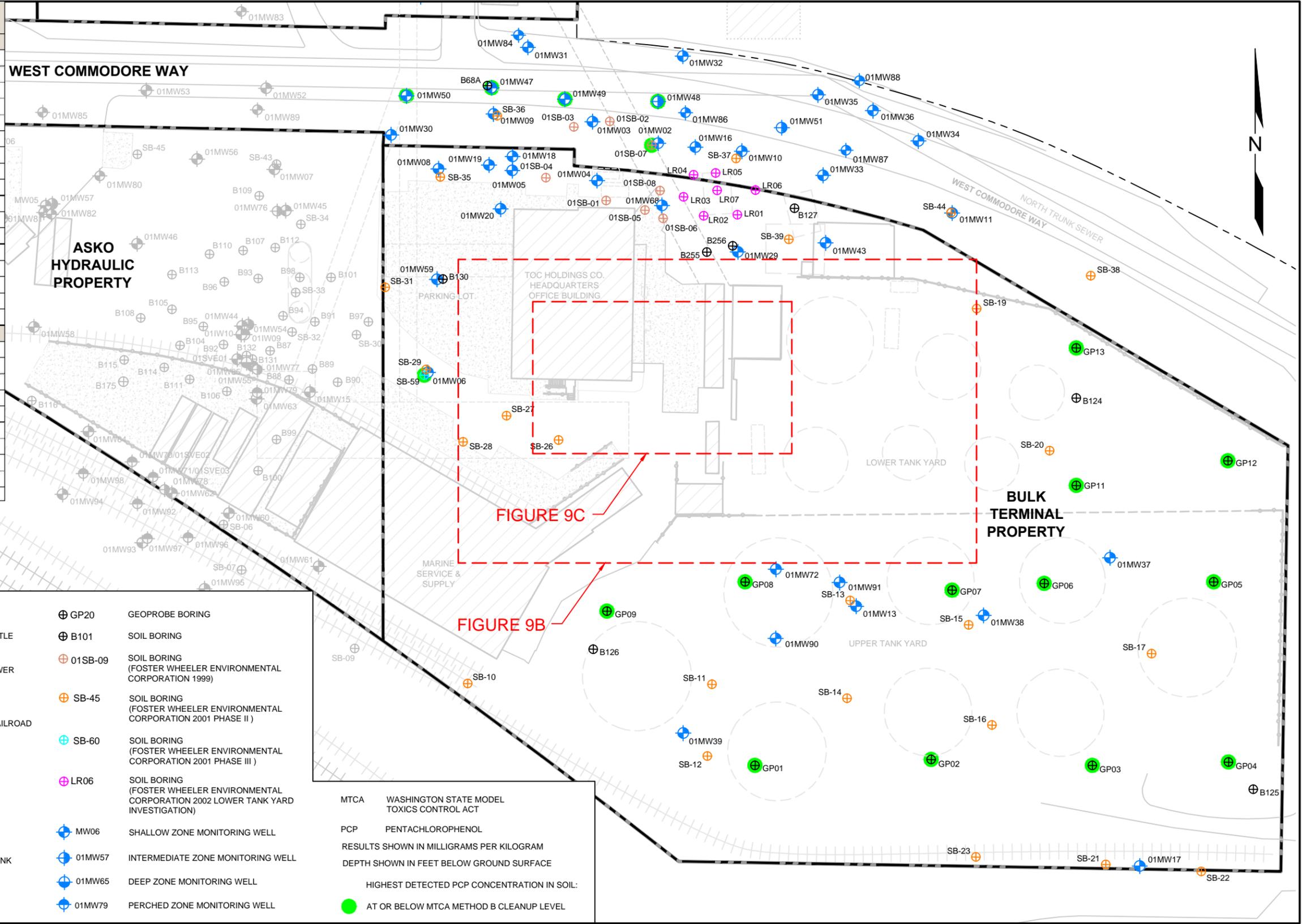


FIGURE 8B
 HISTORICAL SOIL ANALYTICAL RESULTS FOR GRPH AND BENZENE

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\2014\BTPR\01-600_2014RI_SD_PCP_F.DWG
 6/18/2014
 SOUND EARTH INC.

Sample Location	Date Sampled	Sample Depth	PCP
Bulk Terminal Property			
SB-59	07/19/01	2	<0.0500
		5	<0.500
		10	<0.0500
		15	<0.0500
		20	0.148
GP01	08/31/06	8	<0.0651
GP02	08/31/06	8	<0.0623
GP03	08/31/06	6	<0.0623
GP04	08/31/06	8	<0.0588
GP05	08/31/06	8	<0.0596
GP06	08/31/06	2	<2.93
GP07	08/31/06	5.5	<0.0606
GP08	08/31/06	2.5	<1.2
GP09	09/01/06	8	<0.0617
GP11	09/01/06	8	<0.579
GP12	09/01/06	12	<0.0599
GP13	09/01/06	8	<0.0550
West Commodore Way			
01SB07	06/06/99	5	<0.25
01MW47/B68	11/29/06	20	<5
		25	<0.1
01MW48/B69	11/30/06	28	<0.1
		13	<1
01MW49/B70	12/21/06	18	<0.1
		33	<0.1
		33	<0.1
01MW50/B71	12/21/06	18	<0.1
		33	<0.1
MTCA Method B Cleanup Level			
			2.5



LEGEND

	PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
	BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
	RETAINING WALL
	BURLINGTON NORTHERN SANTA FE RAILROAD
	FORMER RAIL SPUR
	ABOVEGROUND STRUCTURE
	BELOW-GROUND STRUCTURE
	CONCRETE
	FORMER ABOVEGROUND STORAGE TANK
	FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK

	GP20	GEOPROBE BORING
	B101	SOIL BORING
	01SB-09	SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 1999)
	SB-45	SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
	SB-60	SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE III)
	LR06	SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2002 LOWER TANK YARD INVESTIGATION)
	MW06	SHALLOW ZONE MONITORING WELL
	01MW57	INTERMEDIATE ZONE MONITORING WELL
	01MW65	DEEP ZONE MONITORING WELL
	01MW79	PERCHED ZONE MONITORING WELL

MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 PCP PENTACHLOROPHENOL
 RESULTS SHOWN IN MILLIGRAMS PER KILOGRAM
 DEPTH SHOWN IN FEET BELOW GROUND SURFACE
 HIGHEST DETECTED PCP CONCENTRATION IN SOIL:
 AT OR BELOW MTCA METHOD B CLEANUP LEVEL



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PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

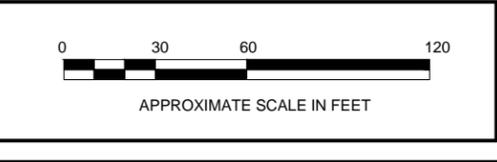
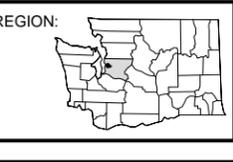
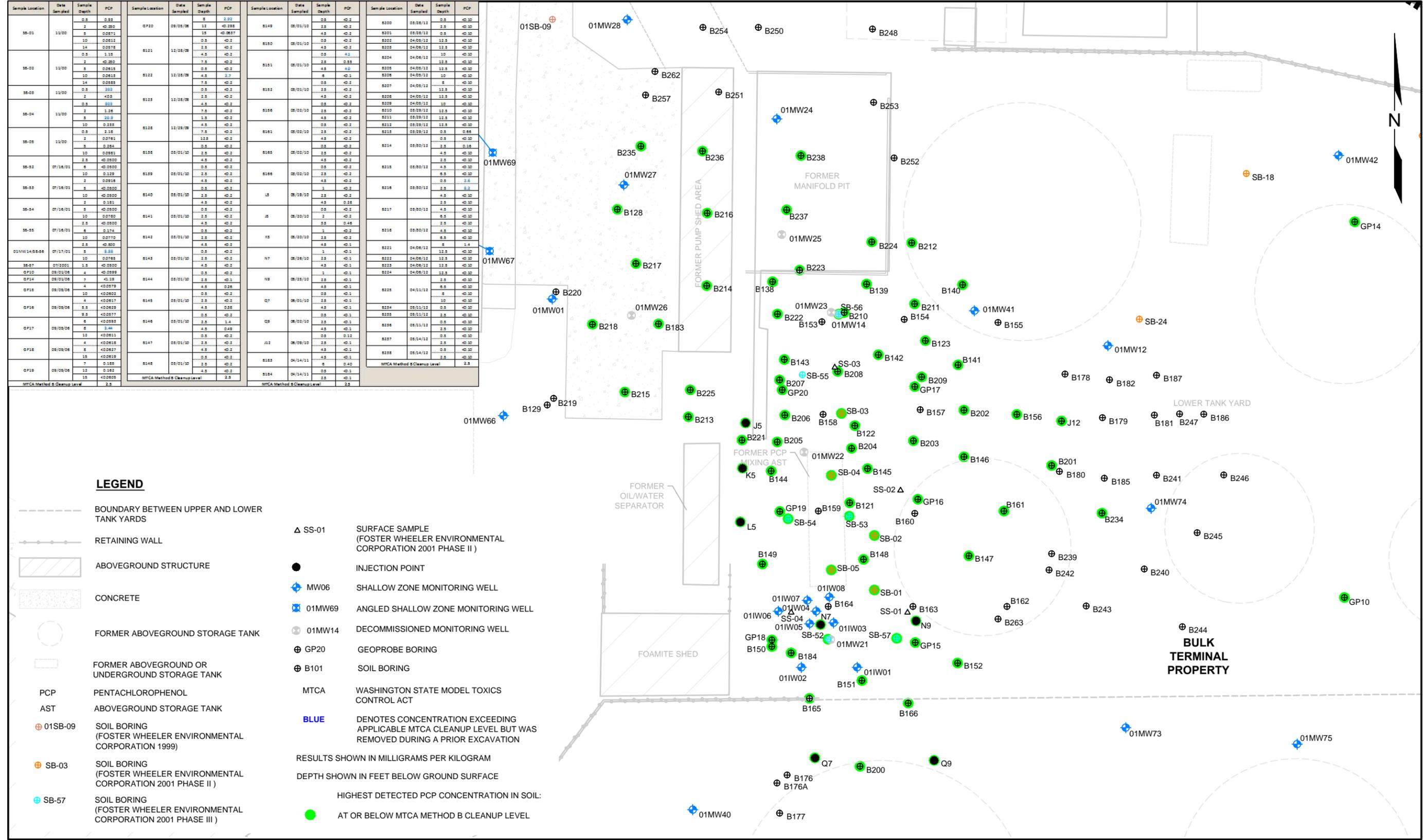


FIGURE 9A
HISTORICAL SOIL ANALYTICAL RESULTS FOR PCP

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6/18/2014



DATE: 06/28/13
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 CAD FILE: 01-600_2014RI_SD_PCP_Z

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

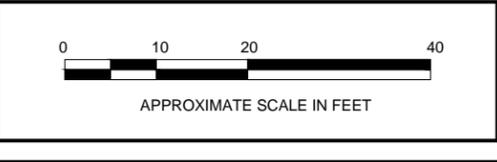
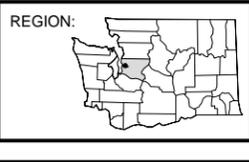


FIGURE 9B
 HISTORICAL SOIL ANALYTICAL
 RESULTS FOR PCP

SOUND EARTH INC.

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTPR\01-600_2014RI_SD_PAH E.DWG 6/18/2014

Sample Location	Date Sampled	Sample Depth	Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	cPAH TEQ
Bulk Terminal Property						
SB-27	11/00	5	--	--	--	0.35
01MW06/SB-29	11/00	2	--	--	--	1.75
		5	--	--	--	0.7
SB-59	07/19/01	2	--	--	--	0.00755
		5	--	--	--	0.0755
		10	--	--	--	0.114
		15	--	--	--	0.00755
01MW17/SB-61	07/19/01	2	--	--	--	0.00755
		5	--	--	--	0.0418
		10	--	--	--	0.00755
LR03	12/4/02	5	0.0619	0.78	1.39	0.00858
LR07	12/02	5	4.48	--	72.9	0.00755
GP01	08/31/06	8	<0.00712	--	--	--
		11	<0.00327	--	--	--
GP02	08/31/06	8	<0.00665	--	--	--
		11	<0.00640	--	--	--
GP03	08/31/06	8	<0.00688	--	--	--
		15	<0.00695	--	--	--
GP04	08/31/06	8	<0.00631	--	--	--
		10	<0.00688	--	--	--
GP05	08/31/06	8	<0.00683	--	--	--
		12	<0.00740	--	--	--
GP06	08/31/06	2	5.72	--	--	--
		9.5	<0.00646	--	--	--
GP07	08/31/06	5.5	<0.00666	--	--	--
		12	<0.00629	--	--	--
GP08	08/31/06	2.5	<0.495	--	--	--
		6	<0.00700	--	--	--
		12	<0.00650	--	--	--
MTCA Method A Cleanup Level						
		5	5	5	5	0.1

Sample Location	Date Sampled	Sample Depth	Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	cPAH TEQ
GP09	09/01/06	8	<0.0115	--	--	--
		12	<0.0110	--	--	--
GP11	09/01/06	8	<0.00646	--	--	--
		10	<0.00672	--	--	--
GP12	09/01/06	12	<0.00670	--	--	--
		15	<0.00664	--	--	--
GP13	09/01/06	8	<0.00752	--	--	--
		12	<0.00678	--	--	--
01MW37/SB58	09/07/06	14	<0.00628	--	--	--
		2.5	<0.0126	--	--	--
01MW38/SB59	09/07/06	7.5	<0.0108	--	--	--
		12.5	<0.0108	--	--	--
01MW39/SB60	09/07/06	2.5	<0.0106	--	--	--
		7.5	<0.0106	--	--	--
01MW43/SB64	09/08/06	12.5	<0.0100	--	--	--
		17.5	<0.00897	--	--	--
West Commodore Way						
01MW16/SB-60	07/19/01	2	--	--	--	0.00930
		5	--	--	--	0.00755
		10	--	--	--	0.00755
		15	--	--	--	0.00755
01MW30/SB01	04/21/06	15	<0.103	--	--	--
		10	0.0626	--	--	--
01MW31	07/06/06	10	<0.00994	--	--	--
01MW32	07/06/06	25	<0.00994	--	--	--
01MW33	07/07/06	8.5	<0.606	--	--	--
01MW35	07/07/06	1.6	<0.0454	--	--	--
01MW36	07/07/06	21	<0.00914	--	--	--
01MW48/SB9	11/30/06	28	<0.05	--	--	--
01MW50/SB71	12/21/06	18	<0.05	--	--	--
MTCA Method A Cleanup Level						
		5	5	5	5	0.1

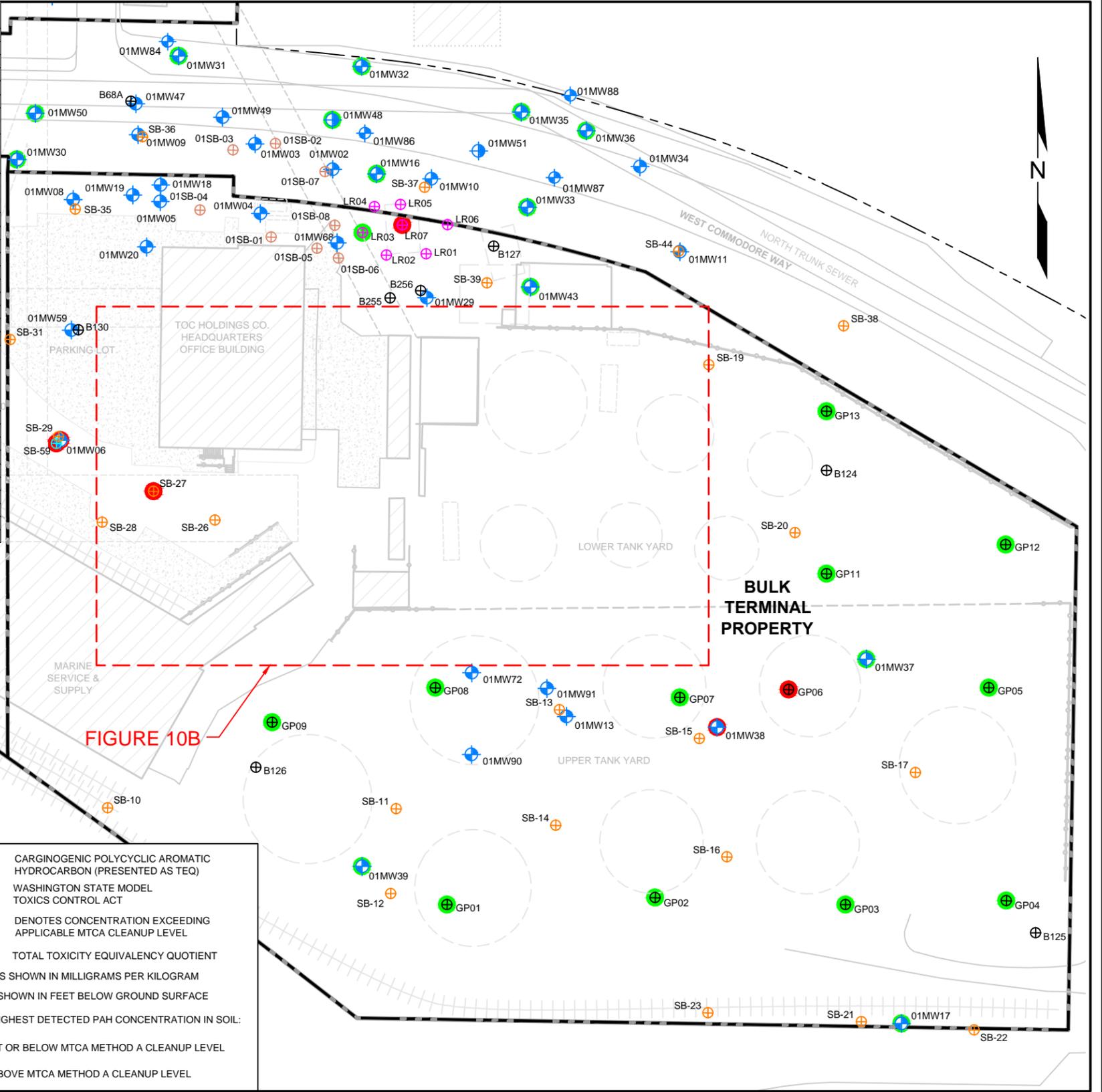


FIGURE 10B

LEGEND

	PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES		GEOPROBE BORING
	BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS		SOIL BORING
	RETAINING WALL		SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 1999)
	SHORELINE		SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
	BURLINGTON NORTHERN SANTA FE RAILROAD		SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE III)
	FORMER RAIL SPUR		SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2002 LOWER TANK YARD INVESTIGATION)
	ABOVEGROUND STRUCTURE		SHALLOW ZONE MONITORING WELL
	BELOW-GROUND STRUCTURE		INTERMEDIATE ZONE MONITORING WELL
	CONCRETE		DEEP ZONE MONITORING WELL
	FORMER ABOVEGROUND STORAGE TANK		PERCHED ZONE MONITORING WELL
	FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK		

CPAH CARGINOGENIC POLYCYCLIC AROMATIC HYDROCARBON (PRESENTED AS TEQ)
 MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
RED DENOTES CONCENTRATION EXCEEDING APPLICABLE MTCA CLEANUP LEVEL
 TEQ TOTAL TOXICITY EQUIVALENCY QUOTIENT
 RESULTS SHOWN IN MILLIGRAMS PER KILOGRAM
 DEPTH SHOWN IN FEET BELOW GROUND SURFACE
 HIGHEST DETECTED PAH CONCENTRATION IN SOIL:
 AT OR BELOW MTCA METHOD A CLEANUP LEVEL
 ABOVE MTCA METHOD A CLEANUP LEVEL



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 CAD FILE: 01-600_2014RI_SD_PAH

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

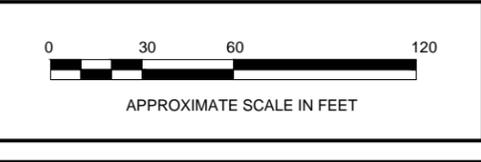
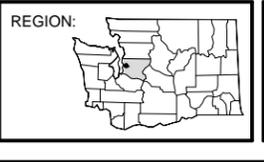


FIGURE 10A
 HISTORICAL SOIL ANALYTICAL RESULTS FOR SELECT PAHS

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Sample Location	Date Sampled	Sample Depth	Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	CPAH TEQ
SB-02	11/00	2	--	--	--	0.23
SB-03	11/00	0.5	--	--	--	1.08
SB-03	11/00	2	--	--	--	4.53
SB-03	11/00	0.5	--	--	--	2.67
SB-04	11/00	2	--	--	--	1.70
SB-04	11/00	5	--	--	--	8.09
SS-01	11/00	0-0.5	--	--	--	1.75
SS-03	11/00	0-0.5	--	--	--	1.75
SS-04	11/00	0-0.5	--	--	--	9.26
SB-52	07/16/01	2.5	--	--	--	0.0270
SB-52	07/16/01	6	--	--	--	0.00755
SB-52	07/16/01	10	--	--	--	0.00755
SB-53	07/16/01	2	--	--	--	0.0135
SB-53	07/16/01	5	--	--	--	0.00755
SB-53	07/16/01	10	--	--	--	0.00755
SB-54	07/16/01	2	--	--	--	0.141
SB-54	07/16/01	5	--	--	--	0.00755
SB-54	07/16/01	10	--	--	--	0.00755
SB-55	07/16/01	2.5	--	--	--	0.0182
SB-55	07/16/01	6	--	--	--	0.0193
SB-55	07/16/01	10	--	--	--	0.00755
01MW14/58-56	07/17/01	2.5	--	--	--	0.940
01MW14/58-56	07/17/01	5	--	--	--	0.864
01MW14/58-56	07/17/01	10	--	--	--	0.0105
SB-57	07/01	1.5	--	--	--	0.0769
01MW21	12/02/02	5	<0.01	--	--	--
01MW23	12/02/02	5	3.87	--	--	--
01MW23	12/02/02	5	1.84	5.08	8.51	0.0386
01MW24	12/3/02	5	2.79	5.78	10.4	0.00857
GP10	09/01/06	4	0.0335	--	--	--
GP10	09/01/06	7	25.9	--	--	--
GP10	09/01/06	15	0.0308	--	--	--
GP14	09/01/06	7	<0.00767	--	--	--
GP14	09/01/06	10	0.00728	--	--	--
GP14	09/01/06	15	<0.00999	--	--	--
01MW40/5851	09/07/06	2.5	<0.0110	--	--	--
01MW40/5851	09/07/06	7.5	<0.00953	--	--	--
01MW40/5851	09/07/06	12.5	<0.00860	--	--	--
01MW41/5852	09/08/06	2.5	<0.00962	--	--	--
01MW41/5852	09/08/06	7.5	<0.0101	--	--	--
01MW41/5852	09/08/06	12.5	<0.0110	--	--	--
01MW42/5853	09/08/06	2.5	<0.00930	--	--	--
01MW42/5853	09/08/06	7.5	<0.0101	--	--	--
01MW42/5853	09/08/06	12.5	<0.0100	--	--	--
MTC Method A Cleanup Level						
			5	5	5	0.1

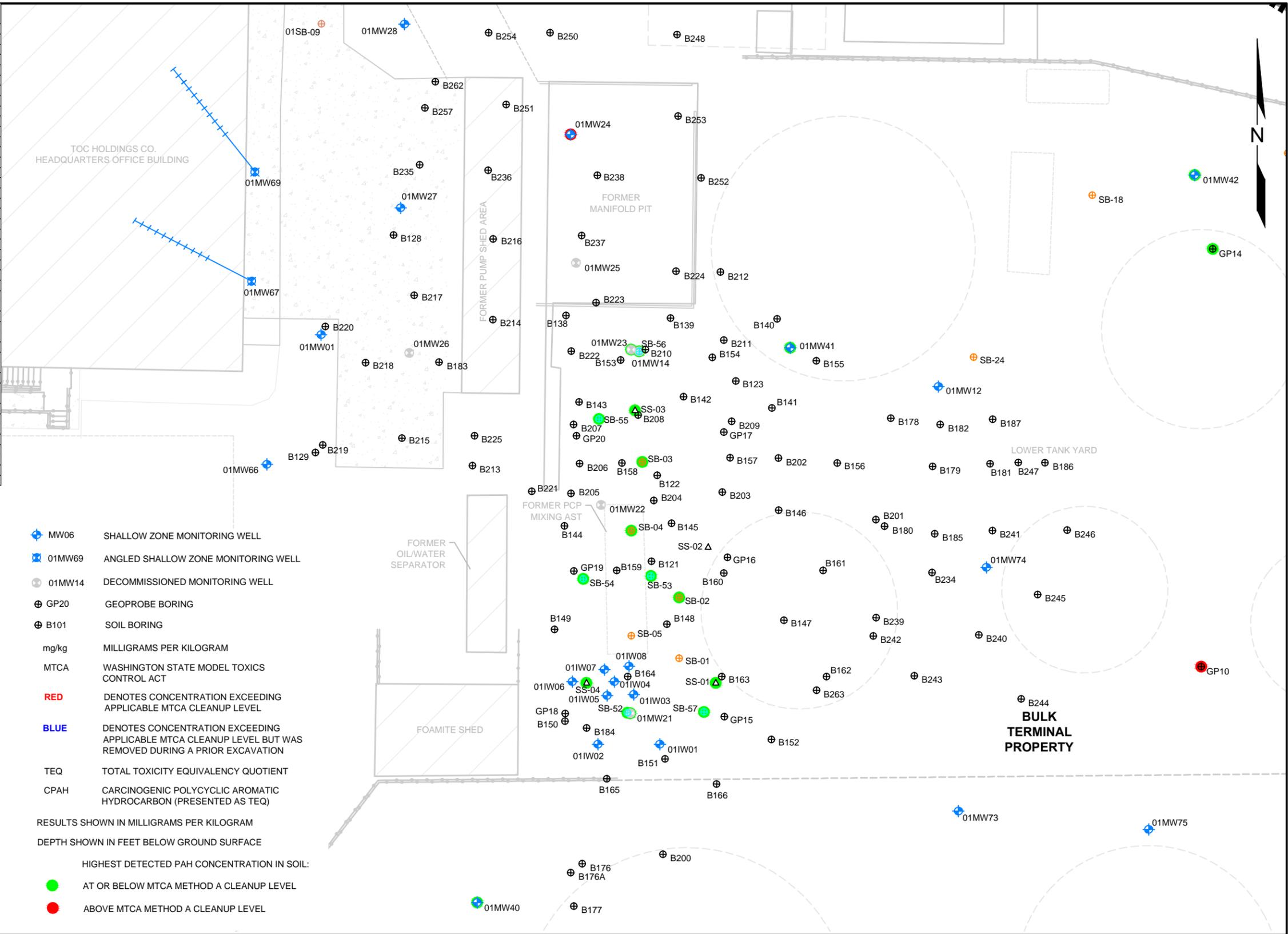
LEGEND

- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- ▨ ABOVEGROUND STRUCTURE
- ▨ CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- PCP PENTACHLOROPHENOL
- AST ABOVEGROUND STORAGE TANK
- △ SS-01 SURFACE SAMPLE (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
- ⊕ 01SB-09 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 1999)
- ⊕ SB-03 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
- ⊕ SB-57 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE III)
- ⊕ MW06 SHALLOW ZONE MONITORING WELL
- ⊕ 01MW69 ANGLED SHALLOW ZONE MONITORING WELL
- ⊕ 01MW14 DECOMMISSIONED MONITORING WELL
- ⊕ GP20 GEOPROBE BORING
- ⊕ B101 SOIL BORING
- mg/kg MILLIGRAMS PER KILOGRAM
- MTC WASHINGTON STATE MODEL TOXICS CONTROL ACT
- RED DENOTES CONCENTRATION EXCEEDING APPLICABLE MTC CLEANUP LEVEL
- BLUE DENOTES CONCENTRATION EXCEEDING APPLICABLE MTC CLEANUP LEVEL BUT WAS REMOVED DURING A PRIOR EXCAVATION
- TEQ TOTAL TOXICITY EQUIVALENCY QUOTIENT
- CPAH CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBON (PRESENTED AS TEQ)

RESULTS SHOWN IN MILLIGRAMS PER KILOGRAM
 DEPTH SHOWN IN FEET BELOW GROUND SURFACE

HIGHEST DETECTED PAH CONCENTRATION IN SOIL:

- AT OR BELOW MTC METHOD A CLEANUP LEVEL
- ABOVE MTC METHOD A CLEANUP LEVEL



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 SES PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

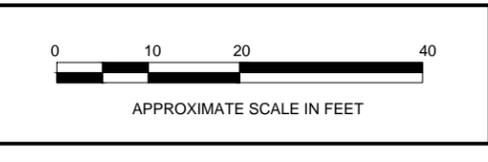
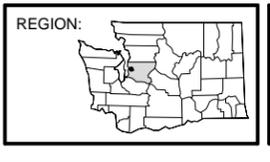
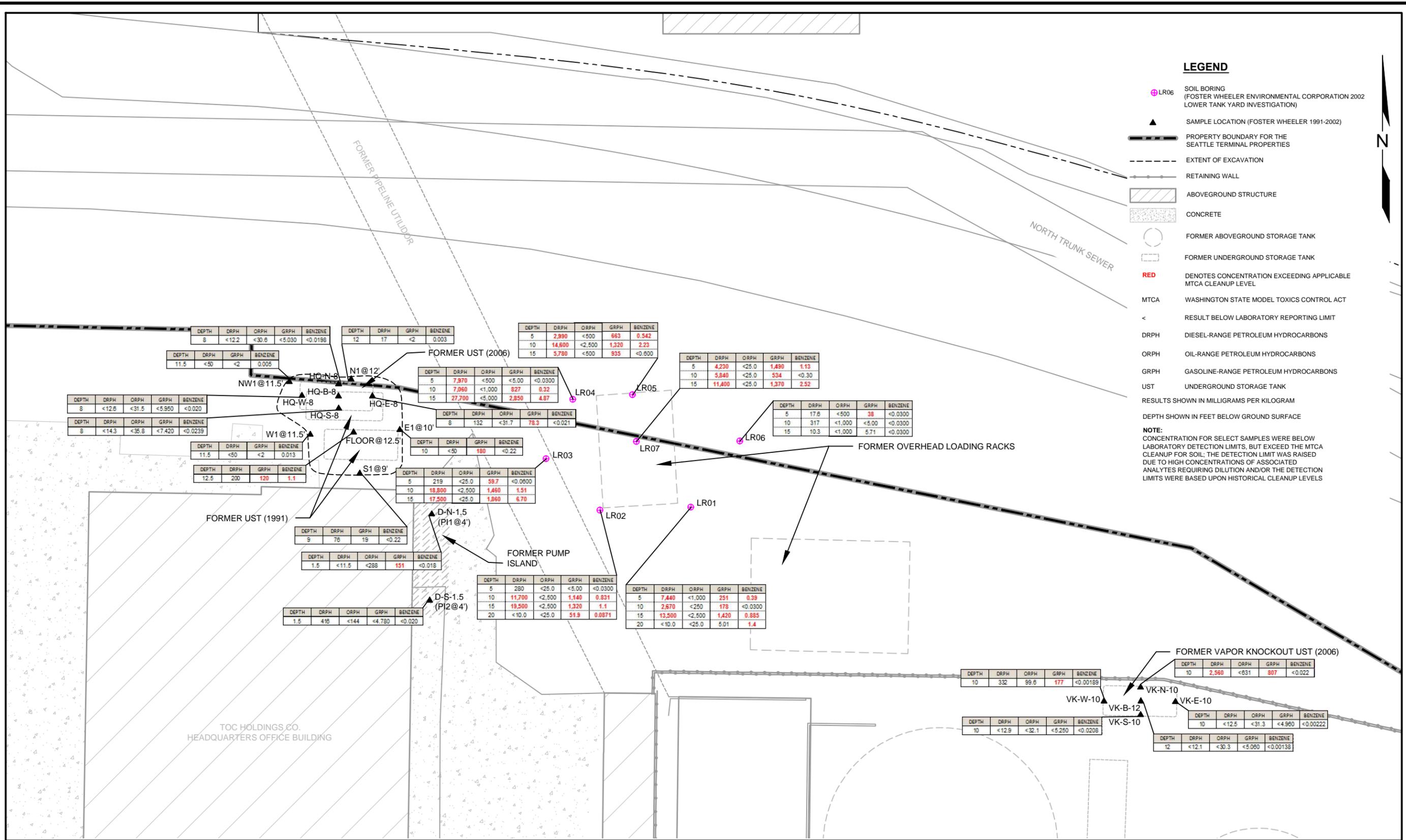


FIGURE 10B
 HISTORICAL SOIL ANALYTICAL RESULTS FOR SELECT PAHS



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 CAD FILE: 01-600_2014RI_IA_UST

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

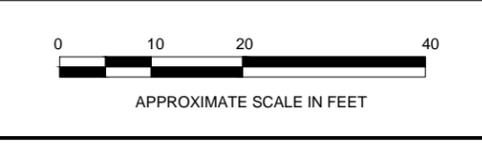
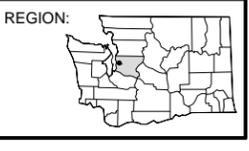
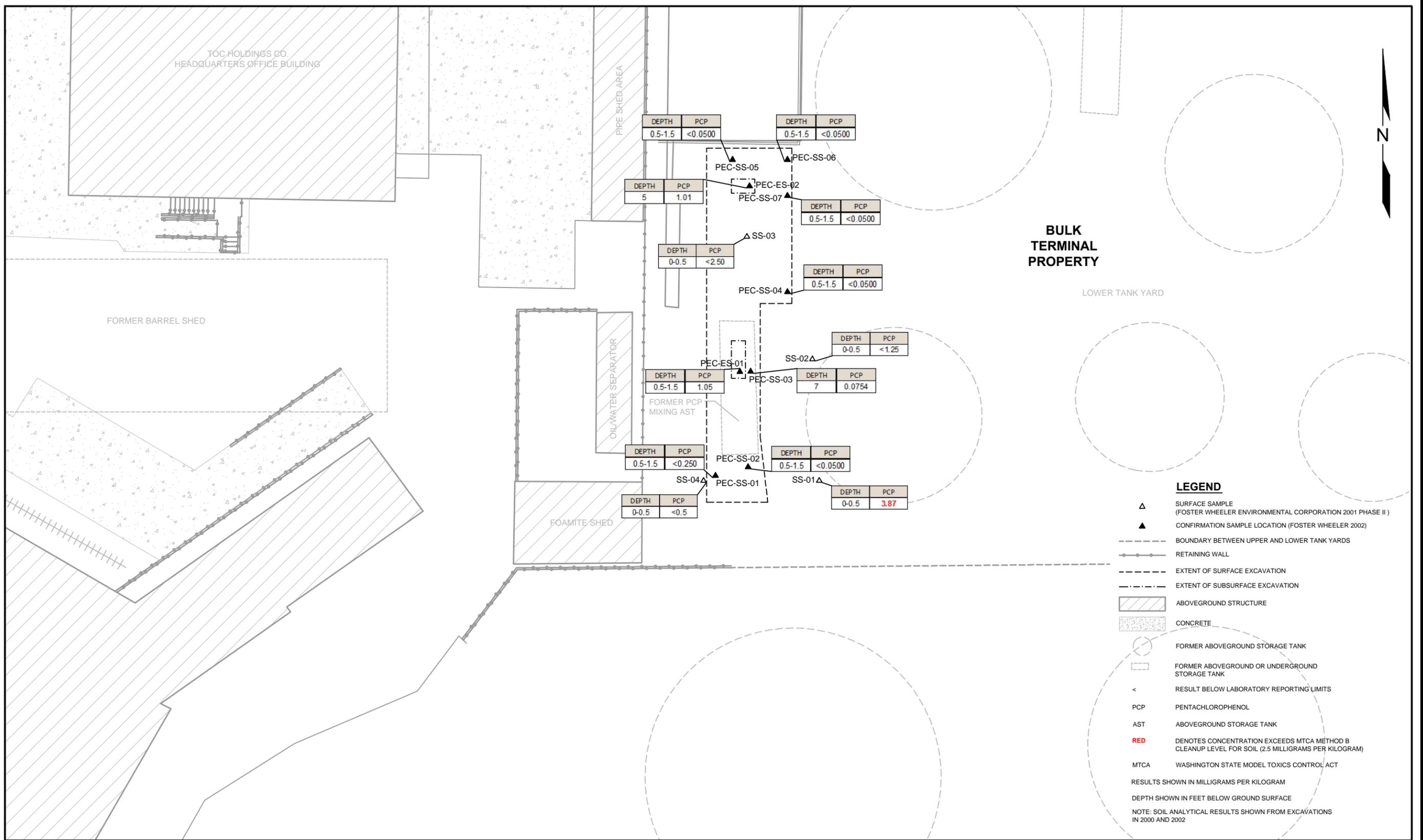


FIGURE 11
 FORMER USTs, PUMP ISLAND, AND OVERHEAD LOADING RACKS REMOVAL (1991, 2002, AND 2006)



LEGEND

- △ SURFACE SAMPLE (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
- ▲ CONFIRMATION SAMPLE LOCATION (FOSTER WHEELER 2002)
- - - BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- - - EXTENT OF SURFACE EXCAVATION
- - - EXTENT OF SUBSURFACE EXCAVATION
- ▨ ABOVEGROUND STRUCTURE
- ▤ CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- < RESULT BELOW LABORATORY REPORTING LIMITS
- PCP PENTACHLOROPHENOL
- AST ABOVEGROUND STORAGE TANK
- RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD B CLEANUP LEVEL FOR SOIL (2.5 MILLIGRAMS PER KILOGRAM)
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- RESULTS SHOWN IN MILLIGRAMS PER KILOGRAM
- DEPTH SHOWN IN FEET BELOW GROUND SURFACE
- NOTE: SOIL ANALYTICAL RESULTS SHOWN FROM EXCAVATIONS IN 2000 AND 2002



DATE: 03/31/10
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_IA_PCP

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
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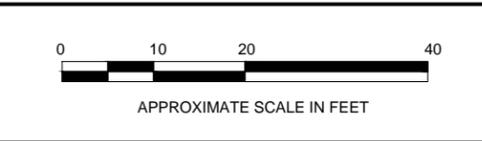
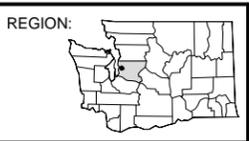
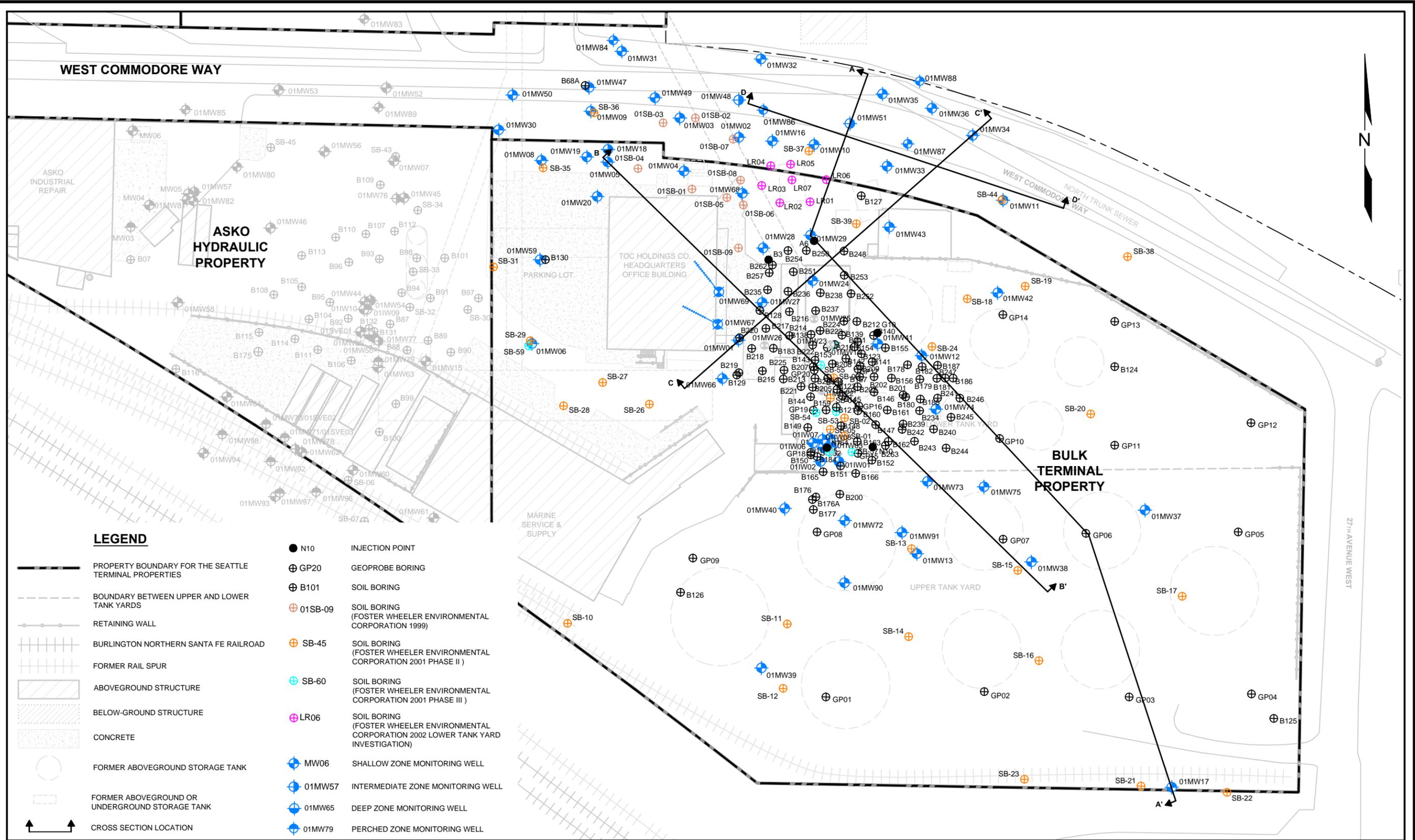


FIGURE 12
 FORMER PCP MIXING AST EXCAVATION
 (2002)



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- CROSS SECTION LOCATION
- N10 INJECTION POINT
- GP20 GEOPROBE BORING
- B101 SOIL BORING
- 01SB-09 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 1999)
- SB-45 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE II)
- SB-60 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2001 PHASE III)
- LR06 SOIL BORING (FOSTER WHEELER ENVIRONMENTAL CORPORATION 2002 LOWER TANK YARD INVESTIGATION)
- MW06 SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL



DATE: 06/28/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_XSLOC

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 SES PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

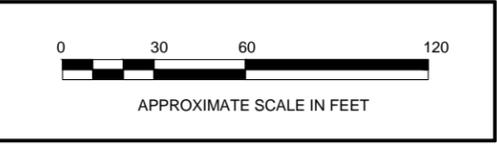
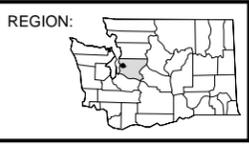
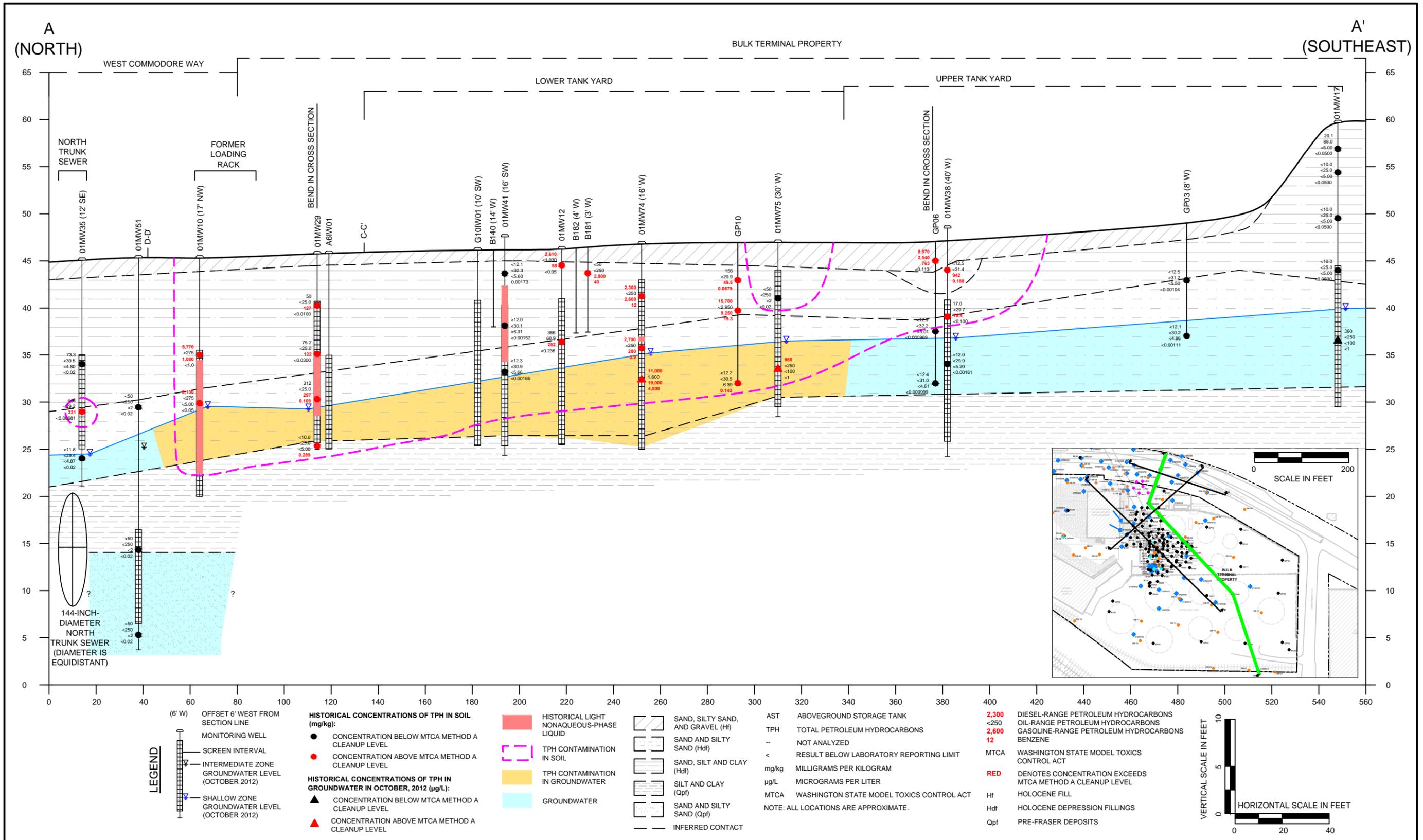


FIGURE 13
 CROSS SECTION LOCATION MAP



DATE: 07/12/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_XAA

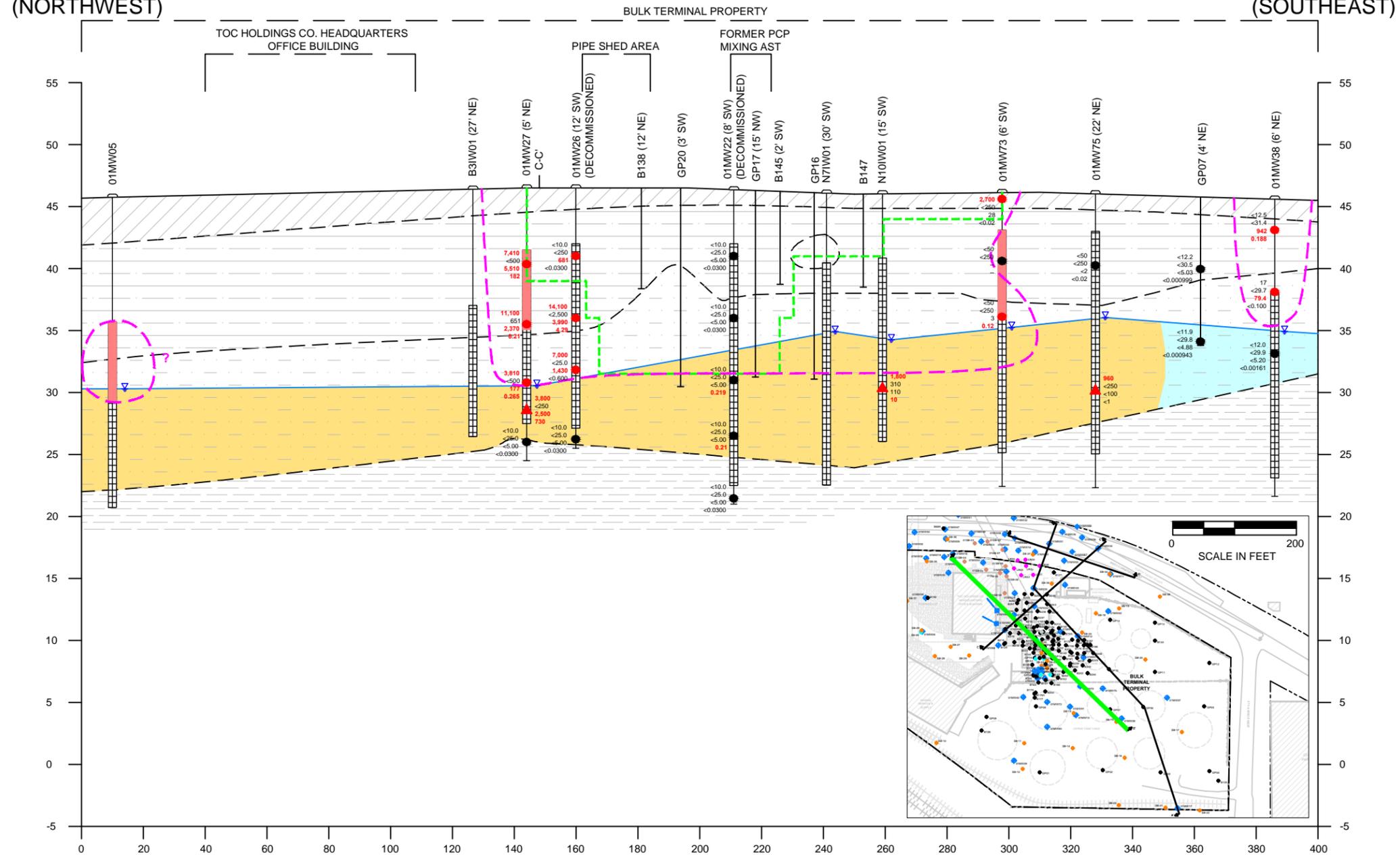
PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

REGION:

SCALE DEPICTED ABOVE

FIGURE 14
 CROSS SECTION A-A'

B (NORTHWEST) B' (SOUTHEAST)



LEGEND

- (6' W) OFFSET 6' WEST FROM SECTION LINE
- MONITORING WELL
- SCREEN INTERVAL
- SHALLOW ZONE GROUNDWATER LEVEL (OCTOBER 2012)

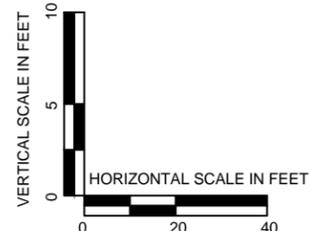
- HISTORICAL CONCENTRATIONS OF TPH IN SOIL (mg/kg):**
- CONCENTRATION BELOW MTCA METHOD A CLEANUP LEVEL
 - CONCENTRATION ABOVE MTCA METHOD A CLEANUP LEVEL
- HISTORICAL CONCENTRATIONS OF TPH IN GROUNDWATER IN OCTOBER, 2012 (µg/L):**
- ▲ CONCENTRATION BELOW MTCA METHOD A CLEANUP LEVEL
 - ▲ CONCENTRATION ABOVE MTCA METHOD A CLEANUP LEVEL

- HISTORICAL LIGHT NONAQUEOUS-PHASE LIQUID
- TPH CONTAMINATION IN SOIL
- TPH CONTAMINATION IN GROUNDWATER
- GROUNDWATER
- APPROXIMATE 2012 EXCAVATION LIMITS

- SAND, SILTY SAND, AND GRAVEL (H)
- SAND AND SILTY SAND (Hdf)
- SAND, SILT AND CLAY (Hdf)
- SILT AND CLAY (Qpf)
- INFERRED CONTACT

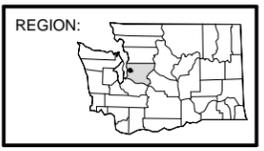
- AST ABOVEGROUND STORAGE TANK
- TPH TOTAL PETROLEUM HYDROCARBONS
- NOT ANALYZED
- < RESULT BELOW LABORATORY REPORTING LIMIT
- mg/kg MILLIGRAMS PER KILOGRAM
- µg/L MICROGRAMS PER LITER
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- NOTE: ALL LOCATIONS ARE APPROXIMATE.

- 3,800 DIESEL-RANGE PETROLEUM HYDROCARBONS
- <250 OIL-RANGE PETROLEUM HYDROCARBONS
- 2,500 GASOLINE-RANGE PETROLEUM HYDROCARBONS
- 730 BENZENE
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- Hf HOLOCENE FILL
- Hdf HOLOCENE DEPRESSION FILLINGS
- Qpf PRE-FRASER DEPOSITS



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 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_XBB

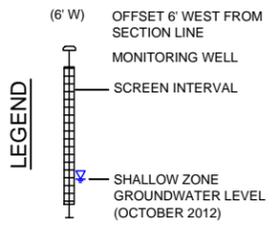
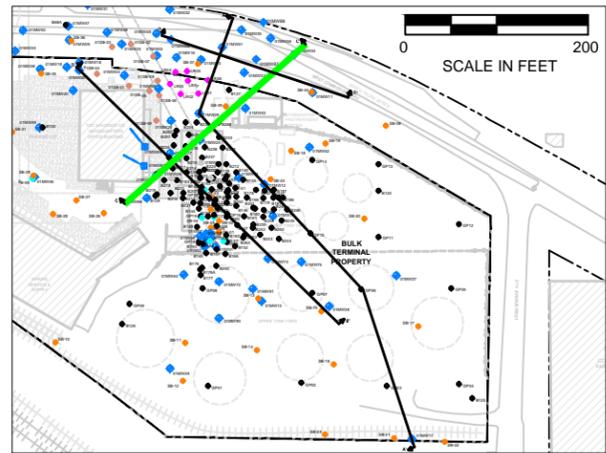
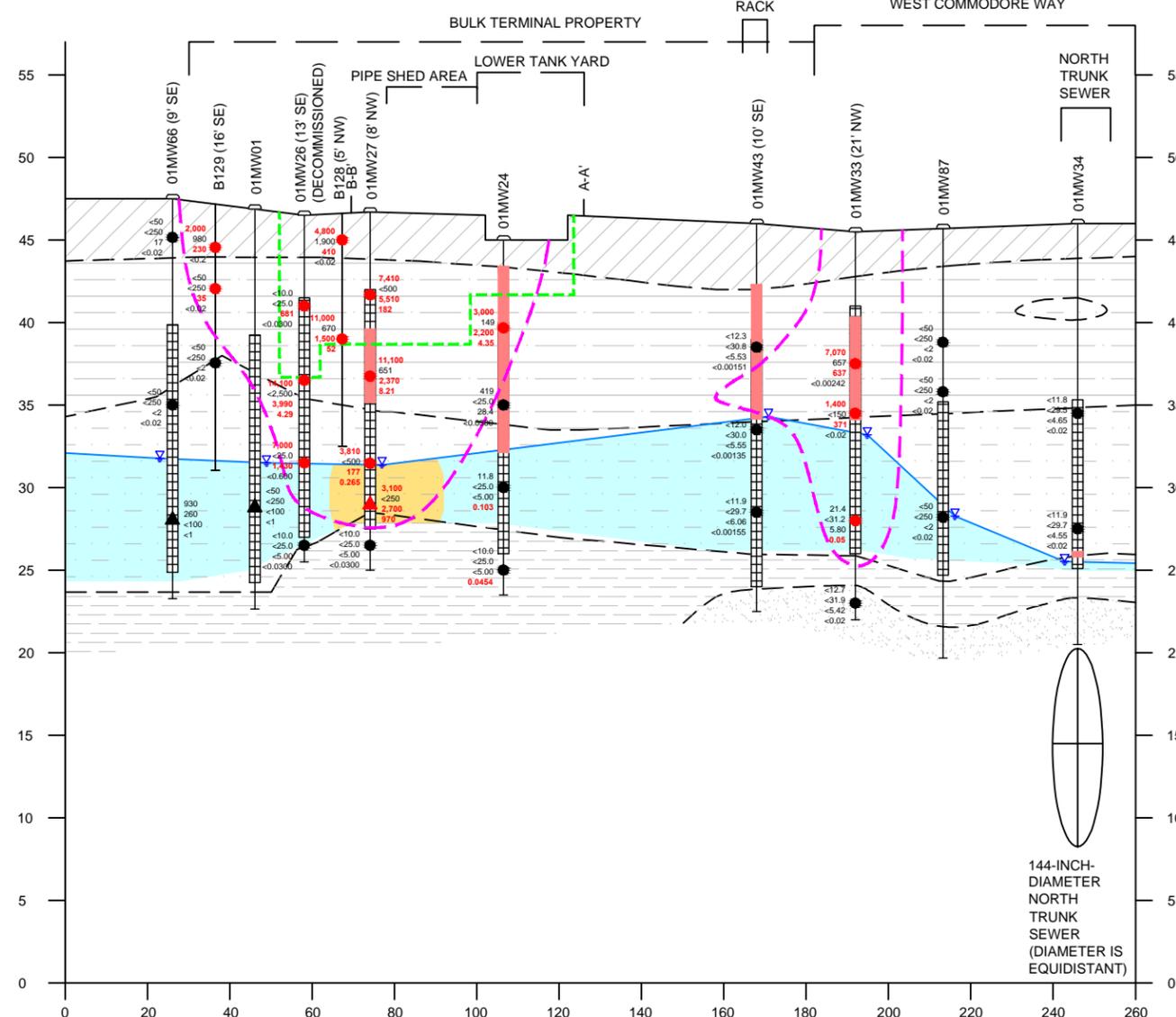
PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON



SCALE DEPICTED ABOVE

FIGURE 15
 CROSS SECTION B-B'

C (SOUTHWEST) C' (NORTHEAST)



HISTORICAL CONCENTRATIONS OF TPH IN SOIL (mg/kg):
 ● CONCENTRATION BELOW MTCA METHOD A CLEANUP LEVEL
 ● CONCENTRATION ABOVE MTCA METHOD A CLEANUP LEVEL

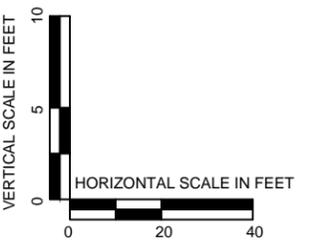
HISTORICAL CONCENTRATIONS OF TPH IN GROUNDWATER IN OCTOBER, 2012 (µg/L):
 ▲ CONCENTRATION BELOW MTCA METHOD A CLEANUP LEVEL
 ▲ CONCENTRATION ABOVE MTCA METHOD A CLEANUP LEVEL

HISTORICAL LIGHT NONAQUEOUS-PHASE LIQUID
 [Red shaded area] TPH CONTAMINATION IN SOIL
 [Yellow shaded area] TPH CONTAMINATION IN GROUNDWATER
 [Blue shaded area] GROUNDWATER
 [Dashed green line] APPROXIMATE 2012 EXCAVATION LIMITS

SOIL TYPES:
 [Diagonal lines] SAND, SILTY SAND, AND GRAVEL (Hf)
 [Horizontal lines] SAND AND SILTY SAND (Hdf)
 [Vertical lines] SAND, SILT AND CLAY (Hdf)
 [Stippled] SILT AND CLAY (Qpf)
 [Dotted] SAND AND SILTY SAND (Qpf)
 [Dashed] INFERRED CONTACT

AST ABOVEGROUND STORAGE TANK
TPH TOTAL PETROLEUM HYDROCARBONS
-- NOT ANALYZED
< RESULT BELOW LABORATORY REPORTING LIMIT
mg/kg MILLIGRAMS PER KILOGRAM
µg/L MICROGRAMS PER LITER
MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 NOTE: ALL LOCATIONS ARE APPROXIMATE.

3,100 DIESEL-RANGE PETROLEUM HYDROCARBONS
<250 OIL-RANGE PETROLEUM HYDROCARBONS
2,700 GASOLINE-RANGE PETROLEUM HYDROCARBONS
970 BENZENE
RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
Hf HOLOCENE FILL
Hdf HOLOCENE DEPRESSION FILLINGS
Qpf PRE-FRASER DEPOSITS



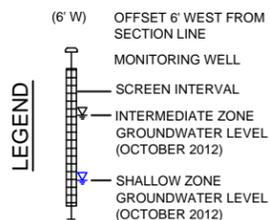
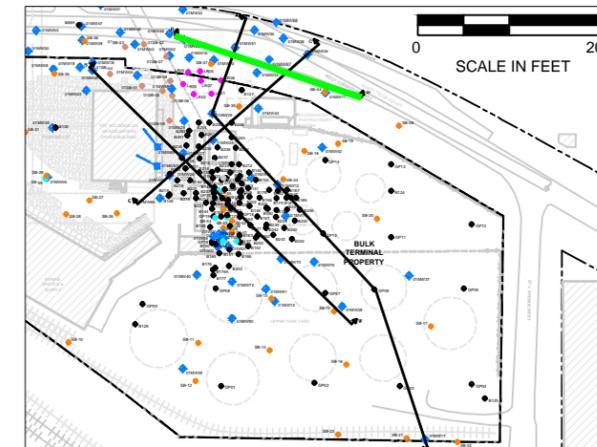
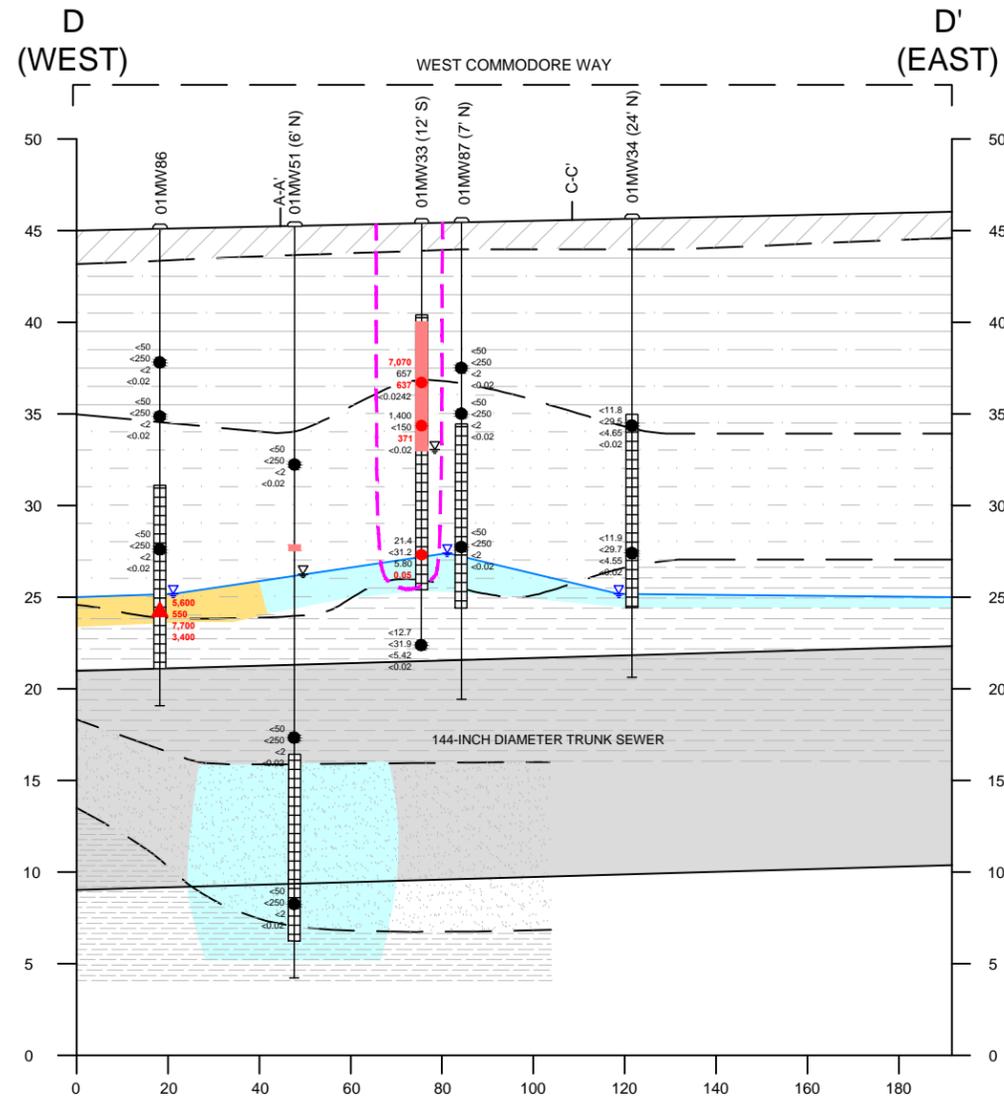
DATE: 07/12/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_XCC

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON



SCALE DEPICTED ABOVE

FIGURE 16 CROSS SECTION C-C'



HISTORICAL CONCENTRATIONS OF TPH IN SOIL (mg/kg):
 ● CONCENTRATION BELOW MTCA METHOD A CLEANUP LEVEL
 ● CONCENTRATION ABOVE MTCA METHOD A CLEANUP LEVEL

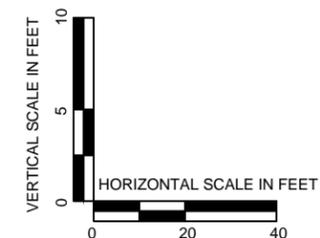
HISTORICAL CONCENTRATIONS OF TPH IN GROUNDWATER IN OCTOBER, 2012 (µg/L):
 ▲ CONCENTRATION BELOW MTCA METHOD A CLEANUP LEVEL
 ▲ CONCENTRATION ABOVE MTCA METHOD A CLEANUP LEVEL

■ HISTORICAL LIGHT NONAQUEOUS-PHASE LIQUID
 □ TPH CONTAMINATION IN SOIL
 □ TPH CONTAMINATION IN GROUNDWATER
 □ GROUNDWATER

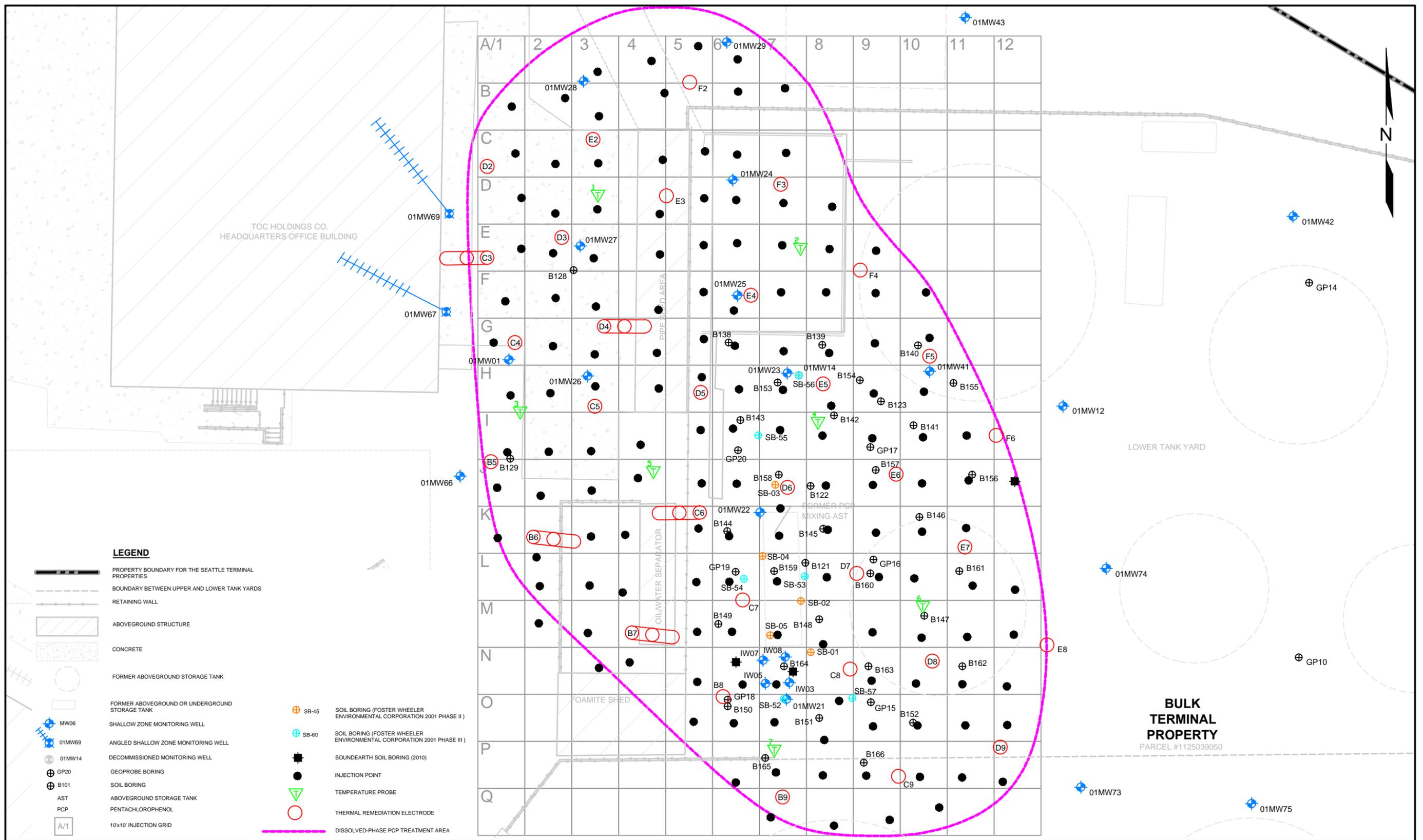
□ SAND, SILTY SAND, AND GRAVEL (Hf)
 □ SAND AND SILTY SAND (Hdf)
 □ SAND, SILT AND CLAY (Hdf)
 □ SILT AND CLAY (Qpf)
 □ SAND AND SILTY SAND (Qpf)
 - - INFERRED CONTACT

AST ABOVEGROUND STORAGE TANK
 TPH TOTAL PETROLEUM HYDROCARBONS
 - - NOT ANALYZED
 < RESULT BELOW LABORATORY REPORTING LIMIT
 mg/kg MILLIGRAMS PER KILOGRAM
 µg/L MICROGRAMS PER LITER
 MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 NOTE: ALL LOCATIONS ARE APPROXIMATE.

7,070 DIESEL-RANGE PETROLEUM HYDROCARBONS
 657 OIL-RANGE PETROLEUM HYDROCARBONS
 637 GASOLINE-RANGE PETROLEUM HYDROCARBONS
 <0.0242 BENZENE
 MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
 Hf HOLOCENE FILL
 Hdf HOLOCENE DEPRESSION FILLINGS
 Qpf PRE-FRASER DEPOSITS



Sample Location	Soil Sample Elevation (ft)	TCDD (ng/kg)	PCP (ng/kg)	Sample Location	Soil Sample Elevation (ft)	TCDD (ng/kg)	PCP (ng/kg)	Sample Location	Soil Sample Elevation (ft)	TCDD (ng/kg)	PCP (ng/kg)
GF15	42.5	<0.0579	<0.02	B163	44.5	35.2	<0.2	F8	42.1	0.166	—
GF16	42.5	<0.0617	<0.02	B164	44.5	14.0	<0.02	QB	42.1	0.0810	—
GF17	42.1	<0.0519	<0.02	B165	44.7	0.647	<0.2	JB	42.8	0.0714	—
GF18	42.1	<0.0519	<0.02	B166	44.7	30.6	<0.2	KB	42.8	0.386	—
GF19	40.1	<0.0577	<0.02	B167	44.7	1.28	<0.2	LB	42.8	0.166	—
GF20	40.1	<0.0589	<0.02	B168	44.7	6.27	<0.2	MB	42.8	0.139	—
B111	44	1.70	<0.2	B169	44.8	3.48	—	NB	42.8	0.0554	—
B112	42	0.0395	<0.2	B170	44.8	0.480	<0.2	OB	42.8	0.366	<0.2
B113	42.7	0.0860	<0.2	B171	44.8	1.08	<0.1	PB	42.8	0.466	<0.2
B114	42.7	0.0860	<0.2	B172	44.7	13.9	0.40	QB	42.8	0.466	<0.2
B115	41.7	0.271	2.7	B173	44.7	43.0	—	RB	42.8	0.139	—
B116	42.7	0.0344	<0.2	B174	44.5	—	<0.1	SB	42.8	1.89	—
B117	42.3	0.438	<0.2	B175	44.5	0.0371	<0.10	TB	42.8	0.32	0.32
B118	41.3	0.57	<0.2	B176	44.5	0.138	<0.10	UB	42.8	0.313	<0.1
B119	42.3	0.231	<0.2	B177	44.5	0.315	<0.10	VB	42.8	0.108	—
B120	42.1	0.197	<0.2	B178	44.5	0.0282	<0.10	WB	42.8	0.128	—
B121	42.1	0.197	<0.2	B179	44.5	0.0388	<0.10	XB	42.8	0.128	—
B122	42.1	0.197	<0.2	B180	44.5	0.0438	<0.10	YB	42.8	0.128	—
B123	42.1	0.197	<0.2	B181	44.5	0.0438	<0.10	ZB	42.8	0.128	—
B124	42.1	0.197	<0.2	B182	44.5	0.0438	<0.10	AB	42.8	0.128	—
B125	42.1	0.197	<0.2	B183	44.5	0.0438	<0.10	BB	42.8	0.128	—
B126	42.1	0.197	<0.2	B184	44.5	0.0438	<0.10	CB	42.8	0.128	—
B127	42.1	0.197	<0.2	B185	44.5	0.0438	<0.10	DB	42.8	0.128	—
B128	42.1	0.197	<0.2	B186	44.5	0.0438	<0.10	EB	42.8	0.128	—
B129	42.1	0.197	<0.2	B187	44.5	0.0438	<0.10	FB	42.8	0.128	—
B130	42.1	0.197	<0.2	B188	44.5	0.0438	<0.10	GB	42.8	0.128	—
B131	42.1	0.197	<0.2	B189	44.5	0.0438	<0.10	HB	42.8	0.128	—
B132	42.1	0.197	<0.2	B190	44.5	0.0438	<0.10	IB	42.8	0.128	—
B133	42.1	0.197	<0.2	B191	44.5	0.0438	<0.10	JB	42.8	0.128	—
B134	42.1	0.197	<0.2	B192	44.5	0.0438	<0.10	KB	42.8	0.128	—
B135	42.1	0.197	<0.2	B193	44.5	0.0438	<0.10	LB	42.8	0.128	—
B136	42.1	0.197	<0.2	B194	44.5	0.0438	<0.10	MB	42.8	0.128	—
B137	42.1	0.197	<0.2	B195	44.5	0.0438	<0.10	NB	42.8	0.128	—
B138	42.1	0.197	<0.2	B196	44.5	0.0438	<0.10	OB	42.8	0.128	—
B139	42.1	0.197	<0.2	B197	44.5	0.0438	<0.10	PB	42.8	0.128	—
B140	42.1	0.197	<0.2	B198	44.5	0.0438	<0.10	QB	42.8	0.128	—
B141	42.1	0.197	<0.2	B199	44.5	0.0438	<0.10	RB	42.8	0.128	—
B142	42.1	0.197	<0.2	B200	44.5	0.0438	<0.10	SB	42.8	0.128	—
B143	42.1	0.197	<0.2	B201	44.5	0.0438	<0.10	TB	42.8	0.128	—
B144	42.1	0.197	<0.2	B202	44.5	0.0438	<0.10	UB	42.8	0.128	—
B145	42.1	0.197	<0.2	B203	44.5	0.0438	<0.10	VB	42.8	0.128	—
B146	42.1	0.197	<0.2	B204	44.5	0.0438	<0.10	WB	42.8	0.128	—
B147	42.1	0.197	<0.2	B205	44.5	0.0438	<0.10	XB	42.8	0.128	—
B148	42.1	0.197	<0.2	B206	44.5	0.0438	<0.10	YB	42.8	0.128	—
B149	42.1	0.197	<0.2	B207	44.5	0.0438	<0.10	ZB	42.8	0.128	—
B150	42.1	0.197	<0.2	B208	44.5	0.0438	<0.10	AB	42.8	0.128	—
B151	42.1	0.197	<0.2	B209	44.5	0.0438	<0.10	BB	42.8	0.128	—
B152	42.1	0.197	<0.2	B210	44.5	0.0438	<0.10	CB	42.8	0.128	—
B153	42.1	0.197	<0.2	B211	44.5	0.0438	<0.10	DB	42.8	0.128	—
B154	42.1	0.197	<0.2	B212	44.5	0.0438	<0.10	EB	42.8	0.128	—
B155	42.1	0.197	<0.2	B213	44.5	0.0438	<0.10	FB	42.8	0.128	—
B156	42.1	0.197	<0.2	B214	44.5	0.0438	<0.10	GB	42.8	0.128	—
B157	42.1	0.197	<0.2	B215	44.5	0.0438	<0.10	HB	42.8	0.128	—
B158	42.1	0.197	<0.2	B216	44.5	0.0438	<0.10	IB	42.8	0.128	—
B159	42.1	0.197	<0.2	B217	44.5	0.0438	<0.10	JB	42.8	0.128	—
B160	42.1	0.197	<0.2	B218	44.5	0.0438	<0.10	KB	42.8	0.128	—
B161	42.1	0.197	<0.2	B219	44.5	0.0438	<0.10	LB	42.8	0.128	—
B162	42.1	0.197	<0.2	B220	44.5	0.0438	<0.10	MB	42.8	0.128	—
B163	42.1	0.197	<0.2	B221	44.5	0.0438	<0.10	NB	42.8	0.128	—
B164	42.1	0.197	<0.2	B222	44.5	0.0438	<0.10	OB	42.8	0.128	—
B165	42.1	0.197	<0.2	B223	44.5	0.0438	<0.10	PB	42.8	0.128	—
B166	42.1	0.197	<0.2	B224	44.5	0.0438	<0.10	QB	42.8	0.128	—
B167	42.1	0.197	<0.2	B225	44.5	0.0438	<0.10	RB	42.8	0.128	—
B168	42.1	0.197	<0.2	B226	44.5	0.0438	<0.10	SB	42.8	0.128	—
B169	42.1	0.197	<0.2	B227	44.5	0.0438	<0.10	TB	42.8	0.128	—
B170	42.1	0.197	<0.2	B228	44.5	0.0438	<0.10	UB	42.8	0.128	—
B171	42.1	0.197	<0.2	B229	44.5	0.0438	<0.10	VB	42.8	0.128	—
B172	42.1	0.197	<0.2	B230	44.5	0.0438	<0.10	WB	42.8	0.128	—
B173	42.1	0.197	<0.2	B231	44.5	0.0438	<0.10	XB	42.8	0.128	—
B174	42.1	0.197	<0.2	B232	44.5	0.0438	<0.10	YB	42.8	0.128	—
B175	42.1	0.197	<0.2	B233	44.5	0.0438	<0.10	ZB	42.8	0.128	—
B176	42.1	0.197	<0.2	B234	44.5	0.0438	<0.10	AB	42.8	0.128	—
B177	42.1	0.197	<0.2	B235	44.5	0.0438	<0.10	BB	42.8	0.128	—
B178	42.1	0.197	<0.2	B236	44.5	0.0438	<0.10	CB	42.8	0.128	—
B179	42.1	0.197	<0.2	B237	44.5	0.0438	<0.10	DB	42.8	0.128	—
B180	42.1	0.197	<0.2	B238	44.5	0.0438	<0.10	EB	42.8	0.128	—
B181	42.1	0.197	<0.2	B239	44.5	0.0438	<0.10	FB	42.8	0.128	—
B182	42.1	0.197	<0.2	B240	44.5	0.0438	<0.10	GB	42.8	0.128	—
B183	42.1	0.197	<0.2	B241	44.5	0.0438	<0.10	HB	42.8	0.128	—
B184	42.1	0.197	<0.2	B242	44.5	0.0438	<0.10	IB	42.8	0.128	—
B185	42.1	0.197	<0.2	B243	44.5	0.0438	<0.10	JB	42.8	0.128	—
B186	42.1	0.197	<0.2	B244	44.5	0.0438	<0.10	KB	42.8	0.128	—
B187	42.1	0.197	<0.2	B245	44.5	0.0438	<0.10	LB	42.8	0.128	—
B188	42.1	0.197	<0.2	B246	44.5	0.0438	<0.10	MB	42.8	0.128	—
B189	42.1	0.197	<0.2	B247	44.5	0.0438	<0.10	NB	42.8	0.128	—
B190	42.1	0.197	<0.2	B248	44.5	0.0438	<0.10	OB	42.8	0.128	—
B191	42.1	0.197	<0.2	B249	44.5	0.0438	<0.10	PB	42.8	0.128	—
B192	42.1	0.197	<0.2	B250	44.5	0.0438	<0.10	QB	42.8	0.128	—
B193	42.1	0.197	<0.2	B251	44.5	0.0438	<0.10	RB	42.8	0.128	—
B194	42.1	0.197	<0.2	B252	44.5	0.0438	<0.10	SB	42.8	0.128	—
B195	42.1	0.197	<0.2	B253	44.5	0.0438	<0.10	TB	42.8	0.128	—
B196	42.1	0.197	<0.2	B254	44.5	0.0438	<0.10	UB	42.8	0.128	—
B197	42.1	0.197	<0.2	B255	44.5	0.0438	<0.10	VB	42.8	0.128	—
B198	42.1	0.197	<0.2	B256	44.5	0.0438	<0.10	WB	42.8	0.128	—
B199	42.1	0.197	<0.2	B257	44.5	0.0438	<0.10	XB	42.8	0.128	—
B200	42.1	0.197	<0.2	B258	44.5	0.0438	<0.10	YB	42.8	0.128	—
B201</											



DATE: 07/19/10
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 CAD FILE: 01-600_2014RI_INJ

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

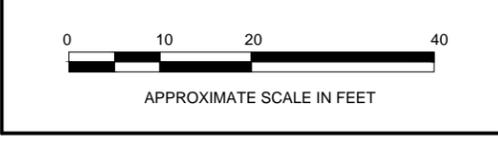
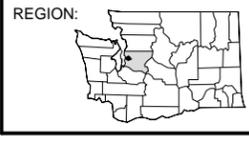
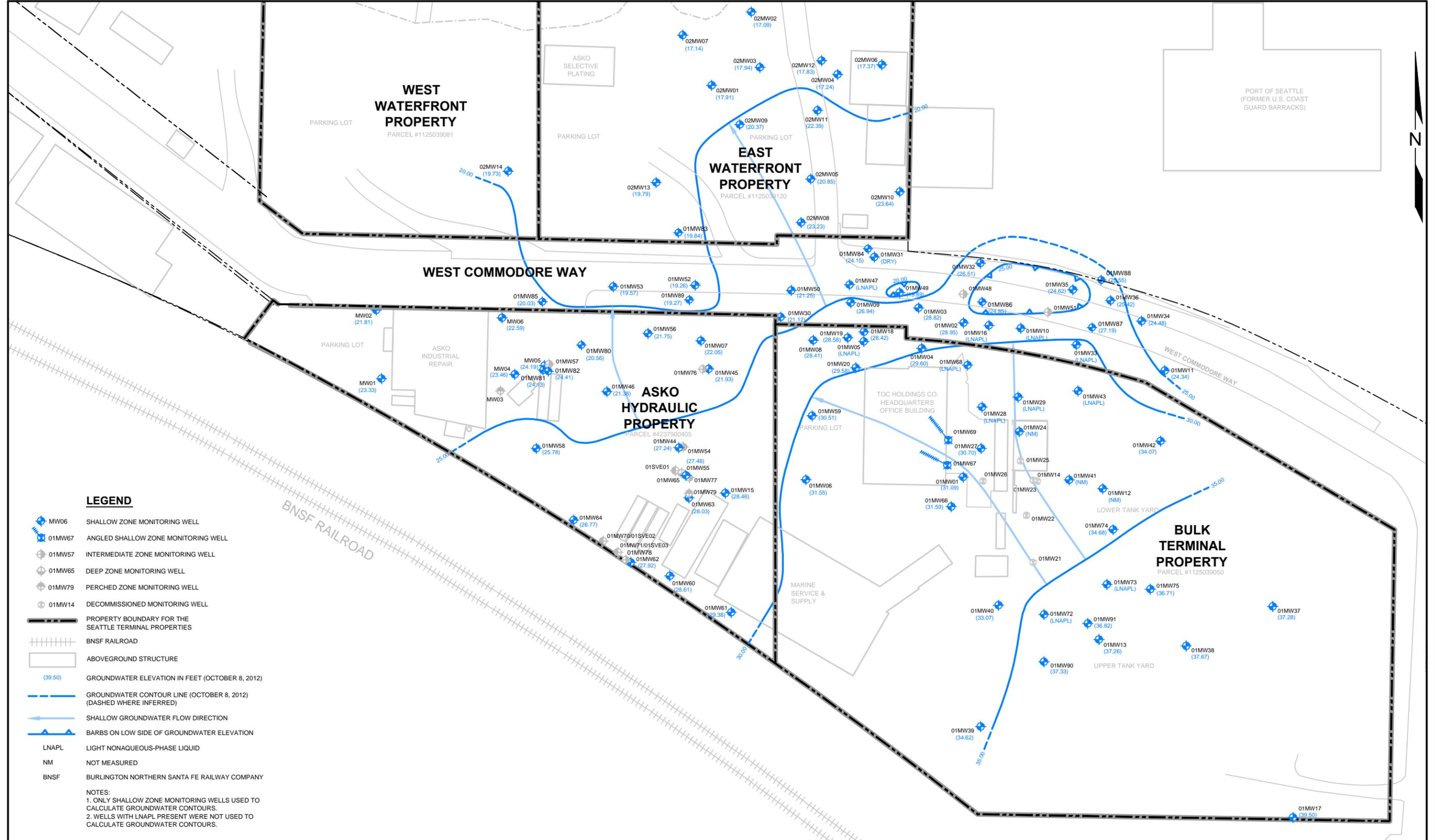


FIGURE 20
 INJECTION AS-BUILT



LEGEND

- MW06 SHALLOW ZONE MONITORING WELL
- 01MW67 ANGLED SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BNSF RAILROAD
- ABOVEGROUND STRUCTURE
- (39.50) GROUNDWATER ELEVATION IN FEET (OCTOBER 8, 2012)
- GROUNDWATER CONTOUR LINE (OCTOBER 8, 2012) (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW DIRECTION
- BARBS ON LOW SIDE OF GROUNDWATER ELEVATION
- LNAPL LIGHT NONAQUEOUS-PHASE LIQUID
- NM NOT MEASURED
- BNSF BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY

NOTES:
 1. ONLY SHALLOW ZONE MONITORING WELLS USED TO CALCULATE GROUNDWATER CONTOURS.
 2. WELLS WITH LNAPL PRESENT WERE NOT USED TO CALCULATE GROUNDWATER CONTOURS.



DATE: 11/28/12
 DRAWN BY: NAC
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 CAD FILE: 01-600_2014R1_CM

PROJECT NAME: TOC HOLDINGS CO. SEATTLE TERMINAL PROPERTIES
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737, 2750, 2800, AND 2805 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

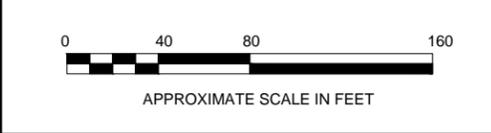
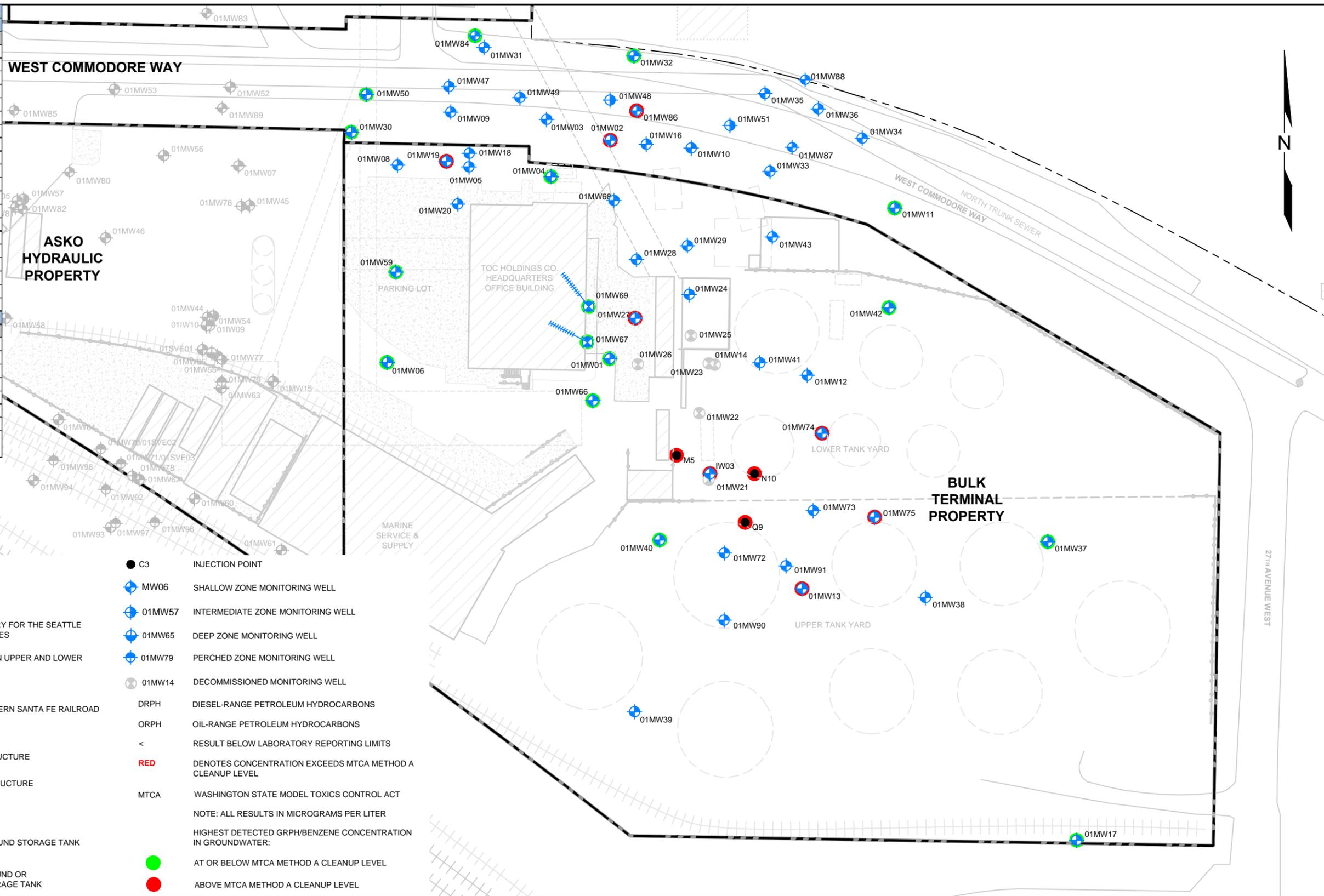


FIGURE 21
 GROUNDWATER CONTOUR MAP
 SHALLOW WATER-BEARING ZONE
 (OCTOBER 8, 2012)

6/18/2014

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTP\RI\01-600_2014RI_GD_DO_F.DWG

Well ID	DRPH	ORPH
Bulk Terminal Property		
Shallow Water-Bearing Zone		
01MW01	<50	<250
01MW04	300	<250
01MW06	55	<250
01MW13	2,900	440
01MW17	360	<250
01MW19	2,400	<250
01MW27	3,800	<250
01MW37	340	<250
01MW40	500	<250
01MW42	350	<250
01MW59	420	<250
01MW66	250	<250
01MW67	110	<250
01MW69	270	<250
01MW74	11,000	1,600
01MW75	960	<250
M5	740	<250
N10	1,800	310
Q9	2,600	940
IW03	1,700	550
West Commodore Way		
Shallow Water-Bearing Zone		
01MW02	5,400	290
01MW11	400	<250
01MW30	200	<250
01MW32	<50	<250
01MW50	290	<250
01MW84	410	<250
01MW86	5,600	550
MTCA Method A Cleanup Level		
	500	500



DATE: 06/28/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_GD_DO

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

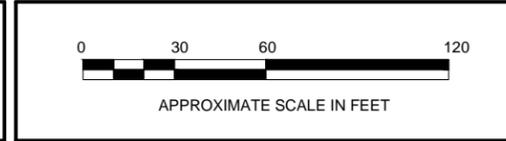


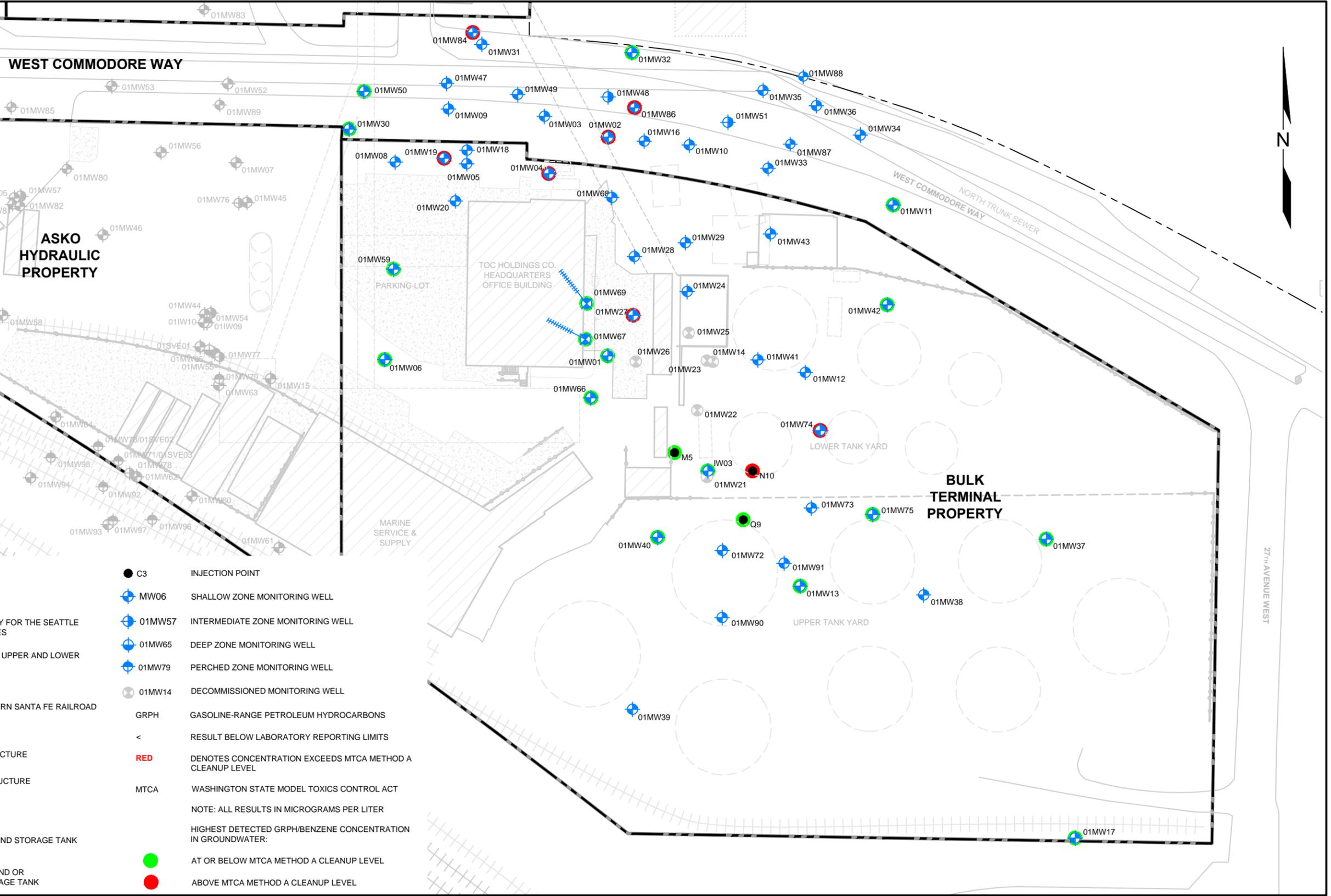
FIGURE 22
 GROUNDWATER ANALYTICAL RESULTS
 FOR DRPH AND ORPH
 (OCTOBER 2012)

SOUND EARTH INC.

6/18/2014

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTP\RI\01-600_2014RI_GD_GB_F.DWG

Well ID	GRPH	Benzene
Bulk Terminal Property		
Shallow Water-Bearing Zone		
01MW01	<100	<1
01MW04	750	170
01MW06	<100	<1
01MW13	<100	<1
01MW17	<100	<1
01MW19	16,000	3,200
01MW27	2,500	730
01MW37	<100	<1
01MW40	<100	<1
01MW42	<100	<1
01MW59	<100	<1
01MW66	<100	<1
01MW67	<100	<1
01MW69	440	4.6
01MW74	19,000	4,800
01MW75	<100	<1
M5IW01	<100	<1
N10IW01	110	10
Q9IW01	<100	<1
IW03	<100	<1
West Commodore Way		
Shallow Water-Bearing Zone		
01MW02	28,000	8,300
01MW11	<100	<1
01MW30	<100	<1
01MW32	<100	<1
01MW50	<100	<1
01MW84	2,200	4.1
01MW86	7,700	3,400
MTCA Method A Cleanup Level		
	800	5



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- C3 INJECTION POINT
- MW06 SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- GRPH GASOLINE-RANGE PETROLEUM HYDROCARBONS
- < RESULT BELOW LABORATORY REPORTING LIMITS
- DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- AT OR BELOW MTCA METHOD A CLEANUP LEVEL
- ABOVE MTCA METHOD A CLEANUP LEVEL

NOTE: ALL RESULTS IN MICROGRAMS PER LITER
HIGHEST DETECTED GRPH/BENZENE CONCENTRATION IN GROUNDWATER:



DATE: 06/28/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_GD_GB

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

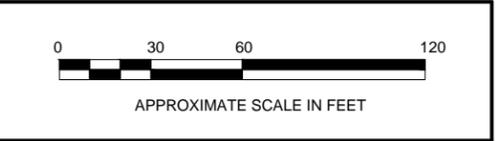
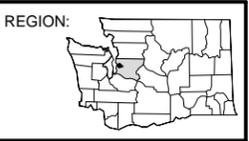


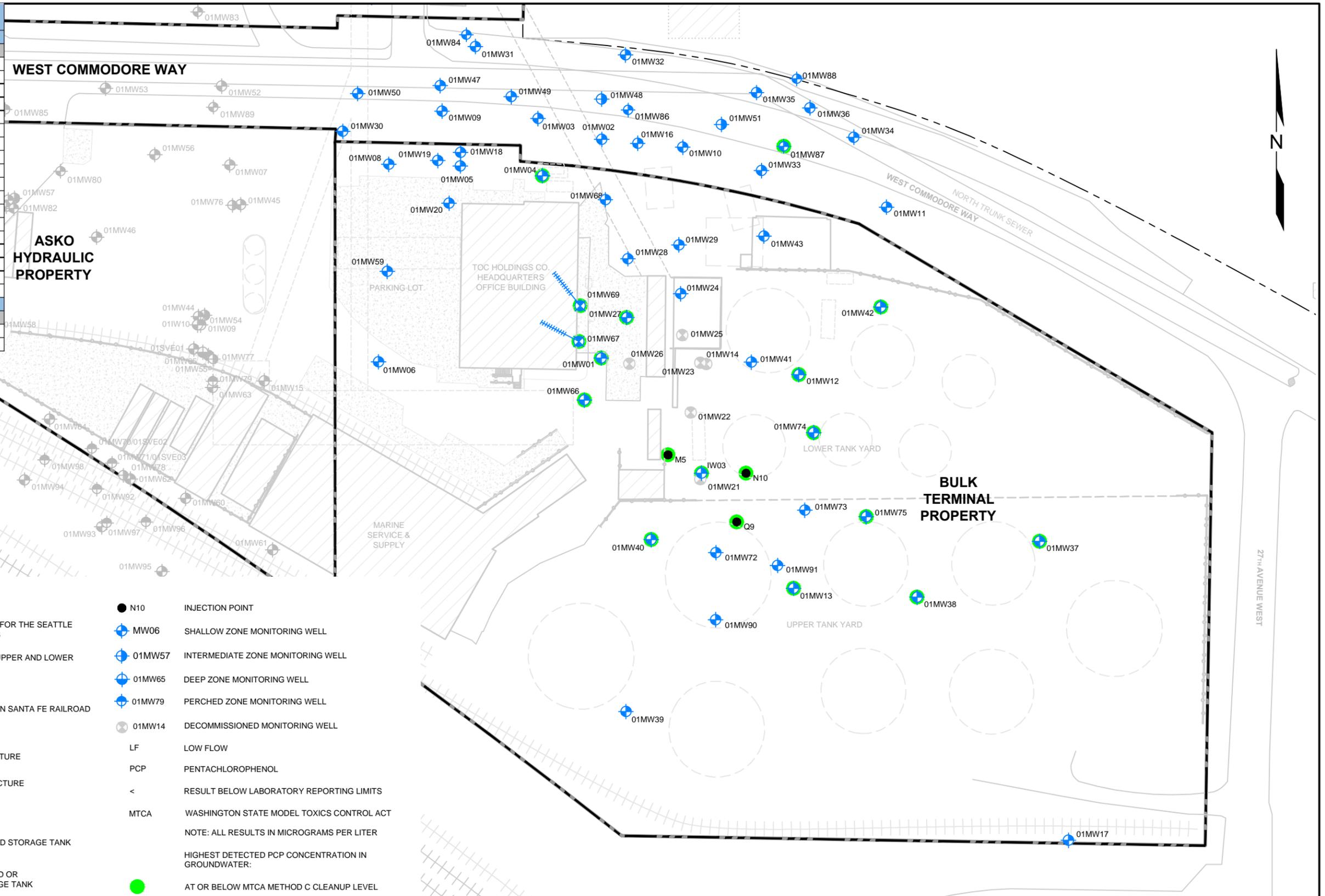
FIGURE 23
 GROUNDWATER ANALYTICAL RESULTS FOR GRPH AND BENZENE (OCTOBER 2012)

SOUND EARTH INC.

6/18/2014

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTP\RI\01-600_2014RI_GD_PCP_F.DWG

Well ID	Sample Method	PCP
Bulk Terminal Property		
Shallow Water-Bearing Zone		
01MW01	LF	0.38
01MW04	LF	<0.2
01MW12	LF	<0.2
01MW13	LF	<0.2
01MW27	LF	<0.2
01MW37	LF	<0.2
01MW38	LF	<0.2
01MW40	LF	<0.2
01MW42	LF	<0.2
01MW66	LF	<0.2
01MW67	LF	<0.2
01MW69	LF	<0.2
01MW74	LF	0.49
01MW75	LF	<0.2
M5	LF	<0.2
N10	LF	<0.2
Q9	LF	<0.2
IW03	LF	<0.2
West Commodore Way		
Shallow Water-Bearing Zone		
01MW87	LF	<0.2
MTC Method C Cleanup Level		
		2.2



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- N10 INJECTION POINT
- MW06 SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- LF LOW FLOW
- PCP PENTACHLOROPHENOL
- < RESULT BELOW LABORATORY REPORTING LIMITS
- MTC WASHINGTON STATE MODEL TOXICS CONTROL ACT
- NOTE: ALL RESULTS IN MICROGRAMS PER LITER
- HIGHEST DETECTED PCP CONCENTRATION IN GROUNDWATER:
- AT OR BELOW MTC METHOD C CLEANUP LEVEL



DATE: 06/28/13
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 CAD FILE: 01-600_2014RI_GD_PCP

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

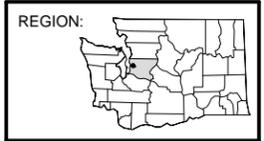
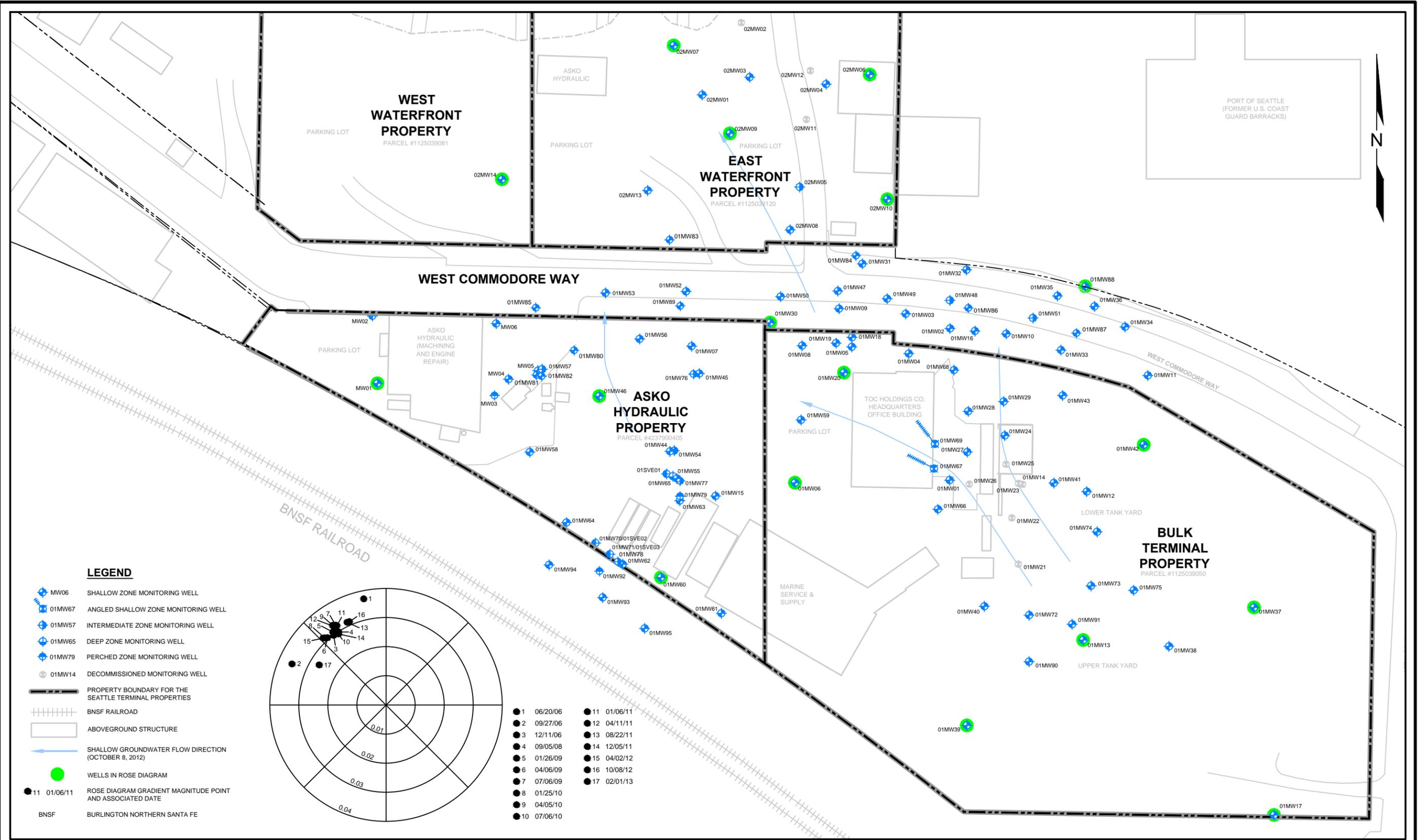


FIGURE 24
 GROUNDWATER ANALYTICAL RESULTS
 FOR PCP
 (OCTOBER 2012)

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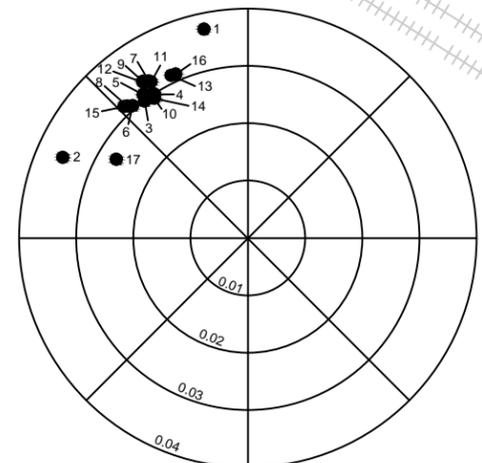
6/18/2014

P:0440 TOC HOLDINGS CO:01-600 SEATTLE TERMINAL TECHNICAL CAD:2014BTPR:01-600_2014RI_ROSE.DWG



LEGEND

- MW06 SHALLOW ZONE MONITORING WELL
- 01MW67 ANGLED SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BNSF RAILROAD
- ABOVEGROUND STRUCTURE
- SHALLOW GROUNDWATER FLOW DIRECTION (OCTOBER 8, 2012)
- WELLS IN ROSE DIAGRAM
- 11 01/06/11 ROSE DIAGRAM GRADIENT MAGNITUDE POINT AND ASSOCIATED DATE
- BNSF BURLINGTON NORTHERN SANTA FE



● 1 06/20/06	● 11 01/06/11
● 2 09/27/06	● 12 04/11/11
● 3 12/11/06	● 13 08/22/11
● 4 09/05/08	● 14 12/05/11
● 5 01/26/09	● 15 04/02/12
● 6 04/06/09	● 16 10/08/12
● 7 07/06/09	● 17 02/01/13
● 8 01/25/10	
● 9 04/05/10	
● 10 07/06/10	

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DATE: 06/10/14
 DRAWN BY: NAC/JQC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_ROSE

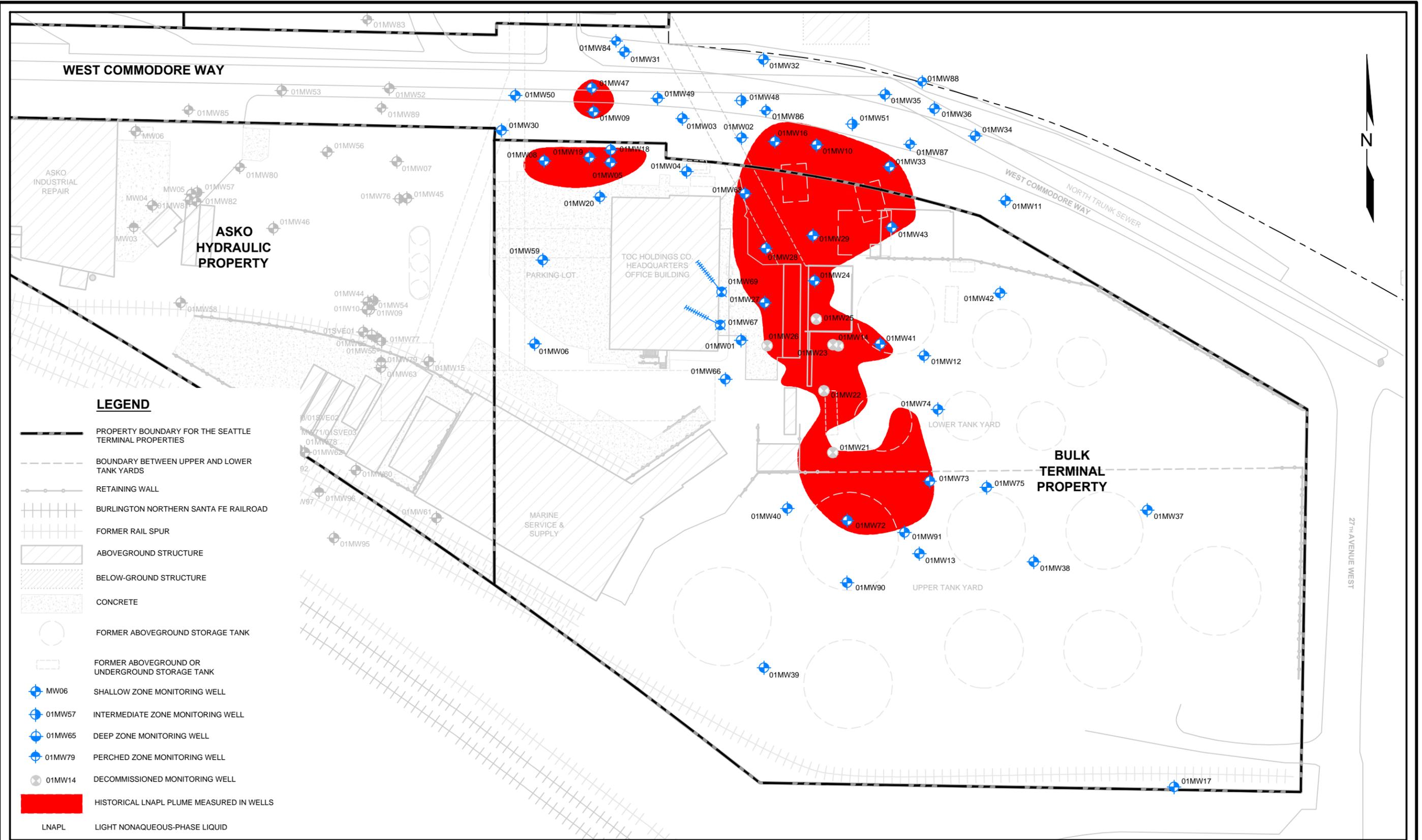
PROJECT NAME: TOC HOLDINGS CO. SEATTLE TERMINAL PROPERTIES
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737, 2750, 2800, AND 2805 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

REGION:

APPROXIMATE SCALE IN FEET

FIGURE 25
 SEATTLE TERMINAL PROPERTIES
 ROSE DIAGRAM
 SHALLOW WATER - BEARING ZONE

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LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK
- MW06 SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- HISTORICAL LNAPL PLUME MEASURED IN WELLS
- LNAPL LIGHT NONAQUEOUS-PHASE LIQUID



DATE: 06/28/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_LNAPL

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

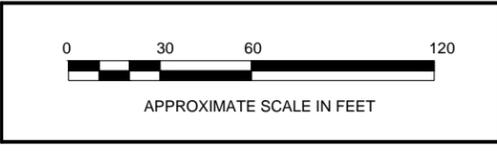
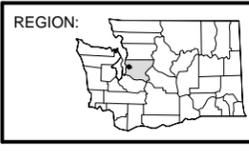
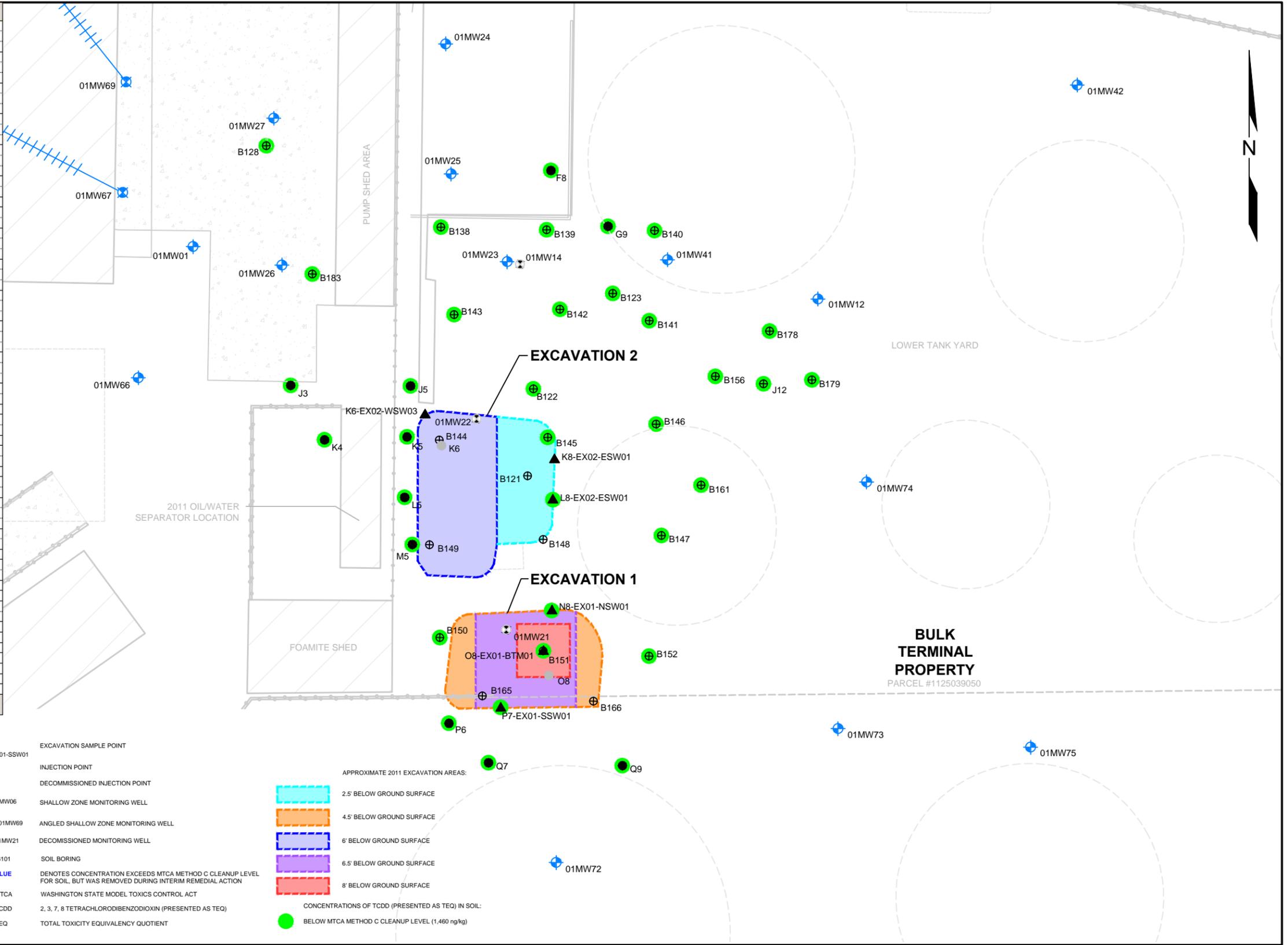


FIGURE 27
 HISTORICAL MEASURED LNAPL PLUME

Sample Location	Date Sampled	Sample Elevation	TCDD	Sample Location	Date Sampled	Sample Elevation	TCDD
B121	12/28/09	46	535	B156	09/02/10	46.3	23.0
		44	1.70			44.3	1.57
		42	0.0395			42.3	2.35
		39	0.0860			46.5	0.125
B122	12/28/09	45.7	192	B161	09/02/10	44.5	0.131
		43.7	31.8			42.5	1.21
		41.7	0.371			46.5	35.2
		38.7	0.0344			42.5	0.847
B123	12/28/09	45.3	64.3	B166	09/02/10	46.7	30.4
		43.3	0.426			44.7	1.28
		41.3	5.97			42.7	6.27
		38.3	0.231			45.3	3.91
B128	12/28/09	42.1	0.155	L5	05/19/10	43.8	0.396
		39.1	1.35			41.8	0.530
		34.1	2.00			45.4	0.603
		45.5	0.533			43.9	0.155
B138	09/01/10	43.5	10.0	M5	05/19/10	41.9	0.165
		41.5	1.99			44.5	86.6
		45.5	45.1			43	237
		43.5	0.238			41.5	44.6
B139	09/01/10	41.5	19.3	J5	05/20/10	40	59.7
		40	0.157			38.5	18.9
		45.5	1.06			44.9	5.85
		43.5	0.0593			43.4	20.5
B140	09/01/10	41.5	0.0579	K5	05/20/10	41.4	0.309
		45.6	1.79			45.4	5.96
		43.6	0.114			43.9	0.172
		41.6	0.911			41.9	0.106
B141	09/01/10	45.6	24.9	O8	05/26/10	44	17.9
		43.6	2.01			42	0.115
		41.6	6.95			46.1	0.259
		45.5	1.21			43.5	0.164
B142	09/01/10	43.5	0.164	Q7	06/01/10	44.1	0.487
		41.5	60.5			42.1	0.300
		40	11.5			46	0.181
		45.7	1.250			44	0.170
B143	09/01/10	43.7	5.57	Q9	06/02/10	42	0.198
		41.7	3.618			46.3	53.2
		40.2	2.00			44.3	0.428
		46	19.3			42.3	0.513
B144	09/01/10	44	2.49	G9	06/09/10	45.8	0.386
		42	1.13			43.8	0.166
		46.4	7.02			41.8	0.139
		44.4	0.0644			45.7	0.132
B145	09/01/10	42.4	23.8	P6	06/01/10	43.7	0.521
		40.9	0.0990			42.1	0.166
		46.5	0.0994			40.1	0.0810
		44.5	0.102			38.6	0.0714
B146	09/01/10	42.5	0.0756	F8	06/11/10	46.1	3.95
		46.3	0.616			42.1	0.0954
		44.3	0.103			46	0.138
		42.3	0.124			44	0.108
B147	09/01/10	45.7	204	J3	06/22/10	42	0.1282
		43.7	0.594			43.7	0.521
		41.7	52.2			42.1	0.166
		40.2	0.0552			46	0.138
B148	09/01/10	42.3	0.124	K4	06/21/10	44	0.108
		45.7	204			42	0.1282
		43.7	0.594			43.7	0.521
		41.7	52.2			42.1	0.166
B149	09/01/10	40.2	0.0552	B178	03/25/11	46	9.94
		45.7	282			46.3	2.87
		41.7	3.37			42.2	1.08
		46.5	2.890			40.7	12.9
B150	09/01/10	44.5	2.01	B183	04/14/11	42.2	1.08
		42.5	5.430			40.7	12.9
		41	13.2			42.2	1.08
		46.7	3.40			40.7	12.9
B151	09/01/10	44.7	1.43	P7-EX01-SSW01	09/26/11	44.5	0.09
		42.7	3.70			42	0.05
		44.5	2.01			39	0.09
		42.5	5.430			46	16.34
B152	09/01/10	41	13.2	O8-EX01-BTM01	09/27/11	43.7	11.62
		46.7	3.40			46	16.34
		44.7	1.43			43.7	11.62
		42.7	3.70			46	16.34
MTCA Method C Cleanup Level			1,460	MTCA Method C Cleanup Level			1,460



DATE: 09/15/11
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_HS_DIO

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

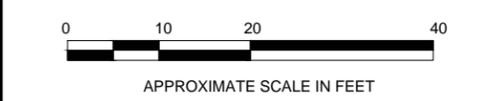
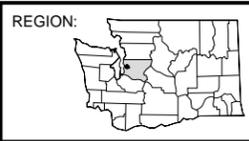
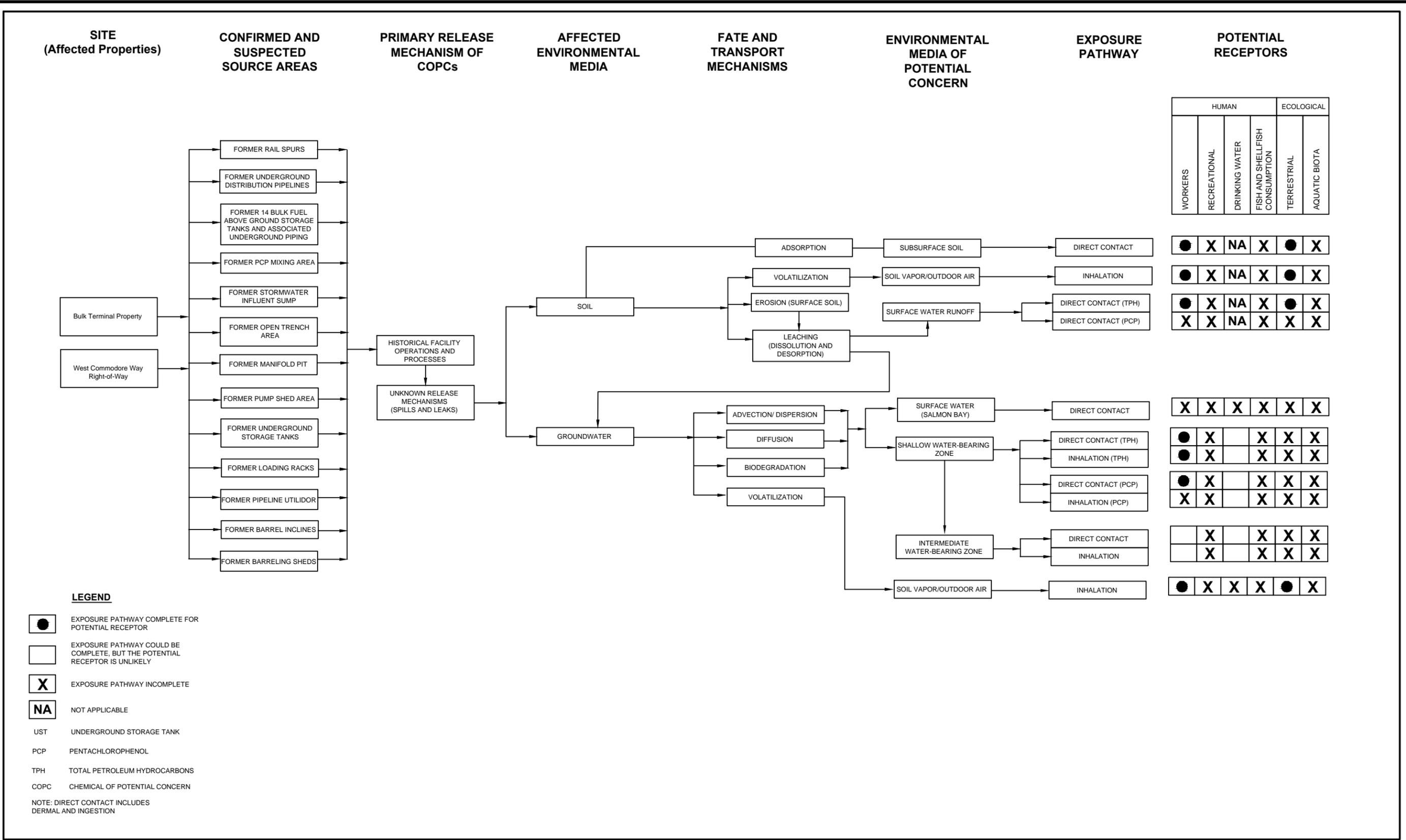


FIGURE 28
 2011 HOT SPOT EXCAVATION LIMITS
 DIOXINS AND FURANS

P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTPR\01-600_2014RI_CSM_F.DWG 6/18/2014



	HUMAN				ECOLOGICAL	
	WORKERS	RECREATIONAL	DRINKING WATER	FISH AND SHELLFISH CONSUMPTION	TERRESTRIAL	AQUATIC BIOTA

●	X	NA	X	●	X
●	X	NA	X	●	X
●	X	NA	X	●	X
X	X	NA	X	X	X
X	X	X	X	X	X
●	X		X	X	X
●	X		X	X	X
●	X		X	X	X
X	X		X	X	X
	X		X	X	X
	X		X	X	X
●	X	X	X	●	X

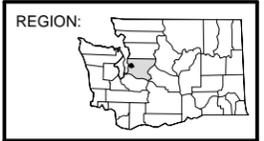
LEGEND

- EXPOSURE PATHWAY COMPLETE FOR POTENTIAL RECEPTOR
- EXPOSURE PATHWAY COULD BE COMPLETE, BUT THE POTENTIAL RECEPTOR IS UNLIKELY
- X EXPOSURE PATHWAY INCOMPLETE
- NA NOT APPLICABLE
- UST UNDERGROUND STORAGE TANK
- PCP PENTACHLOROPHENOL
- TPH TOTAL PETROLEUM HYDROCARBONS
- COPC CHEMICAL OF POTENTIAL CONCERN
- NOTE: DIRECT CONTACT INCLUDES DERMAL AND INGESTION



DATE: 05/12/13
 DRAWN BY: JAB
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_CSM

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 SES PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

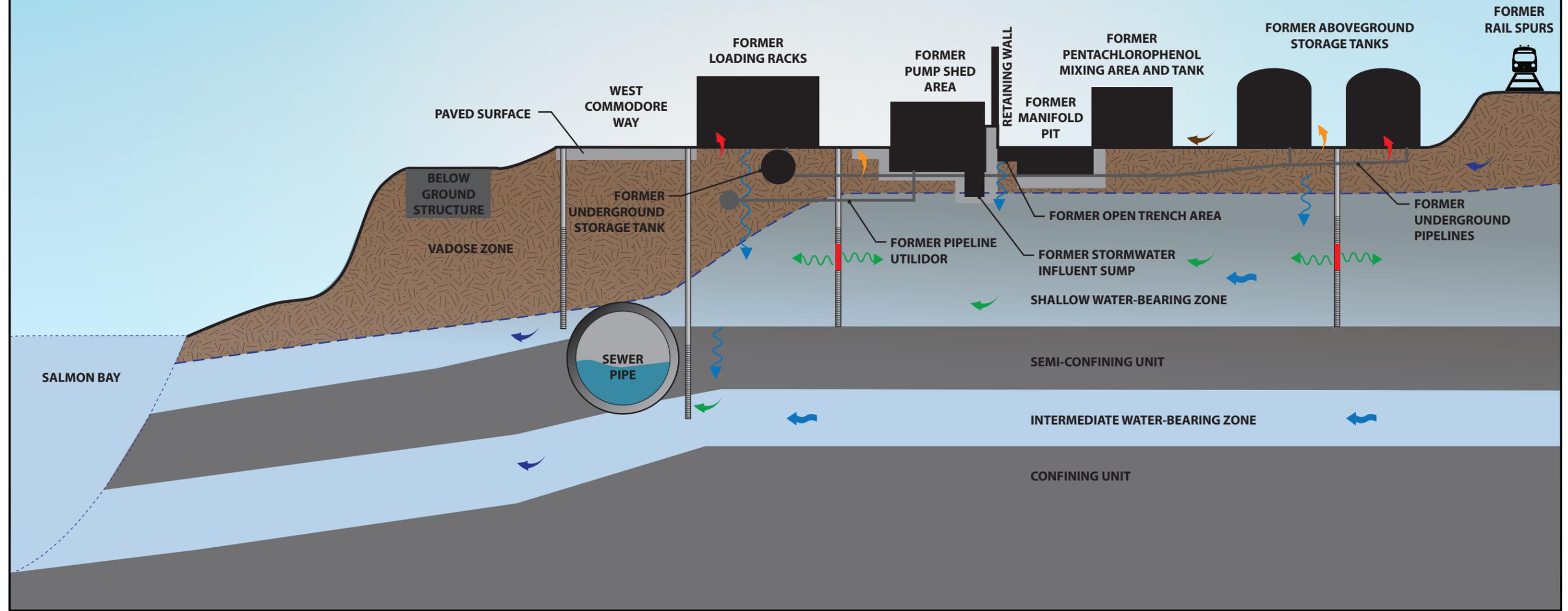


NOT TO SCALE

FIGURE 30
 PRELIMINARY EXPOSURE ASSESSMENT
 CONCEPTUAL SITE MODEL
 BULK TERMINAL PROPERTY

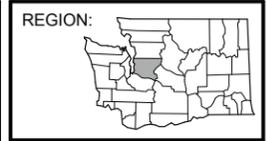
SOUND EARTH INC.

-  GROUNDWATER FLOW DIRECTION
-  SORPTION ---> DIRECT SOIL CONTACT
-  VOLATALIZATION ---> SOIL VAPOR/OUTDOOR AIR ---> INHALATION
-  EROSION AND LEACHING ---> SURFACE WATER RUNOFF ---> DIRECT CONTACT (TPH)
-  INFILTRATION/LEACHING/LEAKING
-  LIGHT NONAQUEOUS-PHASE LIQUID TO GROUNDWATER PARTITIONING
-  GROUNDWATER CONTAMINATION ADVECTION/DISPERSION, AND DIFFUSION ---> DIRECT CONTACT/INHALATION
-  GROUNDWATER BELOW PRELIMINARY CLEANUP LEVELS
- TPH TOTAL PETROLEUM HYDROCARBONS



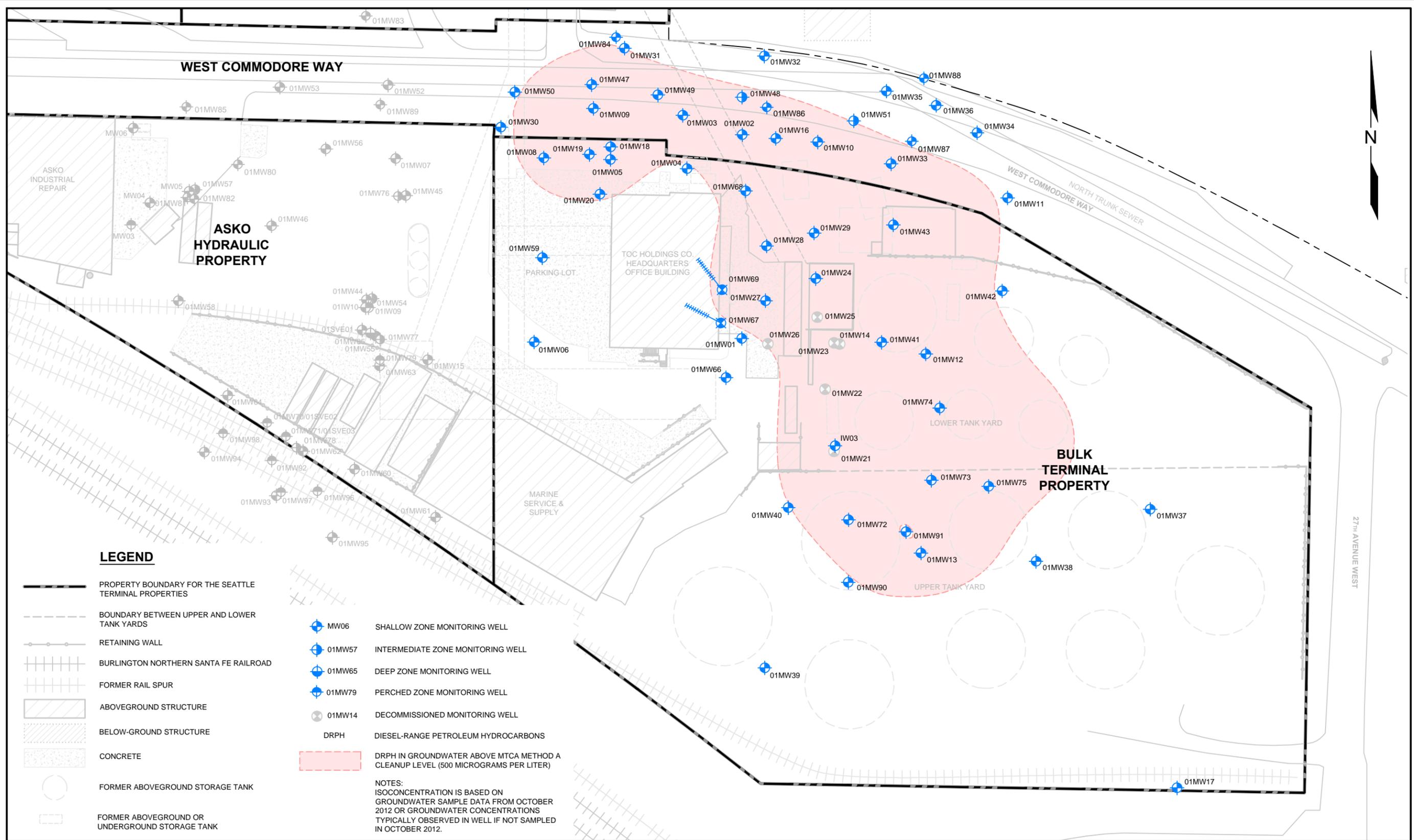
DATE: 07/25/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: BULK-CSM

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON



NO SCALE

FIGURE 31
 CONCEPTUAL SITE MODEL



DATE: 10/17/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_ISO_DRPH

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

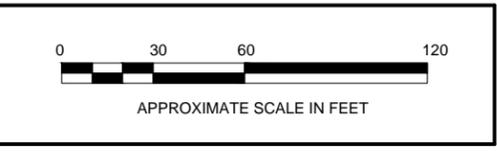
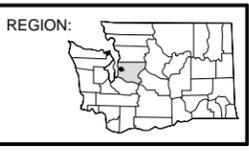
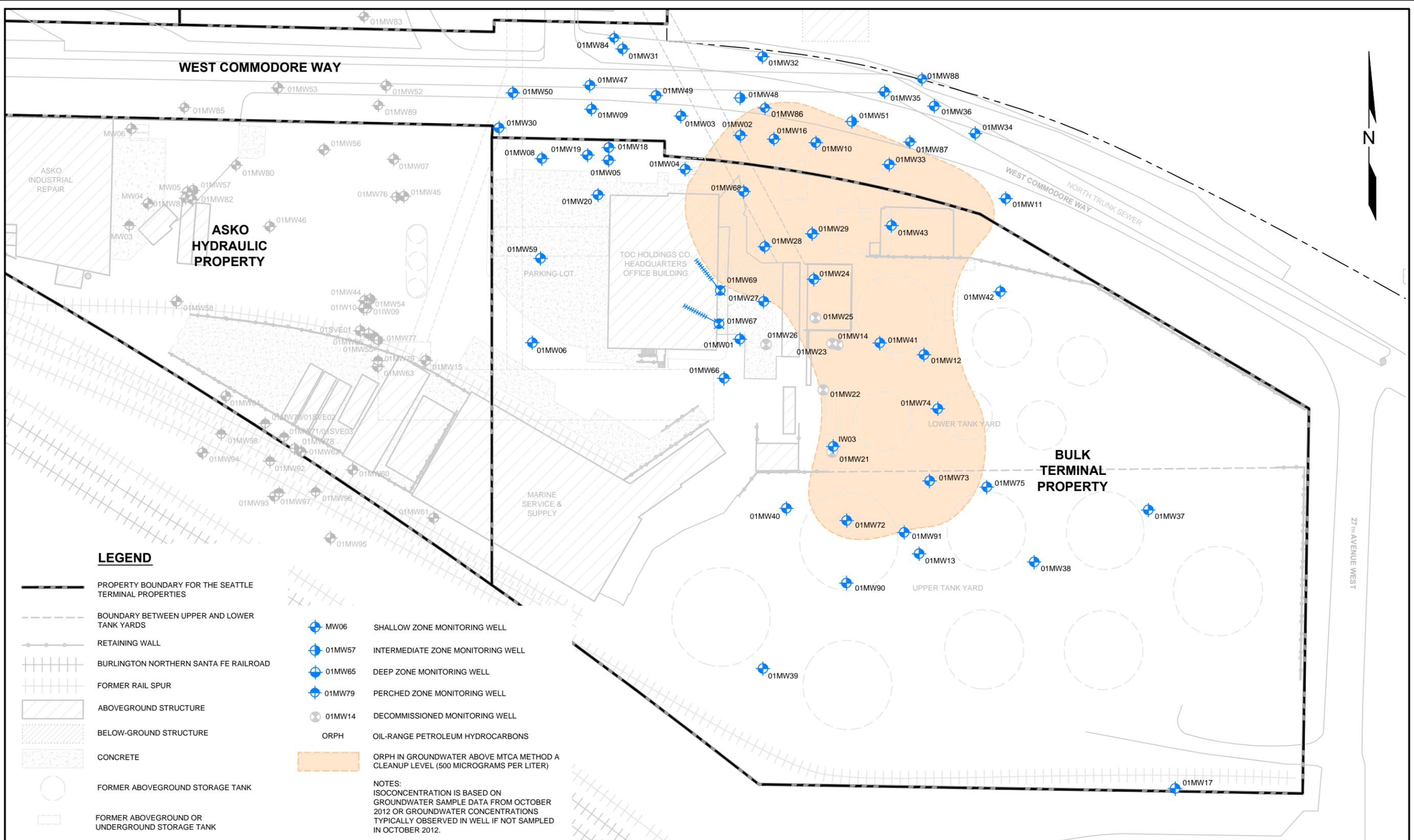


FIGURE 32A
 DRPH ISOCONCENTRATION MAP
 (FOURTH QUARTER OF 2012)



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK

- MW06 SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- ORPH OIL-RANGE PETROLEUM HYDROCARBONS

ORPH IN GROUNDWATER ABOVE MTCA METHOD A CLEANUP LEVEL (500 MICROGRAMS PER LITER)

NOTES:
ISOCONCENTRATION IS BASED ON GROUNDWATER SAMPLE DATA FROM OCTOBER 2012 OR GROUNDWATER CONCENTRATIONS TYPICALLY OBSERVED IN WELL IF NOT SAMPLED IN OCTOBER 2012.



DATE: 10/17/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_ISO_ORPH

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

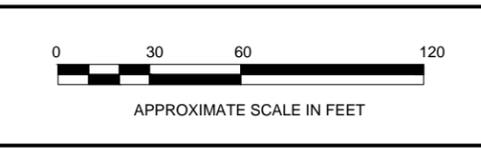
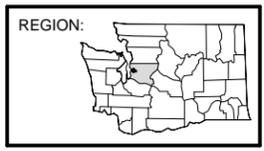
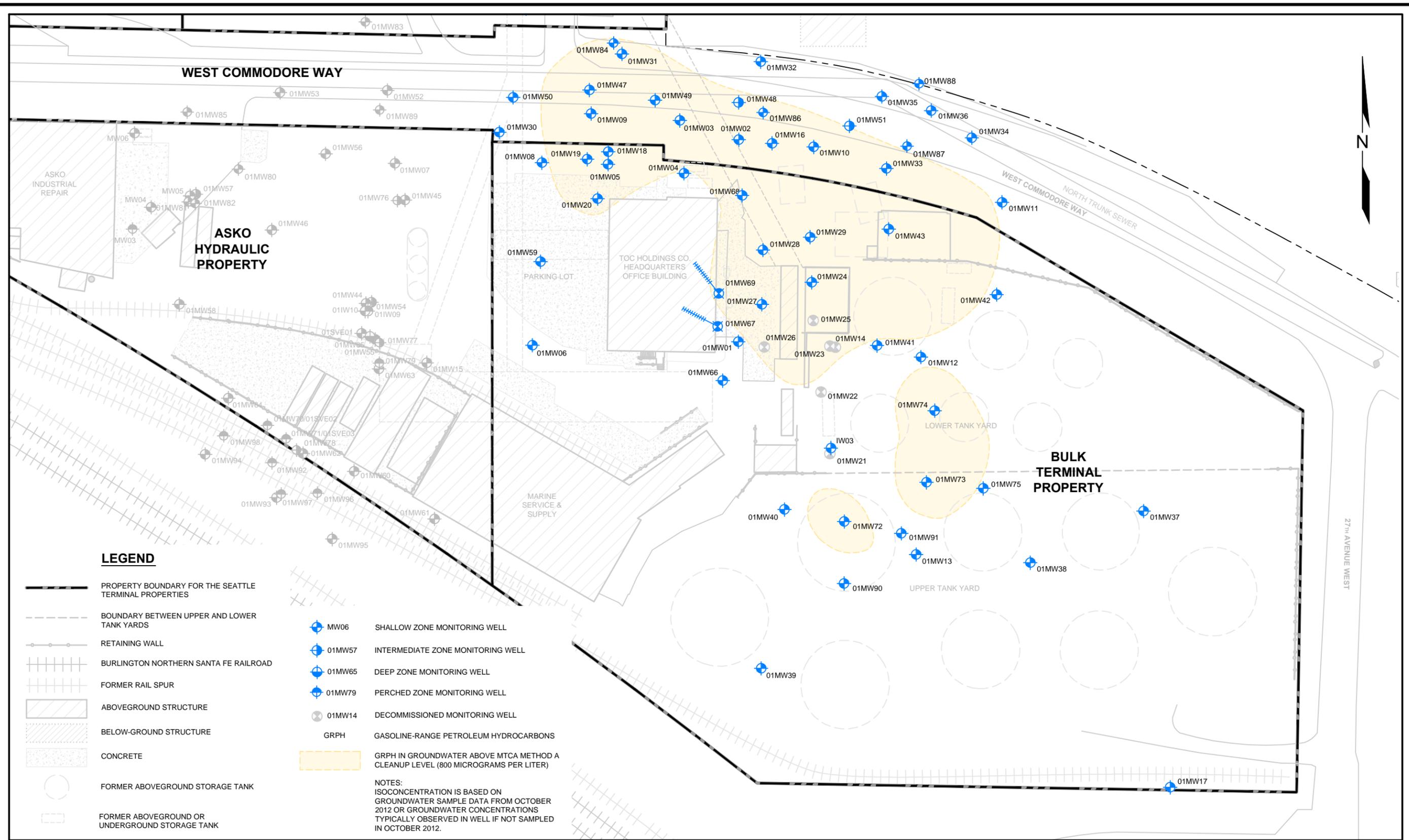


FIGURE 32B
 ORPH ISOCONCENTRATION MAP
 (FOURTH QUARTER OF 2012)



DATE: 10/17/13
 DRAWN BY: NAC
 CHECKED BY: JAB/TSB
 CAD FILE: 01-600_2014RI_ISO_GRP

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
 PROJECT NUMBER: 0440-004
 STREET ADDRESS: 2737 WEST COMMODORE WAY
 CITY, STATE: SEATTLE, WASHINGTON

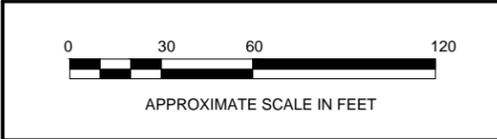
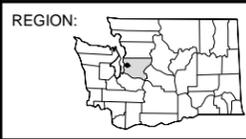
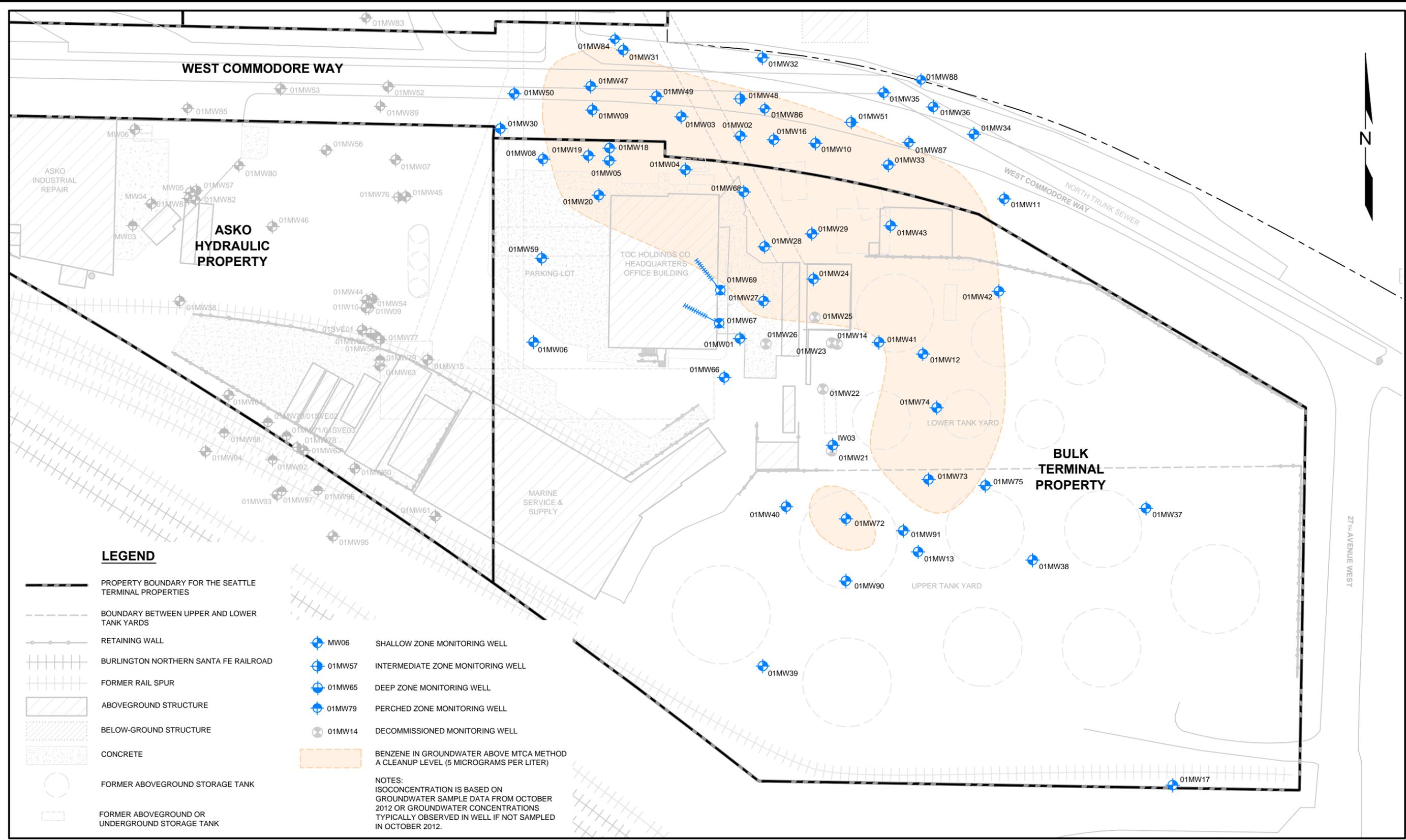


FIGURE 32C
 GRPH ISOCONCENTRATION MAP
 (FOURTH QUARTER OF 2012)

6/18/2014
P:\0440 TOC HOLDINGS CO\01-600 SEATTLE TERMINAL\TECHNICAL\CAD\2014\BTPR\01-600_2014R1_ISO_BENZENE_F.DWG



LEGEND

- PROPERTY BOUNDARY FOR THE SEATTLE TERMINAL PROPERTIES
- BOUNDARY BETWEEN UPPER AND LOWER TANK YARDS
- RETAINING WALL
- BURLINGTON NORTHERN SANTA FE RAILROAD
- FORMER RAIL SPUR
- ABOVEGROUND STRUCTURE
- BELOW-GROUND STRUCTURE
- CONCRETE
- FORMER ABOVEGROUND STORAGE TANK
- FORMER ABOVEGROUND OR UNDERGROUND STORAGE TANK

- MW06 SHALLOW ZONE MONITORING WELL
- 01MW57 INTERMEDIATE ZONE MONITORING WELL
- 01MW65 DEEP ZONE MONITORING WELL
- 01MW79 PERCHED ZONE MONITORING WELL
- 01MW14 DECOMMISSIONED MONITORING WELL
- BENZENE IN GROUNDWATER ABOVE MTCA METHOD A CLEANUP LEVEL (5 MICROGRAMS PER LITER)

NOTES:
ISOCONCENTRATION IS BASED ON GROUNDWATER SAMPLE DATA FROM OCTOBER 2012 OR GROUNDWATER CONCENTRATIONS TYPICALLY OBSERVED IN WELL IF NOT SAMPLED IN OCTOBER 2012.



DATE: 10/17/13
DRAWN BY: NAC
CHECKED BY: JAB/TSB
CAD FILE: 01-600_2014R1_ISO_BENZENE

PROJECT NAME: TOC HOLDINGS CO. BULK TERMINAL PROPERTY
PROJECT NUMBER: 0440-004
STREET ADDRESS: 2737 WEST COMMODORE WAY
CITY, STATE: SEATTLE, WASHINGTON

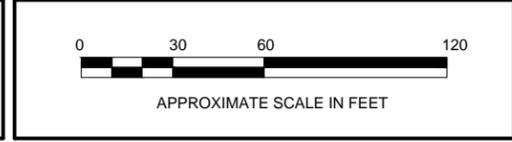
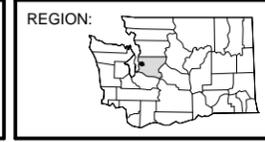


FIGURE 32D
BENZENE ISOCONCENTRATION MAP
(FOURTH QUARTER OF 2012)

WWW.SOUNDEARTHINC.COM

TABLES



Table 1
Preliminary Cleanup Levels
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

SOIL	
Chemicals of Concern	Cleanup Levels (mg/kg)
Gasoline-Range Petroleum Hydrocarbons	30 ⁽¹⁾
Diesel-Range Petroleum Hydrocarbons	2,000 ⁽¹⁾
Oil-Range Petroleum Hydrocarbons	2,000 ⁽¹⁾
Benzene	0.03 ⁽¹⁾
Toluene	7 ⁽¹⁾
Ethylbenzene	6 ⁽¹⁾
Total Xylenes	9 ⁽¹⁾
PCE	0.05 ⁽¹⁾
TCE	0.03 ⁽¹⁾
cis-1,2-Dichloroethene	160 ⁽²⁾
trans-1,2-Dichloroethene	1,600 ⁽²⁾
1,1-Dichloroethene	4,000 ⁽²⁾
1,2-Dichloroethane	11 ⁽³⁾
Vinyl Chloride	0.67 ⁽³⁾
MTBE	0.1 ⁽¹⁾
1,2-Dibromoethane	0.005 ⁽¹⁾
1,2,4-Trimethylbenzene	NE
1,3,5-Trimethylbenzene	800 ⁽²⁾
Acetone	72,000 ⁽²⁾
Isopropylbenzene	8,000 ⁽²⁾
Naphthalene	5 ⁽¹⁾
n-Butylbenzene	NE
n-Propylbenzene	NE
p-Isopropyltoluene	NE
sec-Butylbenzene	NE
tert-Butylbenzene	NE
2-Butanone	48,000 ⁽²⁾
Arsenic	20 ⁽¹⁾
Barium	16,000 ⁽²⁾
Cadmium	2 ⁽¹⁾
Chromium	2,000 ⁽¹⁾
Lead	250 ⁽¹⁾
Mercury	2 ⁽¹⁾
Selenium	400 ⁽²⁾
Silver	400 ⁽²⁾
Ethanol	NE
Pentachlorophenol	2.5 ⁽³⁾
1-Methylnaphthalene	5 ⁽¹⁾
2-Methylnaphthalene	5 ⁽¹⁾
Acenaphthene	4,800 ⁽²⁾
Acenaphthylene	NE
Fluorene	3,200 ⁽²⁾
Phenanthrene	NE
Anthracene	24,000 ⁽²⁾
Fluoranthene	3,200 ⁽²⁾
Pyrene	2,400 ⁽²⁾



Table 1
Preliminary Cleanup Levels
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

SOIL	
Chemicals of Concern	Cleanup Levels (mg/kg)
Benzo(g,h,i)perylene	NE
Benzo(a) anthracene	NE
Chrysene	NE
Benzo(a)pyrene	0.1 ⁽¹⁾
Benzo(b) fluoranthene	NE
Benzo(k) fluoranthene	NE
Indeno(1,2,3-cd)pyrene	NE
Dibenz(a,h) anthracene	NE
Phenol	24,000 ⁽²⁾
2-Chlorophenol	400 ⁽²⁾
2,4- and 2,3-Dichlorophenol	240 ⁽²⁾
2,6-Dichlorophenol	NE
3-and 4-Chlorophenol	NE
2,5-Dichlorophenol	NE
2,3,5-Trichlorophenol	NE
2,4,6-Trichlorophenol	91 ⁽³⁾
2,4,5-Trichlorophenol	8,000 ⁽²⁾
2,3,4-Trichlorophenol	NE
3,5-Dichlorophenol	NE
2,3,6-Trichlorophenol	NE
3,4-Dichlorophenol	NE
2,3,4,6-Tetrachlorophenol	2,400 ⁽²⁾
2,3,4,5- and 2,3,5,6-Tetrahydrophenol	NE
3,4,5-Trichlorophenol	NE
GROUNDWATER	
Chemicals of Concern	Cleanup Levels (µg/L)
Gasoline-Range Petroleum Hydrocarbons	800 ⁽⁴⁾
Diesel-Range Petroleum Hydrocarbons	500 ⁽⁴⁾
Oil-Range Petroleum Hydrocarbons	500 ⁽⁴⁾
Benzene	5 ⁽⁴⁾
Toluene	1,000 ⁽⁴⁾
Ethylbenzene	700 ⁽⁴⁾
Total Xylenes	1,000 ⁽⁴⁾
PCE	5 ⁽⁴⁾
TCE	5 ⁽⁴⁾
cis-1,2-Dichloroethene	16 ⁽⁵⁾
trans-1,2-Dichloroethene	160 ⁽⁵⁾
1,1-Dichloroethene	400 ⁽⁵⁾
1,2-Dichloroethane	5 ⁽⁴⁾
Pentachlorophenol	0.22 ⁽⁶⁾
Vinyl Chloride	0.2 ⁽⁴⁾
MTBE	20 ⁽⁴⁾
1,2-Dibromoethane	0.01 ⁽⁴⁾
1,2,4 Trimethylbenzene	NE
1,3,5 Trimethylbenzene	80 ⁽⁵⁾



Table 1
Preliminary Cleanup Levels
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

GROUNDWATER	
Chemicals of Concern	Cleanup Levels (µg/L)
Naphthalene	160 ⁽⁴⁾
Acetone	7,200 ⁽⁵⁾
Isopropylbenzene	800 ⁽⁵⁾
Ethanol	NE
Total and Dissolved Lead	15 ⁽⁴⁾
Total and Dissolved Arsenic	5 ⁽⁴⁾
Total and Dissolved Barium	3,200 ⁽⁵⁾
Total and Dissolved Cadmium	5 ⁽⁴⁾
Total and Dissolved Chromium	50 ⁽⁴⁾
Total and Dissolved Mercury	2 ⁽⁴⁾
Total and Dissolved Selenium	80 ⁽⁵⁾
Total and Dissolved Silver	80 ⁽⁵⁾
Benz(a) anthracene	NE
Chrysene	NE
Benzo(a)pyrene	0.1 ⁽⁴⁾
Benzo(b) fluoranthene	NE
Benzo(k) fluoranthene	NE
Indeno(1,2,3-cd)pyrene	NE
Dibenz(a,h) anthracene	NE

NOTES:

⁽¹⁾MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

⁽²⁾CLARC, Soil, Method B Cleanup Levels, Non-Carcinogen, Standard Formula Value, Direct Contact (ingestion only), CLARC website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽³⁾CLARC, Soil, Method B Cleanup Levels, Carcinogen, Standard Formula Value, Direct Contact (ingestion only), CLARC website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁴⁾MTCA Method A Cleanup Levels for Ground Water, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

⁽⁵⁾CLARC, Groundwater, Method B Cleanup Levels, Non-Carcinogen, Standard Formula Value, CLARC website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁶⁾MTCA Cleanup Regulation, CLARC, Ground Water Method B, Carcinogen, Standard Formula Value, CLARC website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

µg/L = micrograms per liter

CLARC = Cleanup Levels and Risk Calculation

mg/kg = milligrams per kilogram

MTCA = Washington State Model Toxics Control Act

MTBE = methyl t-butyl ether

NE = not established

PCE = tetrachloroethene

TCE = trichloroethene



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
01SB05	--	IT	06/06/99	10	2,450	<126	2,360	<2.5	33.5	31	190	--	--	--	--
01SB08	--	IT	06/06/99	12.5	33,900	<1,030	3,650	9.96	<5.0	20.9	73.4	--	--	--	--
01SB09	--	IT	06/06/99	2.5	1,780	514	381	2.12	<0.2	<1.4	<1.2	--	--	--	--
	--			7	24,800	<525	2,360	3.45	8.11	11	32.1	--	--	--	--
	--			12.5	15,000	<525	755,000	5,590	26,200	9,500	55,800	--	--	--	--
	--			18	5,870	<525	3,970	5.26	10.5	13.7	61.5	--	--	--	--
SB-02	SB-02-0.6	FW	11/00	0.5	--	--	--	--	--	--	--	--	--	--	--
	SB-02-2			2	1,400	158	217	<0.2	--	<0.2	<0.4	--	--	--	--
	SB-02-5			5	--	--	--	--	--	--	--	--	--	--	--
	SB-02-10			10	--	--	--	--	--	--	--	--	--	--	--
	SB-02-14			14	--	--	--	--	--	--	--	--	--	--	--
SB-03	SB-03-0.6	FW	11/00	0.5	2,010	4,780	<5.00	<0.05	--	<0.05	<0.1	--	--	--	--
	SB03A (2FT)	FW		2	14,700	6,350	1,670	<1.0	--	<7.0	<16.2	--	--	--	--
SB-04	SB-04-0.6	FW	11/00	0.5	--	--	--	--	--	--	--	--	--	--	--
	SB-04-2			2	5,670	2,320	513	<0.25	--	<0.470	<0.875	--	--	--	--
	SB-04-5			5	217	260	8.42	<0.05	--	<0.05	<0.1	--	--	--	--
	SB-04-10			10	--	--	--	--	--	--	--	--	--	--	--
SB-13	SB-13-2	FW	2000	2	10,600	1,500	9,340	14.3	--	54.8	<75	--	--	--	--
SB-15	SB-15-2	FW	2000	2	2,910	265	902	<0.5	--	<3.00	<6.00	--	--	--	--
SB-19	SB-19-2	FW	2000	2	4,070	<275	1,500	<1	--	<1.7	<8	--	--	--	--
	1B-19-5			5	1,340	<75	960	<0.5	--	<0.5	<6	--	--	--	--
SB-22	SB-22-5	FW	2000	5	19.4	<25.0	266	<0.25	--	<0.25	<0.5	--	--	--	--
	SB-22-10			10	6,490	<25.0	293	<0.25	--	<0.25	<0.5	--	--	--	--
01MW12/SB-24	SB-24-2	FW	2000	2	2,610	<1,030	58	<0.05	--	<0.0643	<0.164	--	--	--	--
	SB-24-10			10	366	60.9	252	<0.236	--	<0.910	<1.34	--	--	--	--
SB-27	SB-27-5	FW	11/00	5	1,190	<525	121	<0.1	--	<0.1	<0.314	--	--	--	--
01MW06/SB-29	SB-29-2	FW	11/00	2	3,220	1,160	536	<0.5	--	<0.5	<1.83	--	--	--	--
	SB-29-5			5	1,930	488	393	<0.2	--	<0.56	<1.12	--	--	--	--
SB-31	SB-31-2	FW	11/00	2	11,400	7,730	577	<0.512	--	<0.824	<2.52	--	--	--	--
01MW08/SB-35	SB-35-5	FW	2000	5	1,190	631	192	<0.1	--	<0.780	<1.72	--	--	--	--
	SB-35-15			15	9,440	1,160	1,640	<1.00	--	<2.38	<11.0	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
SB-39	SB-39-2	FW	2001	2	2,440	460	34.8	<0.05	--	0.167	0.567	--	--	--	--
	SB-39-5			5	1,300	157	605	<0.280	--	<1.68	<3.24	--	--	--	--
SB-52	SB-52-2.5	FW	07/16/01	2.5	4,180	<1,020	1,410	<1.00	<1.00	1.42	2.18	--	--	--	--
	SB-52-6			6	34.4	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-52-10			10	10.3	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
SB-53	SB-53-2	FW	07/16/01	2	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-53-5			5	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-53-10			10	15.7	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
SB-54	SB-54-2	FW	07/16/01	2	1,500	1,230	86.2	<0.100	<0.100	<0.100	<0.200	--	--	--	--
	SB-54-5			5	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-54-10			10	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
SB-55	SB-55-2.5	FW	07/16/01	2.5	<10.0	<25.0	<5.00	<5.00	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-55-6			6	370	<75.0	185	<0.200	<0.200	0.811	3.06	--	--	--	--
	SB-55-10			10	13.4	<25.0	<5.00	<5.00	<0.0500	<0.0500	<0.100	--	--	--	--
01MW14/SB-56	SB-56-2.5	FW	07/17/01	2.5	28,300	<5,020	5,100	10.2	6.24	29.3	75.6	--	--	--	--
	SB-56-5			5	2,040	<525	4,060	9.36	<1.00	22.3	60.5	--	--	--	--
	SB-56-10			10	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
SB-57	SB-57-1.5	FW	07/2001	1.5	3,970	881	2,590	0.387	1.94	18.2	8.85	--	--	--	--
SB-59	SB-59-2	FW	07/19/01	2	528	470	65.6	<0.0500	<0.0500	0.0733	0.126	--	--	--	--
	SB-59-5			5	4,950	1,170	799	<1.00	<1.00	1.94	<2.00	--	--	--	--
	SB-59-10			10	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-59-15			15	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-59-20			20	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
01MW17/SB-61	SB-61-2	FW	07/19/01	2	20.1	88.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-61-5			5	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-61-10			10	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
	SB-61-15			15	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--
01MW18/SB-65	SB-65-5	FW	03/11/02	5	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-65-10			10	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-65-15			15	676	<25.0	278	<0.120	0.519	1.74	6.47	--	--	--	--
	SB-65-20			20	<10.0	<25.0	220	0.317	0.703	1.53	6.37	--	--	--	--
	SB-65-25			25	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-65-30			30	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
01MW19/SB-66	SB-66-5	FW	03/11/02	5	42.9	70.1	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-66-10			10	17.9	29.3	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-66-15			15	<10.0	<25.0	11.2	0.292	<0.050	0.118	2.52	--	--	--	--
	SB-66-20			20	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	0.136	--	--	--	--
	SB-66-25			25	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
01MW20/SB-67	SB-67-5	FW	03/11/02	5	112	75.2	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-67-10			10	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-67-15			15	<10.0	<25.0	7.23	<0.030	0.23	0.149	0.843	--	--	--	--
	SB-67-20			20	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
	SB-67-25			25	<10.0	<25.0	<5.00	<0.030	<0.050	<0.050	<0.100	--	--	--	--
01MW21	01MW-21-5	FW	12/02/02	5	14	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	<0.100	--	--	--
	01MW-21-10			10	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-21-15			15	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-21-20			20	21.5	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-21-23			23	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
01MW22	01MW-22-5	FW	12/02/02	5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	<0.10	--	--	--
	01MW-22-10			10	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-22-15			15	<10.0	<25.0	<5.00	0.219	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-22-20			20	<10.0	<25.0	<5.00	0.21	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-22-25			25	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
01MW23	01MW-23-5	FW	12/02/02	5	681	114	732	0.817	<0.200	2.90	6.03	<0.100	--	--	--
	01MW-23-10			10	32.5	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-23-15			15	<10.0	<25.0	5.71	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-23-20			20	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
01MW24	01MW-24-5	FW	12/03/02	5	3,000	149	2,200	4.35	0.0358	14.7	41.3	<0.10	--	--	--
	01MW-24-10			10	419	<25.0	28.4	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-24-15			15	11.8	<25.0	<5.00	0.103	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-24-20			20	<10.0	<25.0	<5.00	0.0454	<0.0500	<0.0500	<0.100	--	--	--	--
01MW25	01MW-25-5	FW	12/03/02	5	<10.0	<25.0	<5.00	0.0491	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-25-10			10	<10.0	<25.0	176	0.0658	<0.0500	0.272	0.74	--	--	--	--
	01MW-25-15			15	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-25-18			18	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
01MW26	01MW-26-5	FW	12/04/02	5	<10.0	<25.0	681	<0.0300	<0.0500	3.63	6.5	--	--	--	--
	01MW-26-10			10	14,100	<2,500	3,990	4.29	9.69	28.2	112	--	--	--	--
	01MW-26-15			15	7,000	<25.0	1,430	<0.600	1.15	8.68	37.4	--	--	--	--
	01MW-26-20			20	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
01MW27	01MW-27-5	FW	12/04/02	5	7,410	<500	5,510	182	37.7	36.4	168	--	--	--	--
	01MW-27-10			10	11,100	651	2,370	8.21	16.0	15.0	51	--	--	--	--
	01MW-27-15			15	3,810	<500	177	0.265	<0.200	0.316	0.402	--	--	--	--
	01MW-27-20			20	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
01MW28	01MW-28-5	FW	12/05/02	5	1,840	<250	46.5	<0.0300	<0.0500	0.0516	0.101	--	--	--	--
	01MW-28-10			10	19,300	<2,500	1,170	<0.0300	5.92	13.2	73.9	--	--	--	--
	01MW-28-15			15	2,810	<500	2,870	9.82	18.2	24.9	111	--	--	--	--
	01MW-28-20			20	<10.0	<25.0	<0.00262	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	01MW-28-25			25	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
01MW29	01MW-29-5	FW	12/03/02	5	50	<25.0	127	<0.0100	<0.0100	0.398	0.405	<0.10	--	--	--
	01MW-29-10			10	75.2	<25.0	122	<0.0300	<0.0500	0.31	1.1	--	--	--	--
	01MW-29-15			15	312	<25.0	297	0.109	0.114	1.19	2.01	--	--	--	--
	01MW-29-20			20	<10.0	<25.0	<5.00	0.289	<0.0500	<0.0500	<0.100	--	--	--	--
LR01	LR01-5	FW	12/03/02	5	7,440	<1,000	251	0.39	<0.200	0.545	0.502	<0.10	--	--	--
	LR01-10			10	2,670	<250	178	<0.0300	<0.0500	0.742	1.44	--	--	--	--
	LR01-15			15	13,500	<2,500	1,420	0.885	5.8	6.91	21.9	--	--	--	--
	LR01-20			20	<10.0	<25.0	5.01	1.4	0.0509	0.0837	<0.10	--	--	--	--
LR02	LR02-5	FW	12/04/02	5	280	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--
	LR02-10			10	11,700	<2,500	1,140	0.831	8.46	6.2	19.9	--	--	--	--
	LR02-15			15	19,500	<2,500	1,320	1.1	8.56	7.42	23.5	--	--	--	--
	LR02-20			20	<10.0	<25.0	51.9	0.0871	0.171	0.265	0.728	--	--	--	--
LR03	LR03-5	FW	12/04/02	5	219	<25.0	59.7	<0.0600	<0.100	0.152	<0.200	<0.10	--	--	--
	LR03-10			10	18,800	<2,500	1,460	1.51	12.4	11.5	24.2	--	--	--	--
	LR03-15			15	17,500	<25.0	1,860	6.70	24.5	12.3	53.5	--	--	--	--
LR07	LR07-5	FW	12/02	5	4,230	<25.0	1,490	1.13	<0.500	4.02	2.3	--	--	--	--
	LR07-10			10	5,840	<25.0	534	<0.300	0.55	2.8	6.64	--	--	--	--
	LR07-15			15	11,400	<25.0	1,370	2.52	3.48	6.67	29.1	--	--	--	--
01MW37/SB-58	SBS8-2.5	SoundEarth	09/07/06	2.5	<12.7	<31.8	<6.02	<0.00189	<0.00189	<0.00504	<0.0126	<0.00126	<0.00631	<0.00158	<23
	SBS8-7.5			7.5	<12.4	<31.0	<6.78	<0.00162	<0.00162	<0.00433	<0.0108	<0.00108	<0.00541	<0.00135	<26
	SBS8-12.5			12.5	<12.5	<31.2	<5.87	<0.00159	<0.00159	<0.00425	<0.0106	<0.00106	<0.00531	<0.00133	<23
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
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TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾	
Bulk Terminal Property																
01MW38/SB-59	SB59-2.5'	SoundEarth	09/07/06	2.5	<12.5	<31.4	942	0.188	2.78	8.04	16.8	<0.000997	<0.00498	<0.00125	<22	
	SB59-7.5'			7.5	17	<29.7	79.4	<0.100	<0.100	<0.100	<0.301	<0.501	<0.100	<0.100	<0.100	<20
	SB59-12.5'			12.5	<12.0	<29.9	<5.20	<0.00161	<0.00161	<0.00430	<0.0107	<0.00107	<0.00537	<0.00134	<20	
01MW39/SB-60	SB60-2.5	SoundEarth	09/07/06	2.5	<12.3	<30.6	<5.35	<0.00182	<0.00182	<0.00485	<0.0121	<0.00121	<0.00606	<0.00151	<21	
	SB60-7.5			7.5	<11.2	<28.0	<5.18	<0.00159	<0.00159	<0.00423	<0.0106	<0.00106	<0.00529	<0.00132	<20	
	SB60-12.5			12.5	<13.0	<32.4	<5.26	<0.00158	<0.00158	<0.00422	<0.0106	<0.00106	<0.00528	<0.00132	<21	
01MW40/SB-61	SB61-2.5	SoundEarth	09/07/06	2.5	<12.9	<32.3	<5.53	<0.00165	<0.00165	<0.00439	<0.0110	<0.00110	<0.00549	<0.00137	<21	
	SB61-7.5			7.5	<11.3	<28.3	<5.02	<0.00143	<0.00143	<0.00381	<0.00953	<0.000953	<0.00476	<0.00119	<19	
	SB61-12.5			12.5	<12.4	<31.0	<5.22	<0.00129	<0.00129	<0.00344	<0.00860	<0.00106	<0.00528	<0.00132	<20	
01MW41/SB-62	SB62-2.5	SoundEarth	09/08/06	2.5	<12.1	<30.3	<5.60	0.00173	<0.00144	<0.00385	0.00993	<0.000962	<0.00481	<0.00120	<22	
	SB62-7.5			7.5	<12.0	<30.1	<6.31	<0.00152	<0.00152	<0.00406	<0.0101	<0.00101	<0.00507	<0.00262	<24	
	SB62-12.5			12.5	<12.3	<30.9	<5.66	<0.00165	<0.00165	<0.00441	<0.0110	<0.00110	<0.00552	<0.00576	<23	
01MW42/SB-63	SB63-2.5	SoundEarth	09/08/06	2.5	<11.5	<28.7	<5.33	<0.00139	<0.00139	<0.00372	<0.00930	<0.000930	<0.00465	<0.00116	<22	
	SB63-7.5			7.5	<11.9	<29.6	<5.87	<0.00151	<0.00151	<0.00404	<0.0101	<0.00101	<0.00505	<0.00126	<22	
	SB63-12.5			12.5	<11.9	<29.8	<5.93	<0.00150	<0.00150	<0.00400	<0.0100	<0.00100	<0.00500	0.0160	<22	
01MW43/SB-64	SB64-7.5	SoundEarth	09/08/06	7.5	<12.3	<30.8	<5.53	<0.00151	<0.00151	<0.00402	<0.0100	<0.00100	<0.00502	<0.00125	<22	
	SB64-12.5			12.5	<12.0	<30.0	<5.55	<0.00135	<0.00135	<0.00359	<0.00897	<0.000897	<0.00448	<0.00112	<22	
	SB64-17.5			17.5	<11.9	<29.7	<6.06	<0.00155	<0.00155	<0.00412	<0.0103	<0.00103	<0.00516	<0.00129	<23	
GP01	GP01-8	SoundEarth	08/31/06	8	<12.6	<31.6	<6.02	0.00339	<0.00107	<0.00285	<0.00712	<0.000712	<0.00356	<0.000889	--	
	GP01-11			11	<11.5	<28.6	<4.41	0.000802	<0.000491	<0.00131	<0.00327	<0.000327	<0.00164	<0.000409	--	
	GP01-15			15	<12.1	<30.4	<4.69	<0.000914	<0.000914	<0.00244	<0.00609	<0.000609	<0.00305	<0.000762	--	
GP02	GP02-8	SoundEarth	08/31/06	8	<12.4	<30.9	<4.71	<0.000998	<0.000998	<0.00266	<0.00665	<0.000665	<0.00333	<0.000831	--	
	GP02-11			11	<12.0	<30.0	<4.32	<0.000960	<0.000960	<0.00256	<0.00640	<0.000640	<0.00320	<0.000800	--	
	GP02-15			15	<12.4	<31.0	<4.81	<0.00103	<0.00103	<0.00275	<0.00688	<0.000688	<0.00344	<0.000860	--	
GP03	GP03-6	SoundEarth	08/31/06	6	<12.5	<31.2	<5.50	<0.00104	<0.00104	<0.00278	<0.00695	<0.000695	<0.00348	<0.000869	--	
	GP03-12			12	<12.1	<30.2	<4.86	<0.00111	<0.00111	<0.00295	<0.00739	<0.000739	<0.00369	<0.000923	--	
GP04	GP04-8	SoundEarth	08/31/06	8	<12.1	<30.2	<5.05	<0.000946	<0.000946	<0.00252	<0.00631	<0.000631	<0.00315	<0.000789	--	
	GP04-10			10	<12.7	<31.8	<4.86	<0.00103	<0.00103	<0.00275	<0.00688	<0.000688	<0.00344	<0.000860	--	
	GP04-15			15	<11.5	<28.7	<4.91	<0.00103	<0.00103	<0.00274	<0.00686	<0.000686	<0.00343	<0.000857	--	
GP05	GP05-8	SoundEarth	08/31/06	8	<12.2	<30.6	<4.45	<0.00102	<0.00102	<0.00273	<0.00683	<0.000683	<0.00342	<0.000854	--	
	GP05-12			12	<12.2	<30.6	<4.71	<0.00111	<0.00111	<0.00296	<0.00740	<0.000740	<0.00370	<0.000925	--	
	GP05-15			15	<12.0	<29.9	<4.35	<0.00105	<0.00105	<0.00279	<0.00698	<0.000698	<0.00349	<0.000872	--	
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE	



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
GP06	GP06-2	SoundEarth	08/31/06	2	8,970	2,540	763	<0.113	<0.113	0.561	1.1	<0.566	<0.113	<0.113	--
	GP06-9.5			9.5	<12.9	<32.2	<5.01	<0.000969	<0.000969	<0.00258	<0.00646	<0.000646	<0.00323	<0.000807	--
	GP06-15			15	<12.4	<31.0	<4.61	<0.000999	<0.000999	<0.00266	<0.00666	<0.000666	<0.00333	<0.000832	--
GP07	GP07-5.5	SoundEarth	08/31/06	5.5	<12.2	<30.5	<5.03	<0.000999	<0.000999	<0.00266	<0.00666	<0.000666	<0.00333	<0.000833	--
	GP07-12			12	<11.9	<29.8	<4.88	<0.000943	<0.000943	<0.00251	<0.00629	<0.000629	<0.00314	<0.000786	--
GP08	GP08-2.5	SoundEarth	08/31/06	2.5	458	161	759	0.495	<0.0989	1.59	0.371	<0.495	<0.0989	<0.0989	--
	GP08-6			6	<13.2	<32.9	<4.79	<0.00105	<0.00105	<0.00280	<0.00700	<0.000700	<0.00350	<0.000875	--
	GP08-12			12	<12.3	<30.7	<4.62	<0.000976	<0.000976	<0.00260	<0.00650	<0.000650	<0.00325	<0.000813	--
	GP08-15			15	<12.2	<30.4	<4.77	<0.000887	<0.000887	<0.00237	<0.00592	<0.000592	<0.00296	<0.000740	--
GP09	GP09-8	SoundEarth	09/01/06	8	<12.2	<30.6	<5.25	<0.00173	<0.00173	<0.00451	<0.0115	<0.00115	<0.00576	<0.00144	--
	GP09-12			12	<11.8	<29.6	<5.56	<0.00164	<0.00164	<0.00439	<0.0110	<0.00110	<0.00548	<0.00137	--
	GP09-15			15	<12.3	<30.6	<5.39	<0.00154	<0.00154	<0.00410	<0.0102	<0.00102	<0.00512	<0.00128	--
GP10	GP10-4	SoundEarth	09/01/06	4	156	<29.9	49.5	0.0679	0.00435	0.0200	0.0135	<0.000629	<0.00314	<0.000786	--
	GP10-7			7	15,700	<2,950	9,250	14.3	13.3	21.9	69.7	<0.474	<0.0948	<0.0948	--
	GP10-15			15	<12.2	<30.5	6.39	0.142	0.00582	0.0236	0.0335	0.000758	<0.00324	0.00976	--
GP11	GP11-8	SoundEarth	09/01/06	8	<11.6	<29.1	<4.96	<0.000969	<0.000969	<0.00258	<0.00646	<0.000646	<0.00323	<0.000807	--
	GP11-10			10	<12.1	<30.2	<4.91	<0.00101	<0.00101	<0.00269	<0.00672	<0.000672	<0.00336	<0.000840	--
	GP11-15			15	<12.3	<30.8	<4.44	<0.000915	<0.000915	<0.00244	<0.00610	<0.000610	<0.00305	<0.000762	--
GP12	GP12-12	SoundEarth	09/01/06	12	<11.9	<29.6	<5.10	<0.00100	<0.00100	<0.00268	<0.00670	<0.000670	<0.00335	<0.000837	--
	GP12-15			15	<11.7	<29.2	<4.79	<0.000997	<0.000997	<0.00266	<0.00664	<0.000664	<0.00332	<0.000831	--
GP13	GP13-8	SoundEarth	09/01/06	8	<11.1	<27.9	<5.06	<0.00113	<0.00113	<0.00301	<0.00752	<0.000752	<0.00376	<0.000941	--
	GP13-12			12	<11.4	<28.5	<4.63	0.00173	<0.00102	<0.00271	<0.00678	<0.000678	<0.00339	<0.000847	--
	GP13-14			14	<11.9	<29.7	<4.3	<0.000942	<0.000942	<0.00251	<0.00628	<0.000628	<0.00314	<0.000785	--
GP14	GP14-7	SoundEarth	09/01/06	7	1,390	<300	11.5	0.012	<0.00115	0.00673	<0.00767	<0.000767	<0.00383	<0.000958	--
	GP14-10			10	<12.1	<30.3	<5.17	0.0735	0.00463	0.0114	<0.00629	<0.000629	<0.00315	0.000982	--
	GP14-15			15	<11.7	<29.3	<4.96	<0.000899	<0.000899	<0.00240	<0.00599	<0.000599	<0.00300	0.0139	--
01MW59/B82	B082-02.5	SoundEarth	11/17/08	2.5	<50	<250	160 ^{lp}	<0.03	<0.05	0.13	0.34	--	--	<0.05	--
	B082-05			5	7,100	1,400	200 ^{lp}	<0.03	<0.05	0.13	0.067	--	--	<0.05	--
	B082-10			10	--	--	--	--	--	--	--	--	--	<0.05	--
	B082-15			15	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
01MW66/B117	B117-02.5	SoundEarth	07/23/09	2.5	<50	<250	17	<0.02	0.03	<0.02	<0.06	--	--	--	--
	B117-12.5		08/03/09	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
01MW67/B118	B118-01	SoundEarth	07/23/09	1	8,700	3,100	450	<0.2	<0.2	<0.2	<0.6	--	--	--	--
	B118-11			11	<50	<250	7	<0.02	<0.02	<0.02	<0.06	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
01MW68/B119	B119-10.5	SoundEarth	07/23/09	10.5	6,400	<250	1,100	29	45	17	57	--	--	--	--
	B119-21			21	<50	<250	<2	0.07	0.03	<0.02	<0.06	--	--	--	--
01MW69/B120	B120-13	SoundEarth	07/24/09	13	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B121	B121-0.5	SoundEarth	12/28/09	0.5	--	--	--	--	--	--	--	--	--	--	--
	B121-02.5			2.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B121-04.5			4.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B121-07.5			7.5	--	--	--	--	--	--	--	--	--	--	--
B122	B122-0.5	SoundEarth	12/28/09	0.5	1,300	2,200	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B122-4.5			4.5	--	--	79	<0.02	0.15	0.43	2	--	--	--	--
	B122-7.5			7.5	200	<250	--	--	--	--	--	--	--	--	--
B123	B123-0.5	SoundEarth	12/28/09	0.5	--	--	--	--	--	--	--	--	--	--	--
	B123-02.5			2.5	490	<250	10	<0.02	<0.02	0.04	0.07	--	--	--	--
	B123-04.5			4.5	2,900	390 ^y	640	21	2.2	8.9	17	--	--	--	--
	B123-07.5			7.5	--	--	--	--	--	--	--	--	--	--	--
B124	B124-02.5	SoundEarth	12/28/09	2.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B124-04.5			4.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B125	B125-04.5	SoundEarth	12/28/09	4.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B126	B126-02.5	SoundEarth	12/28/09	2.5	<50	<250	<2	0.1	<0.02	<0.02	<0.06	--	--	--	--
	B126-04.5			4.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B127	B127-02.5	SoundEarth	12/28/09	2.5	6,600	<250	47	<0.02	0.03	0.25	0.66	--	--	--	--
	B127-04.5			4.5	2,100	<250	780 ^{ip}	<0.2	2	0.65	13	--	--	--	--
	B127-09.5			9.5	2,400	<250	17	<0.02	<0.02	<0.02	0.22	--	--	--	--
B128	B128-01.5	SoundEarth	12/29/09	1.5	4,800	1,900	410	<0.02	4.9	0.25	3.9	--	--	--	--
	B128-04.5			4.5	--	--	--	--	--	--	--	--	--	--	--
	B128-07.5			7.5	11,000	670	1,500	52	24	20	62	--	--	--	--
	B128-12.5			12.5	--	--	--	--	--	--	--	--	--	--	--
B129	B129-02.5	SoundEarth	12/29/09	2.5	2,000	980	230	<0.2	0.49	1.6	3.4	--	--	--	--
	B129-05			5	<50	<250	35	<0.02	0.06	0.15	0.35	--	--	--	--
	B129-09.5			9.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B130	B130-07.5	SoundEarth	12/29/09	7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B152	B152-0.5	SoundEarth	03/01/10	0.5	--	--	--	--	--	--	--	--	--	--	--
	B152-02.5			2.5	--	--	--	--	--	--	--	--	--	--	--
	B152-04.5			4.5	--	--	--	--	--	--	--	--	--	--	--
	B152-07			7	8,700	460 ^x	200	0.51	0.66	1.8	6.5	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
Bulk Terminal Property															
B156	B156-0.5	SoundEarth	03/02/10	0.5	--	--	--	--	--	--	--	--	--	--	--
	B156-02.5			2.5	13,000	990 ^y	560	<0.2	0.68	8.3	16	--	--	--	--
	B156-04.5			4.5	--	--	--	--	--	--	--	--	--	--	--
B161	B161-0.5	SoundEarth	03/02/10	0.5	--	--	--	--	--	--	--	--	--	--	
	B161-02.5			2.5	96	<250	17	0.16	0.03	0.15	0.19	--	--	--	
	B161-04.5			4.5	--	--	--	--	--	--	--	--	--	--	
B165	B165-0.5	SoundEarth	03/02/10	0.5	--	--	--	--	--	--	--	--	--	--	
	B165-02.5			2.5	--	--	--	--	--	--	--	--	--		
	B165-04.5			4.5	--	--	--	--	--	--	--	--	--		
	B165-07			7	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	
B166	B166-0.5	SoundEarth	03/02/10	0.5	--	--	--	--	--	--	--	--	--		
	B166-02.5			2.5	2,400	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
	B166-04.5			4.5	--	--	--	--	--	--	--	--	--		
01MW72/B167	B167-0.5	SoundEarth	03/10/10	0.5	360	<250	8	0.05	0.03	0.03	0.08	--	--		
01MW73/B168	B168-0.5	SoundEarth	03/10/10	0.5	2,700	<250	28	<0.02	0.03	0.09	0.24	--	--		
	B168-05.5			5.5	<50	<250	--	--	--	--	--	--			
	B168-10			10	<50	<250	3	0.12	0.03	<0.02	0.12	--	--		
01MW74/B169	B169-05.5	SoundEarth	03/10/10	5.5	2,300	<250	2,600 ^p	12	16	24	89	--	--		
	B169-10.5			10.5	2,700	<250	200 ^p	3.9	0.26	1.3	1.1	--	--		
01MW75/B170	B170-05.5	SoundEarth	03/10/10	5.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
B176	B176-02.5	SoundEarth	03/25/11	2.5	2,400	360 ^x	200	<0.02	0.51	0.55	0.75	--	--		
B177	B177-02.5	SoundEarth	03/25/11	2.5	610	<250	4.9	<0.02	<0.02	<0.02	<0.06	--	--		
B178	B178-0.5	SoundEarth	03/25/11	0.5	640 ^x	890	<2	<0.02	<0.02	<0.02	<0.06	--	--		
B180	B180-04.5	SoundEarth	03/25/11	4.5	810	<250	1,300	0.50	3.9	11	55	--	--		
B181	B181-02.5	SoundEarth	03/25/11	2.5	<50	<250	2,800	40	100	57	250	--	--		
B183	B183-0.5	SoundEarth	04/14/11	0.5	62 ^x	<250	6.8	<0.02	<0.02	<0.02	<0.06	--	--		
	B183-02.5			2.5	420 ^x	<250	230	<0.02	0.04	0.41	1.9	--	--		
B184	B184-02.5	SoundEarth	04/14/11	2.5	2,300	<250	39	<0.02	<0.02	0.067	<0.06	--	--		
	B184-06			6	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
01MW90/B198	B198-02.5	SoundEarth	12/29/11	2.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
	B198-07.5			7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
01MW91/B199	B199-02.5	SoundEarth	12/29/11	2.5	<50	<250	5.0	<0.02	<0.02	<0.02	<0.06	--	--		
	B199-05			5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
	B199-07.5			7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
B200	200-0.5	SoundEarth	03/28/12	0.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
	B200-02.5			2.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--		
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
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2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾	
Bulk Terminal Property																
B201	B201-0.5	SoundEarth	03/28/12	0.5	1,300	1,900	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B202	B202-12.5	SoundEarth	04/05/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B203	B203-12.5	SoundEarth	04/06/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B204	B204-10	SoundEarth	04/06/12	10	<50	<250	33	0.025	0.089	0.31	0.51	--	--	--	--	
	B204-12.5			12.5	<50	<250	2.5	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B205	B205-12.5	SoundEarth	04/05/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B206	B206-10	SoundEarth	04/05/12	10	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
	B206-12.5			12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B207	B207-08	SoundEarth	04/05/12	8	<50	<250	5.1	<0.02	<0.02	0.029	0.084	--	--	--	--	
	B207-12.5			12.5	1,600	<250	190	0.26	0.85	1.8	5.4	--	--	--	--	--
B208	B208-12.5	SoundEarth	04/05/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B209	B209-10	SoundEarth	04/05/12	10	<50	<250	30	<0.02	0.089	0.19	0.46	--	--	--	--	
	B209-12.5			12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	--
B210	B210-12.5	SoundEarth	03/29/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B211	B211-12.5	SoundEarth	03/29/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B212	B212-12.5	SoundEarth	03/29/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B213	B213-0.5	SoundEarth	03/29/12	0.5	160 ^x	330	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B214	B214-02.5	SoundEarth	03/30/12	2.5	11,000	1,700	5,000	18	160	57	390	--	--	--	--	
	B214-04.5			4.5	3,900	<250	3,700	20	130	49	270	--	--	--	--	--
B215	B215-02.5	SoundEarth	03/30/12	2.5	<50	<250	4.2	<0.02	0.046	<0.02	<0.02	<0.06	--	--	--	
	B215-06.5			6.5	<50	<250	<2	<0.02	0.028	<0.02	<0.02	<0.06	--	--	--	--
B216	B216-0.5	SoundEarth	03/30/12	0.5	6,900	<250	680	0.95	3.6	2.8	65	--	--	--	--	
	B216-02.5			2.5	13,000	430	1,600	27	99	23	108	--	--	--	--	--
	B216-04.5			4.5	<50	<250	9.1	0.035	0.15	0.091	0.45	--	--	--	--	--
B217	B217-06.5	SoundEarth	03/30/12	6.5	6,300	360 ^x	570	11	13	14	42	--	--	--	--	
B218	B218-06.5	SoundEarth	03/30/12	6.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B221	B221-08	SoundEarth	04/06/12	8	20,000	2,400	940	0.67	3.7	8.7	16	--	--	--	--	
	B221-12.5			12.5	5,500	950	490	0.16	1.4	3.3	3.7	--	--	--	--	--
B222	B222-12.5	SoundEarth	04/06/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B223	B223-12.5	SoundEarth	04/06/12	12.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
B224	B224-12.5	SoundEarth	04/06/12	12.5	440	<250	42	<0.02	0.11	0.24	0.45	--	--	--	--	
B225	B225-02.5	SoundEarth	04/11/12	2.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
	B225-06.5			6.5	<50	<250	<2	<0.02	0.034	<0.02	<0.02	<0.06	--	--	--	
	B225-08			8	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	
	B225-10			10	<50	<250	13	0.062	0.10	0.065	0.23	--	--	--	--	
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE	



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾	
West Commodore Way																
01SB07	SB-07-05	IT	06/06/99	5	1,190	783	1,240	2.17	--	7.6	18.2	--	--	--	--	
01MW09/SB-36	SB-36-15	FW	2000	15	11,300	<275	4,340	<7.70	--	33.8	171	--	--	--	--	
01MW10/SB-37	SB-37-10	FW	2000	10	5,770	<275	1,080	<1.0	--	<2.40	<2.10	--	--	--	--	
	SB-37-15			15	9,130	<275	<5.00	<0.05	--	<0.05	<0.10	--	--	--	--	
01MW16/SB-60	SB-60-2	FW	07/19/01	2	58.7	79.8	22.8	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--	
	SB-60-5			5	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--	
	SB-60-10			10	<10.0	<25.0	<5.00	<0.0500	<0.0500	<0.0500	<0.100	--	--	--	--	
	SB-60-15			15	11,400	<2,520	1,240	1.68	<1.00	4.04	10.2	--	--	--	--	
	SB-60-20			20	<10.0	<25.0	<5.00	0.0500	<0.0500	<0.500	<0.100	--	--	--	--	
LR04	LR04-5	FW	12/04/02	5	7,970	<500	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--	
	LR04-10			10	7,060	<1,000	827	0.32	0.615	4.26	6.57	--	--	--	--	
	LR04-15			15	27,700	<5,000	2,850	4.87	4.96	13.2	50.1	--	--	--	--	
LR05	LR05-5	FW	12/04/02	5	2,990	<500	663	0.542	<0.500	2.43	2.82	<0.10	--	--	--	
	LR05-10			10	14,600	<2,500	1,320	2.23	7.44	9.51	33.9	--	--	--	--	
	LR05-15			15	5,780	<500	935	<0.600	1.91	4.82	20.5	--	--	--	--	
LR06	LR06-5	FW	12/01/02	5	17.6	<500	38	<0.0300	<0.0500	0.13	0.191	--	--	--	--	
	LR06-10			10	317	<1,000	<5.00	<0.0300	<0.0500	<0.0500	<0.100	--	--	--	--	
	LR06-15			15	10.3	<1,000	5.71	<0.0300	<0.0500	<0.0500	0.127	--	--	--	--	
01MW30/B01	B01-2	SoundEarth	04/21/06	2	293	428	--	--	--	--	--	--	--	--	--	
	B01-8			8	390	<61.5	83.9	<0.0220	<0.110	<0.110	<0.331	--	--	--	--	
	B01-15			15	--	--	<5.31	<0.0207	<0.103	<0.103	<0.310	<0.517	--	--	--	--
	B01-21			21	<11.4	<28.4	<4.89	<0.0202	<0.101	<0.101	<0.303	--	--	--	--	
01MW31	01MW31-10	SoundEarth	07/06/06	10	<12.2	<30.5	7.01	<0.00135	<0.00135	0.0370	<0.00902	<0.000902	<0.00451	<0.00113	<19	
	01MW31-13			13	<11.7	<29.1	<4.74	<0.02	<0.09	<0.09	<0.27	<0.045	<0.04	<0.04	<18	
	01MW31-20			20	<11.8	<29.5	4.90	0.05	0.14	0.46	0.89	<0.44	<0.04	<0.04	<18	
	01MW31-23			23	<11.8	<29.5	<4.71	0.02	<0.09	0.19	0.30	<0.45	<0.05	<0.05	<18	
01MW32	01MW32-10	SoundEarth	07/06/06	10	<12.4	<31.1	<4.35	<0.02	<0.09	<0.09	<0.26	<0.43	<0.04	<0.04	<17	
	01MW32-17.5			17.5	<11.5	<28.7	<4.81	<0.02	<0.10	<0.10	<0.29	<0.48	<0.05	<0.05	<19	
	01MW32-20			20	<12.1	<30.2	<4.92	<0.02	<0.10	<0.10	<0.30	<0.49	<0.05	<0.05	<19	
	01MW32-25			25	<12.3	<30.8	<4.77	0.0109	<0.00149	<0.00397	<0.00994	<0.000994	<0.00497	<0.00124	<19	
	01MW32-27			27	<12.5	<31.2	<4.67	<0.02	<0.09	<0.09	<0.28	<0.49	<0.05	<0.05	<19	
01MW33	01MW33-8.5	SoundEarth	07/07/06	8.5	7,070	657	637	<0.0242	<0.121	<0.121	<0.364	<0.606	<0.121	<0.121	<24	
	01MW33-11			11	1,400	<150	371	<0.02	<0.09	<0.09	<0.28	<0.47	<0.05	<0.05	<19	
	01MW33-18			18	21.4	<31.2	5.80	0.05	<0.11	<0.11	<0.32	<0.54	<0.05	<0.05	<21	
	01MW33-23			23	<12.7	<31.9	<5.42	<0.02	<0.11	<0.11	<0.33	<0.53	<0.05	<0.05	<22	
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE	



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
West Commodore Way															
01MW34	01MW34-11	SoundEarth	07/07/06	11	<11.8	<29.5	<4.65	<0.02	<0.09	<0.09	<0.28	<0.46	<0.05	<0.05	<19
	01MW34-18			18	<11.9	<29.7	<4.55	<0.02	<0.09	<0.09	<0.27	<0.45	<0.05	<0.05	<18
01MW35	01MW35-11	SoundEarth	07/07/06	11	73.3	<30.5	<4.80	<0.02	<0.10	<0.10	<0.29	<0.48	<0.05	<0.05	<19
	01MW35-16			16	446	<29.2	331	<0.00681	<0.00681	<0.181	<0.0454	<0.00454	<0.0227	<0.00567	<19
	01MW35-21			21	<11.8	<29.4	<4.87	<0.02	<0.10	<0.10	<0.29	<0.49	<0.05	<0.05	<19
01MW36	01MW36-11	SoundEarth	07/07/06	11	<12.1	<30.2	<4.62	<0.02	<0.09	<0.09	<0.28	<0.46	<0.05	<0.05	<18
	01MW36-15			15	<11.1	<27.8	<4.96	<0.02	<0.10	<0.10	<0.30	<0.50	<0.05	<0.05	<20
	01MW36-21			21	<12.3	<30.7	<4.87	<0.0137	<0.0137	<0.00365	<0.00914	<0.000914	<0.00457	<0.00114	<19
01MW47/B68	B68-10	SoundEarth	11/29/06	10	<50	<250	3	<0.02	<0.02	<0.02	0.21	--	--	--	--
	B68-15			15	11,000	<250	26	<0.02	<0.02	0.22	1.8	--	--	--	--
	B68-20			20	10,000	<250	150	1.4	0.45	2.8	1.6	<0.05	<0.05	<0.05	<50
	B68A-25			25	<50	<250	10	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<50
01MW48/B69	B69-15	SoundEarth	11/30/06	15	<50	<250	<2	<0.03	<0.05	<0.05	<0.15	--	--	--	--
	B69-23			23	<50	<250	3	0.55	<0.05	<0.05	<0.15	--	--	--	--
	B69-28			28	<50	<250	<2	0.28	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<50
	B69-35			35	<50	<250	<2	<0.03	<0.05	<0.05	<0.15	--	--	--	--
01MW49/B70	B70-10	SoundEarth	12/21/06	10	<50	<250	<2.5	<0.03	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<50
	B70-13			13	6,800	<250	280	<0.03	<0.05	0.05	<0.15	<0.05	<0.05	<0.05	<50
	B70-16			16	<50	<250	<2.5	<0.03	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<50
01MW50/B71	B71-11	SoundEarth	12/21/06	11	<50	<250	5.0	<0.03	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<50
	B71-18			18	<50	<250	3.5	<0.03	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<50
	B71-33			33	<50	<250	<2.5	<0.03	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<50
01MW51/B72	B72-16	SoundEarth	12/22/06	16	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B72-31			31	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B72-40			40	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
01MW84/B192	B192-7.5'	SoundEarth	04/19/11	7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B192-15'			15	<50	<250	5.4	<0.02	0.028	0.20	0.23	--	--	--	--
	B192-17.5'			17.5	--	--	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
01MW86/B194	B194-07.5'	SoundEarth	04/20/11	7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B194-10'			10	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B194-17.5'			17.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE



Table 2
Soil Analytical Results for TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)										
					DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾⁽⁴⁾	Toluene ⁽³⁾⁽⁴⁾	Ethylbenzene ⁽³⁾⁽⁴⁾	Total Xylenes ⁽³⁾⁽⁴⁾	MTBE ⁽⁴⁾⁽⁵⁾	EDB ⁽⁵⁾	EDC ⁽⁵⁾	Ethanol ⁽⁵⁾
West Commodore Way															
01MW87/B195	B195-07.5	SoundEarth	04/20/11	7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B195-10			10	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B195-17.5			17.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
01MW88/B196	B196-07.5	SoundEarth	04/21/11	7.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B196-10			10	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	B196-15			17.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
MTCA Cleanup Level for Soil⁽⁶⁾					2,000	2,000	30	0.03	7	6	9	0.1	0.005	11⁽⁷⁾	NE

NOTES:

Red denotes concentration exceeds MTCA cleanup level.

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for Soil; the detection limit has been raised due to high concentrations of associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Soil samples collected in 2011 were submitted for laboratory analysis by Method NWTPH-Dx following a silica gel cleanup sample preparation.

Data prior to April 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾ Analyzed by Method NWTPH-Dx.

⁽²⁾ Analyzed by Method NWTPH-Gx.

⁽³⁾ Analyzed by EPA Method 8021B or 8260B.

⁽⁴⁾ BTEX and MTBE also analyzed by Washington Volatile Petroleum Hydrocarbon Method. Most conservative concentration listed.

⁽⁵⁾ Analyzed by EPA Method 8260B.

⁽⁶⁾ MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽⁷⁾ MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

Laboratory Notes:

⁽⁸⁾ Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

^{*} The pattern of peaks present is not indicative of diesel or the sample chromatographic pattern does not resemble the fuel standard used for quantitation.

[†] The pattern of peaks is not indicative of motor oil.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene, and total xylenes

CLARC = Cleanup Levels and Risk Calculations

DRPH = diesel-range petroleum hydrocarbons

EDB = 1, 2-dibromoethane

EDC = 1,2-dichloroethane

EPA = U.S. Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

GRPH = gasoline-range petroleum hydrocarbons

IT = IT Corporation

MTBE = methyl tertiary-butyl ether

MTCA = Washington State Model Toxics Control Act

NE = not established

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

SoundEarth = SoundEarth Strategies, Inc.

TPH = total petroleum hydrocarbons

WAC = Washington Administrative Code



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrachlorophenol	3,4,5- Trichlorophenol
Bulk Terminal Property																					
SS-01	SS-01	FW	11/00	--	3.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SS-02	SS-02			--	<1.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SS-03	SS-03			--	<2.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SS-04	SS-04			--	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-01	SB-01-0.6	FW	11/00	46.3	0.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-01-2			44.8	<0.250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-01-5			41.8	0.0871	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-01-10			36.8	0.0812	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-01-14			32.8	0.0578	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-02	SB-02-0.6	FW	11/00	46.0	1.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-02-2			44.5	<0.250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-02-5			41.5	0.0615	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-02-10			36.5	0.0613	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-02-14			32.5	0.0585	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-03	SB-03-0.6	FW	11/00	45.7	202	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB03A (2FT)			44.2	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-04	SB-04-0.6	FW	11/00	45.7	803	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-04-2			44.2	1.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-04-5			41.2	20.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-04-10			36.2	0.233	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-05	SB-05-0.6	FW	11/00	46.0	2.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-05-2			44.5	0.0761	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-05-5			41.5	0.264	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-05-10			36.5	0.0981	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					2.5 ⁽²⁾	24,000 ⁽³⁾	400 ⁽³⁾	240 ⁽³⁾	NE	NE	NE	NE	91 ⁽²⁾	8,000 ⁽³⁾	NE	NE	NE	NE	2,400 ⁽³⁾	NE	NE



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrahydrophenol	3,4,5- Trichlorophenol
Bulk Terminal Property																					
SB-52	SB-52-2.5	FW	07/16/01	44.0	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-52-6			40.5	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-52-10			36.5	0.129	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-53	SB-53-2	FW	07/16/01	44.5	0.0916	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-53-5			41.5	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-53-10			36.5	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-54	SB-54-2	FW	07/16/01	44.2	0.181	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-54-5			41.2	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-54-10			36.2	0.0780	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-55	SB-55-2.5	FW	07/16/01	43.4	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-55-6			39.9	0.174	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-55-10			35.9	0.0770	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW14/SB-56	SB-56-2.5	FW	07/17/01	42.5	<0.500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-56-5			40.0	8.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-56-10			35.0	0.0765	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-57	SB-57-1.5	FW	07/2001	45.5	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SB-59	SB-59-2	FW	07/19/01	46.0	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB-59-5			43.0	<0.500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-59-10			38.0	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-59-15			33.0	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB-59-20			28.0	0.148	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP01	GP01-8	SoundEarth	08/31/06	39.5	<0.0651	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP01-11			36.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	GP01-15			32.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP02	GP02-8	SoundEarth	08/31/06	39.5	<0.0623	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP02-11			36.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	GP02-15			32.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrahydrophenol	3,4,5- Trichlorophenol
Bulk Terminal Property																					
GP03	GP03-6	SoundEarth	08/31/06	41.5	<0.0623	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP03-12			35.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GP04	GP04-8	SoundEarth	08/31/06	39.5	<0.0588	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP04-10			37.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP04-15			32.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP05	GP05-8	SoundEarth	08/31/06	38.9	<0.0596	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP05-12			34.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP05-15			31.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP06	GP06-2	SoundEarth	08/31/06	44.8	<2.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP06-9.5			37.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP06-15			31.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP07	GP07-5.5	SoundEarth	08/31/06	41.2	<0.0606	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP07-12			34.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP08	GP08-2.5	SoundEarth	08/31/06	44.4	<1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP08-6			40.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP08-12			34.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP08-15			31.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP09	GP09-8	SoundEarth	09/01/06	41.0	<0.0617	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP09-12			37.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP09-15			34.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP10	GP10-4	SoundEarth	09/01/06	42.5	<0.0599	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP10-7			39.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP10-15			31.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP11	GP11-8	SoundEarth	09/01/06	39.2	<0.579	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP11-10			37.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP11-15			32.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP12	GP12-12	SoundEarth	09/01/06	40.5	<0.0599	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP12-15			37.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP13	GP13-8	SoundEarth	09/01/06	38.9	<0.0550	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP13-12			34.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP13-14			32.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrahalorophenol	3,4,5- Trichlorophenol
Bulk Terminal Property																					
GP14	GP14-7	SoundEarth	09/01/06	39.9	<1.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP14-10			36.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP14-15			31.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GP15	GP15-4	SoundEarth	09/05/06	42.5	<0.0579	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP15-10			36.5	<0.0602	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GP16	GP16-4	SoundEarth	09/05/06	42.5	<0.0617	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP16-5.5			41.0	<0.0629	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP16-9.5			37.0	<0.0577	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GP17	GP17-6	SoundEarth	09/05/06	40.1	<0.0593	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP17-8			38.1	3.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP17-12			34.1	<0.0611	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GP18	GP18-4	SoundEarth	09/05/06	42.2	<0.0618	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP18-8			38.2	<0.0627	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP18-15			31.2	<0.0619	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP19	GP19-7	SoundEarth	09/05/06	39.2	0.185	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP19-12			34.2	0.162	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP19-15			31.2	<0.0605	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GP20	GP20-8	SoundEarth	09/05/06	37.9	2.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP20-12			33.9	<0.298	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP20-15			30.9	<0.0637	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
B121	B121-0.5	SoundEarth	12/28/09	46.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
	B121-02.5			44.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
	B121-04.5			42.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
	B121-07.5			39.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
B122	B122-0.5	SoundEarth	12/28/09	45.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
	B122-4.5			41.7	2.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2		
	B122-7.5			38.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
B123	B123-0.5	SoundEarth	12/28/09	45.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
	B123-02.5			43.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			
	B123-04.5			41.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			
	B123-07.5			38.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																	
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrachlorophenol	3,4,5- Trichlorophenol	
Bulk Terminal Property																						
B128	B128-01.5	SoundEarth	12/29/09	45.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
	B128-04.5			42.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
	B128-07.5			39.1	<0.2	0.42	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	B128-12.5			34.1	<0.2	0.64	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B138	B138-0.5	SoundEarth	03/01/10	44.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B138-02.5			42.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B138-04.5			40.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B139	B139-0.5	SoundEarth	03/01/10	44.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B139-02.5			42.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B139-04.5			40.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B140	B140-0.5	SoundEarth	03/01/10	45.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B140-02.5			43.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B140-04.5			41.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B141	B141-0.5	SoundEarth	03/01/10	45.6	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B141-02.5			43.6	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B141-04.5			41.6	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B142	B142-0.5	SoundEarth	03/01/10	45.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B142-02.5			43.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B142-04.5			41.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B143	B143-0.5	SoundEarth	03/01/10	44.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B143-02.5			42.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B143-0.4.5			40.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B144	B144-0.5	SoundEarth	03/01/10	45.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B144-02.5			43.7	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
	B144-04.5			41.7	0.26	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
B145	B145-0.5	SoundEarth	03/01/10	46.0	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B145-02.5			44.0	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B145-04.5			42.0	0.38	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B146	B146-0.5	SoundEarth	03/01/10	46.4	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B146-02.5			44.4	1.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B146-04.5			42.4	0.49	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE	



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	2,3,4-Trichlorophenol	3,5-Dichlorophenol	2,3,6-Trichlorophenol	3,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrachlorophenol	3,4,5-Trichlorophenol
Bulk Terminal Property																					
B147	B147-0.5	SoundEarth	03/01/10	46.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B147-02.5			44.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B147-04.5			42.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
B148	B148-0.5	SoundEarth	03/01/10	46.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B148-02.5			44.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B148-04.5			42.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B149	B149-0.5	SoundEarth	03/01/10	45.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B149-02.5			43.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B149-04.5			41.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B150	B150-0.5	SoundEarth	03/01/10	45.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
	B150-04.5			41.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	
B151	B151-0.5	SoundEarth	03/01/10	46.5	4.1	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.37	<0.2	3.5	3.8
	B151-02.5			44.5	0.55	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	0.75
	B151-04.5			42.5	4.0	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	0.13	<0.1	<0.1	<0.1	<0.1	<0.2	2.7	5.5
	B151-06			41.0	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1
B152	B152-0.5	SoundEarth	03/01/10	46.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B152-02.5			44.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B152-04.5			42.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
B156	B156-0.5	SoundEarth	03/02/10	46.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B156-02.5			44.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B156-04.5			42.3	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
B161	B161-0.5	SoundEarth	03/02/10	46.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B161-02.5			44.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B161-04.5			42.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
B165	B165-0.5	SoundEarth	03/02/10	46.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B165-02.5			44.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B165-04.5			42.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
B166	B166-0.5	SoundEarth	03/02/10	46.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B166-02.5			44.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
	B166-04.5			42.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																	
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrahalophenol	3,4,5- Trichlorophenol	
Bulk Terminal Property																						
L5IW01	L5IW01-01	SoundEarth	05/19/10	45.2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2		
	L5IW01-02.5			43.7	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2
	L5IW01-04.5			41.7	0.28	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2
J5IW01	J5IW01-0.5	SoundEarth	05/20/10	44.5	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2	
	J5IW01-02			43.0	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2
	J5IW01-03.5			41.5	0.46	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2
K5IW01	K5IW01-01	SoundEarth	05/20/10	44.9	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2	
	K5IW01-02.5			43.4	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2
	K5IW01-04.5			41.4	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1
N7B01	N7B01-01	SoundEarth	05/26/10	45.6	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	
	N7B01-02.5			44.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
	N7B01-04.5			42.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
N9IW01	N9IW01-01	SoundEarth	05/25/10	45.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	
	N9IW01-02.5			44.0	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
	N9IW01-04.5			42.0	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
Q7IW01	Q7IW01-0.5	SoundEarth	06/01/10	46.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	
	Q7IW01-02.5			44.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
	Q7IW01-04.5			42.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
Q9IW01	Q9IW01-0.5	SoundEarth	06/02/10	46.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	
	Q9IW01-02.5			44.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
	Q9IW01-04.5			42.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
J12B01	J12B01-0.5	SoundEarth	06/09/10	46.3	0.12	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	
	J12B01-02.5			44.3	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
	J12B01-04.5			42.3	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
B183	B183-04.5	SoundEarth	04/14/11	42.2	<0.1 ^h	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B183-06			40.7	0.40 ^h	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE	



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																		
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrahydrophenol	3,4,5- Trichlorophenol		
B184	B184-0.5	SoundEarth	04/14/11	45.7	<0.1 ⁱⁱ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	B184-02.5			43.7	<0.1 ⁱⁱ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B200	B200-0.5	SoundEarth	03/28/12	46.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	B200-02.5			44.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B201	B201-0.5	SoundEarth	03/28/12	46.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B202	B202-12.5	SoundEarth	04/05/12	34.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B203	B203-12.5	SoundEarth	04/06/12	34.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B204	B204-10	SoundEarth	04/06/12	36.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B204-12.5			33.9	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B205	B205-12.5	SoundEarth	04/05/12	33.7	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B206	B206-10	SoundEarth	04/05/12	36.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B207	B207-08	SoundEarth	04/05/12	37.9	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B207-12.5			33.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B208	B208-12.5	SoundEarth	04/05/12	33.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B209	B209-10	SoundEarth	04/05/12	36.1	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B210	B210-12.5	SoundEarth	03/29/12	32.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B211	B211-12.5	SoundEarth	03/29/12	33.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B212	B212-12.5	SoundEarth	03/29/12	32.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B213	B213-0.5	SoundEarth	03/29/12	46.5	0.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B214	B214-0.5	SoundEarth	03/30/12	46.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B214-02.5			44.0	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B214-04.5			42.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B215	B215-02.5	SoundEarth	03/30/12	44.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B215-04.5			42.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B215-06.5			40.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B216	B216-0.5	SoundEarth	03/30/12	46.0	2.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B216-02.5			44.0	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B216-04.5			42.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B217	B217-02.5	SoundEarth	03/30/12	44.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B217-04.5			42.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B217-06.5			40.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B218	B218-02.5	SoundEarth	03/30/12	44.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B218-04.5			42.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B218-06.5			40.4	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B221	B221-08	SoundEarth	04/06/12	38.2	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B221-12.5			33.7	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B222	B222-12.5	SoundEarth	04/06/12	33.7	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B223	B223-12.5	SoundEarth	04/06/12	32.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B224	B224-12.5	SoundEarth	04/06/12	32.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	NE	2,400⁽³⁾	NE	NE	



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																				
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5- Trichlorophenol	2,4,6- Trichlorophenol	2,4,5- Trichlorophenol	2,3,4- Trichlorophenol	3,5- Dichlorophenol	2,3,6- Trichlorophenol	3,4- Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrahalorophenol	3,4,5- Trichlorophenol				
B225	B225-02.5	SoundEarth	04/11/12	44.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	B225-06.5			40.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B225-08			39.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B225-10			37.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B234	B234-05	SoundEarth	05/11/12	46.5	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
B235	B235-02.5	SoundEarth	05/11/12	44.2	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B236	B236-0.5	SoundEarth	05/11/12	46.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B236-02.5			44.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B237	B237-0.5	SoundEarth	05/14/12	44.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B237-02.5			42.0	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B238	B238-0.5	SoundEarth	05/14/12	44.3	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B238-02.5			42.3	<0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	NE	2,400⁽³⁾	NE	NE	NE	NE	



Table 3
Soil Analytical Results for Semivolatile Phenols
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																	
					Pentachlorophenol	Phenol	2-Chlorophenol	2,4- and 2,3-Dichlorophenol	2,6-Dichlorophenol	3- and 4-Chlorophenol	2,5-Dichlorophenol	2,3,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	2,3,4-Trichlorophenol	3,5-Dichlorophenol	2,3,6-Trichlorophenol	3,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol	2,3,4,5- and 2,3,5,6-Tetrachlorophenol	3,4,5-Trichlorophenol	
West Commodore Way																						
01SB07	SB-07-05	IT	06/06/99	40.0	<0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
01MW47/B68	B68-10	SoundEarth	11/29/06	34.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	B68-15			29.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B68-20			24.3	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B68A-25			19.3	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW48/B69	B69-15	SoundEarth	11/30/06	30.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	B69-23			22.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B69-28			17.0	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B69-35			10.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW49/B70	B70-10	SoundEarth	12/21/06	34.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	B70-13			31.6	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B70-16			28.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B70-18			26.6	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B70-33			11.6	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW50/B71	B71-11	SoundEarth	12/21/06	33.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	B71-18			26.0	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B71-33			11.0	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					2.5⁽²⁾	24,000⁽³⁾	400⁽³⁾	240⁽³⁾	NE	NE	NE	NE	91⁽²⁾	8,000⁽³⁾	NE	NE	NE	NE	2,400⁽³⁾	NE	NE	

NOTES:

Red denotes concentration exceeds MTCA cleanup level.

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for Soil; the detection limit has been raised due to high concentrations of associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by EPA Method 8270 Modified or 8270C-SIM.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Non-carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

Laboratory Note:

²The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

amsl = above mean sea level

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

IT = IT Corporation

MTCA = Washington State Model Toxics Control Act

NE = not established

SoundEarth = SoundEarth Strategies, Inc.

WAC = Washington Administrative Code



Table 4
Soil Analytical Results for Selected PAHs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											Analytical Results ⁽¹⁾ (milligrams per kilogram)						TEQ ⁽¹⁾ (milligrams per kilogram)									
					Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Acenaphthene	Ace-naphthylene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a,h,i) perylene	Benzo(a) anthracene	Chrysene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Indeno (1,2,3-cd) pyrene		Dibenz (a,h) anthracene								
Bulk Terminal Property																															
SB-02	SB-02-2	FW	11/00	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.23 ⁽²⁾									
SB-03	SB-03-0.6	FW	11/00	0.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.08 ⁽²⁾									
	SB-03 (2 ft)			2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.53 ⁽²⁾								
SB-04	SB-04-0.6	FW	11/00	0.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.67 ⁽²⁾									
	SB-04-2			2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.70 ⁽²⁾								
	SB-04-5			5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.09 ⁽²⁾								
SS-01	SS-01	FW	11/00	0-0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.75 ⁽²⁾									
SS-03	SS-03	FW	11/00	0-0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.75 ⁽²⁾									
SS-04	SS-04	FW	11/00	0-0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.26 ⁽²⁾									
SB-27	SB-27-5	FW	11/00	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.35 ⁽²⁾									
01MW06/SB-29	SB-29-2	FW	11/00	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.75 ⁽²⁾									
	SB-29-5			5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.7 ⁽²⁾								
SB-52	SB-52-2.5	FW	07/16/01	2.5	--	--	--	--	--	--	--	--	--	--	0.0252	0.03	0.019	0.0138	< 0.0100	0.031	< 0.0100	0.0270									
	SB-52-6			6	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
	SB-52-10			10	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
SB-53	SB-53-2	FW	07/16/01	2	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	0.011	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.0135									
	SB-53-5			5	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
	SB-53-10			10	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
SB-54	SB-54-2	FW	07/16/01	2	--	--	--	--	--	--	--	--	--	--	0.159	0.204	0.111	< 0.0200	< 0.0200	0.09	< 0.0200	0.141									
	SB-54-5			5	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
	SB-54-10			10	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
SB-55	SB-55-2.5	FW	07/16/01	2.5	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	0.013	< 0.0100	< 0.0100	0.029	< 0.0100	0.0182									
	SB-55-6			6	--	--	--	--	--	--	--	--	--	--	< 0.0100	0.014	0.014	< 0.0100	< 0.0100	0.029	< 0.0100	0.0193									
	SB-55-10			10	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
01MW14/SB-56	SB-56-2.5	FW	07/17/01	2.5	--	--	--	--	--	--	--	--	--	--	0.717	1.15	0.757	< 0.500	< 0.500	< 0.500	< 0.500	0.940									
	SB-56-5			5	--	--	--	--	--	--	--	--	--	--	< 0.500	< 0.500	0.736	< 0.500	< 0.500	< 0.500	< 0.500	0.864									
	SB-56-10			10	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.01	0.028	0.011	0.0105									
SB-57	SB-57-1.5	FW	07/01	1.5	--	--	--	--	--	--	--	--	--	--	< 0.100	0.189	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.0769									
SB-59	SB-59-2	FW	07/19/01	2	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
	SB-59-5			5	--	--	--	--	--	--	--	--	--	--	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.0755									
	SB-59-10			10	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	0.111	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.114									
	SB-59-15			15	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
	SB-59-20			20	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755									
MTCA Cleanup Level for Soil					5⁽³⁾											4,800⁽⁴⁾	NE	3,200⁽⁴⁾	NE	24,000⁽⁴⁾	3,200⁽⁴⁾	2,400⁽⁴⁾	NE	NE	NE	0.1⁽³⁾	NE	NE	NE	NE	0.1⁽³⁾



Table 4
Soil Analytical Results for Selected PAHs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											Analytical Results ⁽¹⁾ (milligrams per kilogram)						TEQ ⁽¹⁾ (milligrams per kilogram)			
					Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Acenaphthene	Ace-naphthylene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(g,h,i) perylene	Benzo(a) anthracene TEF: 0.1	Chrysene TEF: 0.01	Benzo(a) pyrene TEF: 1	Benzo(b) fluoranthene TEF: 0.1	Benzo(k) fluoranthene TEF: 0.1	Indeno (1,2,3-cd) pyrene TEF: 0.1		Dibenz (a,h) anthracene TEF: 0.1		
Bulk Terminal Property																									
01MW17/SB-61	SB-61-2	FW	07/19/01	2	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	0.033	0.0295	< 0.0100	0.0463	< 0.0100	0.04183		
	SB-61-5			5	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
	SB-61-15			10	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
	SB-61-15			15	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
01MW21	01MW-21-5	FW	12/02/02	5	<0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
01MW23	01MW-23-5	FW	12/02/02	5	3.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	01MW-23-5			5	1.84	5.08	8.51	<0.0500	<0.0500	<0.0500	1.28	0.384	0.072	0.352	<0.0500	< 0.0500	0.108	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	0.0386	
01MW24	01MW24-5	FW	12/3/02	5	2.79	5.78	10.4	<0.0100	<0.0100	0.522	0.847	0.243	0.0312	0.107	<0.0100	0.0123	0.034	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00857		
LR03	LR03-5	FW	12/4/02	5	0.0619	0.78	1.39	0.172	<0.0100	0.0937	0.227	0.056	0.0312	0.0167	<0.0100	0.0123	0.035	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00858		
LR07	LR07-5	FW	12/02	5	4.48	--	72.9	5.23	3.07	4.15	8.21	<0.0100	<0.0100	<0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755		
GP01	GP01-8	SoundEarth	08/31/06	8	<0.00712	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP01-11			11	<0.00327	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP01-15			15	<0.00609	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP02	GP02-8	SoundEarth	08/31/06	8	<0.00665	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP02-11			11	<0.00640	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP02-15			15	<0.00688	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP03	GP03-6	SoundEarth	08/31/06	6	<0.00695	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP03-12			12	<0.00739	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GP04	GP04-8	SoundEarth	08/31/06	8	<0.00631	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP04-10			10	<0.00688	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP04-15			15	<0.00686	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP05	GP05-8	SoundEarth	08/31/06	8	<0.00683	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP05-12			12	<0.00740	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP05-15			15	<0.00698	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP06	GP06-2	SoundEarth	08/31/06	2	5.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP06-9.5			9.5	<0.00646	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP06-15			15	<0.00666	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP07	GP07-5.5	SoundEarth	08/31/06	5.5	<0.00666	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP07-12			12	<0.00629	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP08	GP08-2.5	SoundEarth	08/31/06	2.5	<0.495	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP08-6			6	<0.00700	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP08-12			12	<0.00650	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP09	GP09-8	SoundEarth	09/01/06	8	<0.0115	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	GP09-12			12	<0.0110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP09-15			15	<0.0102	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					5⁽³⁾					4,800⁽⁴⁾	NE	3,200⁽⁴⁾	NE	24,000⁽⁴⁾	3,200⁽⁴⁾	2,400⁽⁴⁾	NE	NE	0.1⁽²⁾	NE	NE	NE	NE	0.1⁽²⁾	



Table 4
Soil Analytical Results for Selected PAHs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											Analytical Results ⁽¹⁾ (milligrams per kilogram)						TEQ ⁽¹⁾ (milligrams per kilogram)	
					Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Acenaphthene	Ace-naphthylene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a,h,i)perylene	Benzo(a)anthracene TEF: 0.1	Chrysene TEF: 0.01	Benzo(a)pyrene TEF: 1	Benzo(b)fluoranthene TEF: 0.1	Benzo(k)fluoranthene TEF: 0.1	Indeno(1,2,3-cd)pyrene TEF: 0.1		Dibenz(a,h)anthracene TEF: 0.1
Bulk Terminal Property																							
GP10	GP10-4	SoundEarth	09/01/06	4	0.0335	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP10-7			7	25.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	GP10-15			15	0.0308	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP11	GP11-8	SoundEarth	09/01/06	8	<0.00646	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP11-10			10	<0.00672	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	GP11-15			15	<0.00610	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP12	GP12-12	SoundEarth	09/01/06	12	<0.00670	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP12-15			15	<0.00664	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP13	GP13-8	SoundEarth	09/01/06	8	<0.00752	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP13-12			12	<0.00678	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	GP13-14			14	<0.00628	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GP14	GP14-7	SoundEarth	09/01/06	7	<0.00767	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	GP14-10			10	0.00728	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	GP14-15			15	<0.00599	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW37/SB58	SB58-2.5	SoundEarth	09/07/06	2.5	<0.0126	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB58-7.5			7.5	<0.0108	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB58-12.5			12.5	<0.0106	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW38/SB59	SB59-2.5'	SoundEarth	09/07/06	2.5	13.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB59-7.5'			7.5	<0.501	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB59-12.5			12.5	<0.0121	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW39/SB60	SB60-2.5	SoundEarth	09/07/06	2.5	<0.0106	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB60-7.5			7.5	<0.0106	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB60-12.5			12.5	<0.0106	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW40/SB61	SB61-2.5	SoundEarth	09/07/06	2.5	<0.0110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB61-7.5			7.5	<0.00953	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB61-12.5			12.5	<0.00860	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW41/SB62	SB62-2.5	SoundEarth	09/08/06	2.5	<0.00962	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB62-7.5			7.5	<0.0101	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB62-12.5			12.5	<0.0110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW42/SB63	SB63-2.5	SoundEarth	09/08/06	2.5	<0.00930	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB63-7.5			7.5	<0.0101	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB63-12.5			12.5	<0.0100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW43/SB64	SB64-7.5	SoundEarth	09/08/06	7.5	<0.0100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SB64-12.5			12.5	<0.00897	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB64-17.5			17.5	<0.0103	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil					5 ⁽³⁾	4,800 ⁽⁴⁾	NE	3,200 ⁽⁴⁾	NE	24,000 ⁽⁴⁾	3,200 ⁽⁴⁾	2,400 ⁽⁴⁾	NE	NE	NE	0.1 ⁽⁵⁾	NE	NE	NE	NE	NE	0.1 ⁽⁵⁾	



Table 4
Soil Analytical Results for Selected PAHs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results (milligrams per kilogram)											Analytical Results ⁽¹⁾ (milligrams per kilogram)						TEQ ⁽¹⁾ (milligrams per kilogram)			
					Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Acenaphthene	Ace-naphthylene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a,h,i)perylene	Benzo(a)anthracene TEF: 0.1	Chrysene TEF: 0.01	Benzo(a)pyrene TEF: 1	Benzo(b)fluoranthene TEF: 0.1	Benzo(k)fluoranthene TEF: 0.1	Indeno(1,2,3-cd)pyrene TEF: 0.1		Dibenz(a,h)anthracene TEF: 0.1		
West Commodore Way																									
01MW16/SB-60	SB-60-2	FW	07/19/01	2	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	0.021	< 0.0100	0.0209	< 0.0100	< 0.0100	< 0.0100	0.00930	
	SB-60-5			5	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
	SB-60-10			10	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
	SB-60-15			15	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
	SB-60-20			20	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.00755
01MW30/B01	B01-15	SoundEarth	04/21/06	15	<0.103	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW31	01MW31-10	SoundEarth	07/06/06	10	0.0626	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW32	01MW32-25	SoundEarth	07/06/06	25	<0.00994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW33	01MW33-8.5	SoundEarth	07/07/06	8.5	<0.606	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW35	01MW35-16	SoundEarth	07/07/06	16	<0.0454	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW36	01MW36-21	SoundEarth	07/07/06	21	<0.00914	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW48/B69	B69-28	SoundEarth	11/30/06	28	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW50/B71	B71-18	SoundEarth	12/21/06	18	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MTCA Cleanup Level for Soil						5 ⁽³⁾	4,800 ⁽⁴⁾	NE	3,200 ⁽⁴⁾	NE	24,000 ⁽⁴⁾	3,200 ⁽⁴⁾	2,400 ⁽⁴⁾	NE	NE	NE	0.1 ⁽²⁾	NE	NE	NE	NE	NE	0.1 ⁽²⁾		

NOTES:

Red denotes concentration exceeds MTCA cleanup level.
 Samples analyzed by GC/MS-SIM, or EPA Method 8270C.

⁽¹⁾Analytical result for each individual cPAH is multiplied by the TEF and all seven cPAH values are added. When analytical results are reported as less than the LRL, half of the LRL is used for the calculation, as shown.

⁽²⁾Method of calculating cPAH value unknown.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽⁴⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

-- = not analyzed/not applicable
 < = not detected at a concentration exceeding the laboratory reporting limit
 bgs = below ground surface
 CLARC = Cleanup Levels and Risk Calculations
 cPAH = carcinogenic polycyclic aromatic hydrocarbon
 EPA = U.S. Environmental Protection Agency
 FW = Foster Wheeler Environmental Corporation
 LRL = laboratory reporting limit
 MTCA = Washington State Model Toxics Control Act

NE = not established
 PAH = polycyclic aromatic hydrocarbon
 SoundEarth = SoundEarth Strategies, Inc.
 TEF = toxicity equivalency factor
 TEQ = Toxic Equivalency Quotient
 WAC = Washington Administrative Code



Table 5
Soil Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)							
					Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver
Bulk Terminal Property												
SB-52	SB-52-2.5	FW	07/16/01	2.5	--	--	--	--	5.02	--	--	--
	SB-52-6			6	--	--	--	--	7.45	--	--	--
	SB-52-10			10	--	--	--	--	2.39	--	--	--
SB-53	SB-53-2	FW	07/16/01	2	--	--	--	--	2.67	--	--	--
	SB-53-5			5	--	--	--	--	5.83	--	--	--
	SB-53-10			10	--	--	--	--	2.54	--	--	--
SB-54	SB-54-2	FW	07/16/01	2	--	--	--	--	3.24	--	--	--
	SB-54-5			5	--	--	--	--	4.08	--	--	--
	SB-54-10			10	--	--	--	--	2.37	--	--	--
SB-55	SB-55-2.5	FW	07/16/01	2.5	--	--	--	--	4.98	--	--	--
	SB-55-6			6	--	--	--	--	7.56	--	--	--
	SB-55-10			10	--	--	--	--	2.58	--	--	--
01MW14/SB-56	SB-56-2.5	FW	07/17/01	2.5	--	--	--	--	10.9	--	--	--
	SB-56-5			5	--	--	--	--	6.85	--	--	--
	SB-56-10			10	--	--	--	--	2.59	--	--	--
SB-57	SB-57-1.5	FW	07/2001	1.5	--	--	--	--	13.20	--	--	--
SB-59	SB-59-2	FW	07/19/01	2	--	--	--	--	5.24	--	--	--
	SB-59-5			5	--	--	--	--	8.14	--	--	--
	SB-59-10			10	--	--	--	--	5.10	--	--	--
	SB-59-15			15	--	--	--	--	2.67	--	--	--
	SB-59-20			20	--	--	--	--	2.00	--	--	--
01MW17/SB-61	SB-61-2	FW	07/19/01	2	--	--	--	--	5.14	--	--	--
	SB-61-5			5	--	--	--	--	7.43	--	--	--
	SB-61-10			10	--	--	--	--	2.86	--	--	--
	SB-61-15			15	--	--	--	--	4.17	--	--	--
01MW18/SB-65	SB-65-5	FW	03/11/02	5	--	--	--	--	4.17	--	--	--
	SB-65-10			10	--	--	--	--	4.96	--	--	--
	SB-65-15			15	--	--	--	--	4.35	--	--	--
	SB-65-20			20	--	--	--	--	2.08	--	--	--
	SB-65-25			25	--	--	--	--	5.94	--	--	--
	SB-65-30			30	--	--	--	--	4.02	--	--	--
MTCA Cleanup Level for Soil					20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾



Table 5
Soil Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)							
					Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver
Bulk Terminal Property												
01MW19/SB-66	SB-66-5	FW	03/11/02	5	--	--	--	--	55.5	--	--	--
	SB-66-10			10	--	--	--	--	18.9	--	--	--
	SB-66-15			15	--	--	--	--	2.53	--	--	--
	SB-66-20			20	--	--	--	--	2.44	--	--	--
	SB-66-25			25	--	--	--	--	6.14	--	--	--
01MW20/SB-67	SB-67-5	FW	03/11/02	5	--	--	--	--	21.1	--	--	--
	SB-67-10			10	--	--	--	--	5.18	--	--	--
	SB-67-15			15	--	--	--	--	2.47	--	--	--
	SB-67-20			20	--	--	--	--	2.34	--	--	--
	SB-67-25			25	--	--	--	--	5.58	--	--	--
01MW21	01MW-21-5	FW	12/02/02	5	--	--	--	--	7.17	--	--	--
	01MW-21-10			10	--	--	--	--	2.39	--	--	--
	01MW-21-15			15	--	--	--	--	2.08	--	--	--
	01MW-21-20			20	--	--	--	--	2.29	--	--	--
	01MW-21-23			23	--	--	--	--	5.08	--	--	--
01MW22	01MW-22-5	FW	12/02/02	5	--	--	--	--	3.98	--	--	--
	01MW-22-10			10	--	--	--	--	2.29	--	--	--
	01MW-22-15			15	--	--	--	--	2.1	--	--	--
	01MW-22-20			20	--	--	--	--	1.88	--	--	--
	01MW-22-25			25	--	--	--	--	4.19	--	--	--
01MW23	01MW-23-5	FW	12/02/02	5	--	--	--	--	5.29	--	--	--
	01MW-23-10			10	--	--	--	--	2.52	--	--	--
	01MW-23-15			15	--	--	--	--	2.11	--	--	--
	01MW-23-20			20	--	--	--	--	5.5	--	--	--
01MW24	01MW-24-5	FW	12/03/02	5	--	--	--	--	13.9	--	--	--
	01MW-24-10			10	--	--	--	--	3.44	--	--	--
	01MW-24-15			15	--	--	--	--	2.82	--	--	--
	01MW-24-20			20	--	--	--	--	5.36	--	--	--
01MW25	01MW-25-5	FW	12/03/02	5	--	--	--	--	2.98	--	--	--
	01MW-25-10			10	--	--	--	--	5.89	--	--	--
	01MW-25-15			15	--	--	--	--	1.92	--	--	--
	01MW-25-18			18	--	--	--	--	5.60	--	--	--
MTCA Cleanup Level for Soil					20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾



Table 5
Soil Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)							
					Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver
Bulk Terminal Property												
01MW26	01MW-26-5	FW	12/04/02	5	--	--	--	--	10.30	--	--	--
	01MW-26-10			10	--	--	--	--	7.66	--	--	--
	01MW-26-15			15	--	--	--	--	278	--	--	--
	01MW-26-20			20	--	--	--	--	5.54	--	--	--
01MW27	01MW-27-5	FW	12/04/02	5	--	--	--	--	30.60	--	--	--
	01MW-27-10			10	--	--	--	--	11.40	--	--	--
	01MW-27-15			15	--	--	--	--	3.03	--	--	--
	01MW-27-20			20	--	--	--	--	4.71	--	--	--
01MW28	01MW-28-5	FW	12/05/02	5	--	--	--	--	9.33	--	--	--
	01MW-28-10			10	--	--	--	--	3.13	--	--	--
	01MW-28-15			15	--	--	--	--	2.71	--	--	--
	01MW-28-20			20	--	--	--	--	1.96	--	--	--
	01MW-28-25			25	--	--	--	--	4.30	--	--	--
01MW29	01MW-29-5	FW	12/03/02	5	--	--	--	--	6.62	--	--	--
	01MW-29-10			10	--	--	--	--	2.30	--	--	--
	01MW-29-15			15	--	--	--	--	2.43	--	--	--
	01MW-29-20			20	--	--	--	--	5.65	--	--	--
LR01	LR01-5	FW	12/03/02	5	--	--	--	--	3.52	--	--	--
	LR01-10			10	--	--	--	--	2.30	--	--	--
	LR01-15			15	--	--	--	--	6.93	--	--	--
	LR01-20			20	--	--	--	--	4.81	--	--	--
LR02	LR02-5	FW	12/04/02	5	--	--	--	--	7.04	--	--	--
	LR02-10			10	--	--	--	--	2.34	--	--	--
	LR02-15			15	--	--	--	--	2.27	--	--	--
	LR02-20			20	--	--	--	--	1.79	--	--	--
LR03	LR03-5	FW	12/04/02	5	--	--	--	--	6.14	--	--	--
	LR03-10			10	--	--	--	--	3.07	--	--	--
	LR03-15			15	--	--	--	--	2.29	--	--	--
LR07	LR07-5	FW	12/02	5	--	--	--	--	5.03	--	--	--
	LR07-10			10	--	--	--	--	2.32	--	--	--
	LR07-15			15	--	--	--	--	9.03	--	--	--
MTCA Cleanup Level for Soil					20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾



Table 5
Soil Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)							
					Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver
Bulk Terminal Property												
GP01	GP01-8	SoundEarth	08/31/06	8	3.89	111	<0.635	46.0	3.58	<0.520	<0.635	<0.635
GP02	GP02-8	SoundEarth	08/31/06	8	5.76	114	<0.593	58.1	5.63	<0.493	<0.593	<0.593
GP03	GP03-6	SoundEarth	08/31/06	6	2.74	98.2	<0.638	40.2	3.12	<0.493	<0.638	<0.638
GP04	GP04-8	SoundEarth	08/31/06	8	14	140	<0.636	51.3	4.70	<0.478	<0.636	<0.636
GP05	GP05-8	SoundEarth	08/31/06	8	1.67	73.8	<0.564	33.9	2.38	<0.471	<0.564	<0.564
GP06	GP06-2	SoundEarth	08/31/06	2	1.94	91.5	<0.565	47.9	4.31	<0.450	<0.565	<0.565
GP07	GP07-5.5	SoundEarth	08/31/06	5.5	2.26	90.1	<0.572	37.8	2.78	<0.487	<0.572	<0.572
GP08	GP08-2.5	SoundEarth	08/31/06	2.5	4.17	121	<0.584	54.7	5.81	<0.464	<0.584	<0.584
GP09	GP09-8	SoundEarth	09/01/06	8	2.53	120	<0.609	55.2	4.90	<0.415	<0.609	<0.609
GP10	GP10-4	SoundEarth	09/01/06	4	4.2	92.5	<0.567	51.8	3.75	<0.470	<0.567	<0.567
GP11	GP11-8	SoundEarth	09/01/06	8	2.23	81.7	<0.524	37.6	2.88	<0.423	<0.524	<0.524
GP12	GP12-12	SoundEarth	09/01/06	12	6.27	144	<0.522	75.6	7.06	<0.489	<0.522	<0.522
GP13	GP13-8	SoundEarth	09/01/06	8	2.18	88	<0.585	35.0	2.84	<0.452	<0.585	<0.585
GP14	GP14-7	SoundEarth	09/01/06	7	5.27	63.6	<0.491	27.8	2.30	<0.491	<0.491	<0.491
West Commodore Way												
01MW16/SB-60	SB-60-2	FW	07/19/01	2	--	--	--	--	4.53	--	--	--
	SB-60-5			5	--	--	--	--	8.64	--	--	--
	SB-60-10			10	--	--	--	--	8.20	--	--	--
	SB-60-15			15	--	--	--	--	2.29	--	--	--
	SB-60-20			20	--	--	--	--	2.09	--	--	--
LR04	LR04-5	FW	12/04/02	5	--	--	--	--	2.45	--	--	--
	LR04-10			10	--	--	--	--	2.44	--	--	--
	LR04-15			15	--	--	--	--	3.57	--	--	--
LR05	LR05-5	FW	12/04/02	5	--	--	--	--	4.33	--	--	--
	LR05-10			10	--	--	--	--	2.58	--	--	--
	LR05-15			15	--	--	--	--	3.69	--	--	--
MTCA Cleanup Level for Soil					20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾



Table 5
Soil Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)							
					Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver
West Commodore Way												
LR06	LR06-5	FW	12/2002	5	--	--	--	--	4.05	--	--	--
	LR06-10			10	--	--	--	--	5.32	--	--	--
	LR06-15			15	--	--	--	--	4.19	--	--	--
MTCA Cleanup Level for Soil					20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾

NOTES:

Data prior to April 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by EPA Method 6020.

⁽²⁾Analyzed by EPA Method 7471A.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340-900, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽⁴⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

bgs = below ground surface

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

MTCA = Washington State Model Toxics Control Act

RCRA = Resource Conservation and Recovery Act

SoundEarth = SoundEarth Strategies, Inc.

WAC = Washington Administrative Code



Table 6
Reconnaissance Groundwater Results for PCP, TPH, BTEX, MTBE, EDB, and EDC
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Boring ID	Sample ID	Sampled By	Date Sampled	Analytical Results (micrograms per liter)										
				PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾
Bulk Terminal Property														
01SB01	01SB-01	IT	06/06/99	--	7,560	<500	9,000	2,280	579	106	483	--	--	--
01SB02	01SB-02	IT	06/06/99	--	965	<500	1,120	25.1	13.5	19.8	43.6	--	--	--
01SB03	01SB-03	IT	06/06/99	--	<250	<500	881	147	5.58	24.6	68	--	--	--
01SB04	01SB-04	IT	06/06/99	--	7,120	<500	11,000	547	847	358	1,630	--	--	--
01SB05	01SB-05	IT	06/06/99	--	8,710	1,010	42,900	9,580	6,600	657	3,050	--	--	--
01SB07	01SB-07	IT	06/06/99	--	4,180	577	5,360	1,360	270	139	586	--	--	--
01SB08	01SB-08	IT	06/06/99	--	9,550	<2,500	3,410	1,160	93.3	60.5	218	--	--	--
01SB09	01SB-09	IT	06/06/99	--	12,800	1,060	54,800	11,000	7,510	840	4,570	--	--	--
GP01	GP01	SoundEarth	08/31/06	<0.485	289	<472	<100	0.90	<0.500	<0.500	<1.00	<1.00	<0.200	<0.500
GP03	GP03	SoundEarth	08/31/06	<0.485	658	<481	<100	<0.500	<0.500	<0.500	<1.00	<1.00	<0.200	<0.500
GP05	GP05	SoundEarth	08/31/06	<0.485	573	<472	<100	<0.500	<0.500	<0.500	<1.00	<1.00	<0.200	0.6
GP07	GP07	SoundEarth	08/31/06	3.19	1,550	<505	<100	0.9	<0.500	<0.500	<1.00	<1.00	<0.200	<0.500
GP09	GP09	SoundEarth	09/01/06	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
GP11	GP11	SoundEarth	09/01/06	<0.485	1,890	<472	210	2.26	0.57	6.63	16.4	--	--	--
GP14	GP14	SoundEarth	09/01/06	<0.485	9,820	1,380	4,180	650	10.50	15.1	9.98	--	--	--
GP15	GP15	SoundEarth	09/05/06	6.84	--	--	--	--	--	--	--	--	--	--
GP16	GP16	SoundEarth	09/05/06	3.42	--	--	--	--	--	--	--	--	--	--
GP17	GP17	SoundEarth	09/05/06	10.1	--	--	--	--	--	--	--	--	--	--
GP18	GP18	SoundEarth	09/05/06	3.20	--	--	--	--	--	--	--	--	--	--
GP19	GP19	SoundEarth	09/05/06	23.2	--	--	--	--	--	--	--	--	--	--
GP20	GP20	SoundEarth	09/05/06	34.9	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Groundwater				0.22⁽⁵⁾	500⁽⁶⁾	500⁽⁶⁾	800⁽⁶⁾	5⁽⁶⁾	1,000⁽⁶⁾	700⁽⁶⁾	1,000⁽⁶⁾	20⁽⁶⁾	0.01⁽⁶⁾	5⁽⁶⁾

NOTES:

Red denotes concentration exceeds MTCA cleanup level for groundwater.

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater; the detection limit has been raised due to high concentrations of associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington, or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by EPA Method 8270C-SIM.

⁽²⁾Analyzed by Method NWTPH-Dx.

⁽³⁾Analyzed by Method NWTPH-Gx.

⁽⁴⁾Analyzed by EPA Method 8021B or 8260B.

⁽⁵⁾MTCA Cleanup Regulation, CLARC, Ground Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

⁽⁶⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater.

-- = not analyzed/not applicable

< = not detected at a concentration exceeding the laboratory reporting limit

BTEX = benzene, toluene, ethylbenzene, and total xylenes

CLARC = Cleanup Levels and Risk Calculations

DRPH = diesel-range petroleum hydrocarbons

EDB = 1,2-dibromethane

EDC = 1,2-dichloroethane

EPA = U.S. Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

IT = IT Corporation

MTBE = methyl tertiary-butyl ether

MTCA = Washington State Model Toxics Control Act

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCP = pentachlorophenol

SoundEarth = SoundEarth Strategies, Inc.

TPH = total petroleum hydrocarbons

WAC = Washington Administrative Code



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW01	Northwest of Former Tank Yard	46.48	10	25	06/20/06	--	14.13	--	32.35
					12/11/06	--	13.60	--	32.88
					09/05/08	--	14.85	--	31.63
					01/26/09	--	13.45	--	32.94
					04/06/09	--	12.90	--	33.49
					07/06/09	--	13.72	--	32.67
		10/06/09			--	14.85	--	31.54	
		01/25/10			--	12.86	--	33.53	
		04/05/10			--	12.70	--	33.69	
		07/06/10			--	13.43	--	32.96	
		09/22/10			--	13.76	--	32.63	
		01/06/11			--	11.50	--	34.89	
		04/11/11			--	11.82	--	34.57	
		08/22/11			--	13.72	--	32.67	
		12/05/11			--	13.85	--	32.54	
		04/02/12			--	12.05	--	34.34	
10/08/12	--	15.30	--	31.09					
01/28/13	--	7.20	--	39.19					
02/01/13	--	6.13	--	40.26					
01MW04	Former HQ USTs	45.08	10	25	06/20/06	--	14.91	--	30.17
					12/11/06	--	13.15	--	31.93
					09/05/08	--	14.62	--	30.46
					01/26/09	--	14.06	--	30.95
					04/06/09	--	10.34	--	34.67
					07/06/09	--	14.74	--	30.27
		10/06/09			--	15.58	--	29.43	
		01/25/10			--	11.60	--	33.41	
		04/05/10			--	8.52	--	36.49	
		07/06/10			--	14.32	--	30.69	
		01/06/11			--	11.81	--	33.20	
		04/11/11			--	12.39	--	32.62	
		08/22/11			--	14.96	--	30.05	
		12/05/11			--	13.95	--	31.06	
		04/02/12			--	8.03	--	36.98	
		10/08/12			--	15.41	--	29.60	
01/28/13	--	9.25	--	35.76					
02/01/13	--	6.79	--	38.22					
01MW05	Former HQ USTs	45.40	10	25	10/01/03	--	--	1.90	27.79
					04/01/04	15.47	19.57	4.10	29.11
					07/15/04	15.47	19.57	4.10	29.11
					11/17/04	16.25	18.65	2.40	28.67
					10/24/05	16.38	19.45	3.07	28.41
					06/20/06	15.67	18.43	2.76	29.18
					12/11/06	15.94	15.94	0.00	29.46
					09/05/08	15.56	19.09	3.53	29.13
					01/26/09	15.15	16.71	1.56	29.82
					04/06/09	13.85	15.35	1.50	31.13
		07/06/09			15.60	18.16	2.56	29.17	
		01/25/10			13.73	15.90	2.17	31.12	
		04/05/10			13.21	14.67	1.46	31.78	
		07/06/10			15.12	17.89	2.77	29.61	
		01/06/11			13.14	16.81	3.67	31.41	
		04/11/11			14.63	17.70	3.07	30.04	
		08/22/11			15.43	20.00	4.57	28.94	
		12/05/11			14.69	18.92	4.23	29.74	
		04/02/12			12.77	15.04	2.27	32.06	
		10/08/12			15.69	20.76	5.07	28.58	
10/08/12	10.03	15.06	5.03	34.24					
01MW05	Former HQ USTs	45.28	10	25	04/01/04	15.47	19.57	4.10	29.11
					07/15/04	15.47	19.57	4.10	29.11
					11/17/04	16.25	18.65	2.40	28.67
					10/24/05	16.38	19.45	3.07	28.41
					06/20/06	15.67	18.43	2.76	29.18
					12/11/06	15.94	15.94	0.00	29.46
					09/05/08	15.56	19.09	3.53	29.13
					01/26/09	15.15	16.71	1.56	29.82
					04/06/09	13.85	15.35	1.50	31.13
					07/06/09	15.60	18.16	2.56	29.17



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW06	New Barrel Shed	47.74	10	25	06/20/06	--	15.92	--	31.82
					12/11/06	--	15.24	--	32.50
					09/05/08	--	15.85	--	31.89
					01/26/09	--	15.50	--	32.23
					04/06/09	--	14.64	--	33.09
		07/06/09			--	15.59	--	32.14	
		01/25/10			--	14.47	--	33.26	
		04/05/10			--	14.05	--	33.68	
		07/06/10			--	15.23	--	32.50	
		01/06/11			--	13.41	--	34.32	
		04/11/11			--	13.85	--	33.88	
		08/22/11			--	15.57	--	32.16	
		12/05/11			--	15.51	--	32.22	
		04/02/12			--	13.86	--	33.87	
		09/04/12			--	15.83	--	31.90	
10/08/12	--	16.18	--	31.55					
02/01/13	--	9.76	--	37.97					
01MW08	Former HQ USTs	45.21	10	25	06/20/06	--	16.43	--	28.78
					12/11/06	--	15.70	--	29.51
					09/05/08	--	16.33	--	28.88
					01/26/09	--	15.82	--	29.33
					04/06/09	--	14.76	--	30.39
		07/06/09			--	16.31	--	28.84	
		01/25/10			--	14.76	--	30.39	
		04/05/10			--	14.35	--	30.80	
		07/06/10			--	15.94	--	29.21	
		01/06/11			--	14.31	--	30.84	
		04/11/11			--	14.84	--	30.31	
		08/22/11			--	16.40	--	28.75	
		12/05/11			--	15.84	--	29.31	
		04/02/12			--	14.10	--	31.05	
		09/04/12			--	16.36	--	28.79	
10/08/12	--	16.74	--	28.41					
02/01/13	--	11.93	--	33.22					
01MW12	Former Tank Yard	45.84	5	20	06/20/06	--	6.82	--	39.02
					12/11/06	--	5.49	--	40.35
					09/05/08	--	6.49	--	39.35
					01/26/09	--	6.22	--	39.56
					04/06/09	--	3.88	--	41.90
		07/06/09			--	7.11	--	38.67	
		10/06/09			--	7.62	--	38.16	
		01/25/10			--	4.42	--	41.36	
		04/05/10			--	3.99	--	41.79	
		07/06/10			--	9.05	--	36.73	
		09/22/10			--	10.02	--	35.76	
		01/06/11			--	6.33	--	39.45	
		04/11/11			--	5.23	--	40.55	
		08/22/11			--	9.37	--	36.41	
		12/05/11			--	7.61	--	38.17	
04/02/12	Not measured; wellhead submerged								
10/08/12	Not measured; inaccessible								
01MW13	Former Tank Yard	46.36	15	20	06/20/06	--	6.62	--	39.74
					12/11/06	--	6.65	--	39.71
					09/05/08	--	--	--	--
		01/26/09			--	6.64	--	39.71	
		04/06/09			--	5.08	--	41.27	
		07/06/09			--	6.77	--	39.58	
		10/06/09			--	7.78	--	38.57	
		01/25/10			--	4.79	--	41.56	
		04/05/10			--	4.09	--	42.26	



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW13 (continued)	Former Tank Yard	46.35	15	20	07/06/10	--	7.68	--	38.67
					09/22/10	--	8.75	--	37.60
					01/06/11	--	6.13	--	40.22
					04/11/11	--	4.99	--	41.36
					08/22/11	--	8.35	--	38.00
					12/05/11	--	7.59	--	38.76
					04/02/12	--	4.30	--	42.05
					10/08/12	--	9.09	--	37.26
02/01/13	--	4.25	--	42.10					
01MW14	Former PCP Mixing AST	46.15	5	15	07/01/01	--	--	6.7	--
D E C O M M I S S I O N E D 2 0 0 2									
01MW17	Upgradient (27th Avenue West and West Fort Street)	59.42	15	30	07/02/01	--	19.21	--	40.21
					12/11/06	--	19.31	--	40.11
					09/05/08	--	19.81	--	39.61
		01/26/09			--	19.51	--	39.82	
		04/06/09			--	18.47	--	40.86	
		07/06/09			--	19.24	--	40.09	
		10/06/09			--	20.32	--	39.01	
		01/25/10			--	17.86	--	41.47	
		04/05/10			--	16.97	--	42.36	
		07/06/10			--	18.71	--	40.62	
		01/06/11			--	17.90	--	41.43	
		04/11/11			--	16.92	--	42.41	
		08/22/11			--	19.49	--	39.84	
		12/05/11			--	19.64	--	39.69	
		04/02/12			--	17.68	--	41.65	
10/08/12	--	19.83	--	39.50					
02/01/13	--	17.09	--	42.24					
01MW18	Former HQ USTs	45.18	5	20	07/02/02	--	--	0.01 ⁽³⁾	--
					06/20/06	--	16.33	--	28.85
					12/11/06	--	15.42	--	29.76
		09/05/08			--	16.15	--	29.03	
		01/26/09			--	15.65	--	29.44	
		04/06/09			--	14.25	--	30.84	
		07/06/09			--	16.17	--	28.92	
		01/25/10			--	14.33	--	30.76	
		04/05/10			--	13.70	--	31.39	
		07/06/10			--	15.78	--	29.31	
		01/06/11			--	13.99	--	31.10	
		04/11/11			--	14.57	--	30.52	
		08/22/11			--	16.34	--	28.75	
		12/05/11			--	15.58	--	29.51	
		04/02/12			--	13.42	--	31.67	
10/08/12	--	16.67	--	28.42					
02/01/13	--	11.37	--	33.72					
01MW19	Former HQ USTs	45.35	5	20	06/20/06	--	16.40	--	28.95
					12/11/06	--	15.58	--	29.77
					09/05/08	--	16.23	--	29.12
		01/26/09			--	15.69	--	29.58	
		04/06/09			--	14.49	--	30.78	
		07/06/09			--	16.22	--	29.05	
		01/25/10			--	14.49	--	30.78	
		04/05/10			--	14.00	--	31.27	
		07/06/10			--	15.85	--	29.42	
		01/06/11			--	14.12	--	31.15	
		04/11/11			--	14.63	--	30.64	
		08/22/11			--	16.34	--	28.93	
		12/05/11			--	15.66	--	29.61	
		04/02/12			--	13.71	--	31.56	
		10/08/12			--	16.69	--	28.58	
02/01/13	--	11.55	--	33.72					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW20	Former HQ USTs	46.27	5	20	06/20/06	--	16.24	--	30.03
					12/11/06	--	15.31	--	30.96
					09/05/08	--	16.09	--	30.18
					01/26/09	--	15.59	--	30.59
					04/06/09	--	14.28	--	31.90
		07/06/09			--	16.05	--	30.13	
		01/25/10			--	14.14	--	32.04	
		04/05/10			--	13.77	--	32.41	
		07/06/10			--	15.66	--	30.52	
		01/06/11			--	13.79	--	32.39	
		04/11/11			--	14.34	--	31.84	
		08/22/11			--	16.21	--	29.97	
		12/05/11			--	15.55	--	30.63	
		04/02/12			--	13.46	--	32.72	
		10/08/12			--	16.60	--	29.58	
02/01/13	--	10.53	--	35.65					
01MW21	Former PCP Mixing AST	46.21	5	22	06/20/06	--	6.60	--	39.61
					12/11/06	--	6.12	--	40.09
					09/05/08	--	6.69	--	39.52
					01/26/09	--	6.24	--	39.90
					04/06/09	--	5.33	--	40.81
		07/06/09			--	6.78	--	39.36	
		10/07/09			--	7.68	--	38.46	
		01/25/10			--	4.51	--	41.63	
		04/05/10			3.86	3.90	0.04	42.27	
		07/06/10			--	8.96	--	37.18	
		09/22/10			--	10.39	--	35.75	
		01/06/11			--	7.43	--	38.71	
		04/11/11			--	4.94	--	41.20	
		08/22/11			--	9.19	--	36.95	
		D E C O M M I S S I O N E D 2 0 1 1							
01MW22	Former PCP Mixing AST	46.11	5	24	10/01/03	8.35	8.43	0.08	37.74
					01/01/04	6.66	6.86	0.20	39.41
					04/01/04	5.88	6.38	0.50	40.13
					07/15/04	7.15	7.17	0.02	38.96
					11/17/04	6.95	6.97	0.02	39.16
					10/24/05	8.05	8.30	0.25	38.01
					06/20/06	7.79	7.94	0.15	38.29
					12/11/06	5.99	6.04	0.05	40.11
					09/05/08	--	--	--	--
		01/26/09			6.13	6.44	0.31	39.86	
		04/06/09			4.05	4.40	0.35	41.93	
		07/06/09			7.25	7.54	0.29	38.74	
		10/06/09			7.75	7.82	0.07	38.29	
		01/25/10			3.99	4.12	0.13	42.03	
		04/05/10			3.71	3.75	0.04	42.33	
		07/06/10			9.70	9.84	0.14	36.32	
		01/06/11			--	6.90	--	39.15	
		04/11/11			--	5.49	--	40.56	
08/22/11	--	9.76	--	36.29					
D E C O M M I S S I O N E D 2 0 1 1									



Table 7
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TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW23	Former PCP Mixing AST	45.81	5	19	04/01/04	5.40	5.45	0.05	40.40
					07/15/04	7.64	7.74	0.10	38.15
					11/17/04	7.37	7.48	0.11	38.42
					10/24/05	--	8.45	--	37.24
					06/20/06	7.81	7.82	0.01	38.00
					12/11/06	Not measured; skimmer in well			
					09/05/08	6.53	6.91	0.38	39.20
					01/26/09	6.26	6.76	0.50	39.45
					04/06/09	Not measured; skimmer in well			
					07/06/09	7.29	8.15	0.86	38.35
					10/06/09	7.57	8.09	0.52	38.14
					01/25/10	4.20	4.41	0.21	41.57
					04/05/10	4.03	4.56	0.53	41.67
					07/06/10	9.43	10.20	0.77	36.23
					01/06/11	--	6.42	--	39.39
					04/11/11	5.36	5.43	0.07	40.44
					08/22/11	9.92	9.93	0.01	35.89
12/05/11	--	7.50	--	38.31					
04/02/12	Not measured; wellhead submerged								
D E C O M M I S S I O N E D 2 0 1 2									
01MW24	Former Valve Pit	--	5	19	10/01/03	--	--	0.11	--
					01/01/04	--	--	0.39	--
					04/01/04	--	--	0.15	--
					07/15/04	7.85	8.15	0.30	--
					11/17/04	--	--	--	--
					10/24/05	9.10	9.37	0.27	--
					06/20/06	Not measured; wellhead submerged			
					12/11/06	13.13	--	--	--
					09/05/08	Not measured; wellhead submerged			
					01/26/09	Not measured; wellhead submerged			
		04/06/09	Not measured; wellhead submerged						
		07/06/09	7.87	8.40	0.53	36.09			
		10/06/09	6.86	7.01	0.15	37.18			
		01/25/10	Not measured; wellhead submerged						
		04/05/10	1.85	4.82	2.97	41.63			
		07/06/10	8.89	9.40	0.51	35.08			
		09/22/10	8.91	9.56	0.65	35.03			
04/11/11	Not measured; wellhead submerged								
08/22/11	9.07	9.13	0.06	34.99					
12/05/11	--	6.09	--	37.98					
04/02/12	Not measured; wellhead submerged								
10/08/12	Not measured; inaccessible								
02/01/13	--	3.90	--	40.17					
01MW25	Former Valve Pit	--	5	17	07/01/04	--	--	0.01 ⁽³⁾	--
					10/24/05	8.54	10.21	1.67	--
					06/20/06	Not measured; wellhead submerged			
					12/11/06	5.83	--	--	--
					09/05/08	Not measured; wellhead submerged			
					01/26/09	Not measured; wellhead submerged			
					04/06/09	Not measured; wellhead submerged			
					07/06/09	6.30	9.14	2.84	37.11
					10/06/09	5.91	8.21	2.30	37.61
					01/25/10	Not measured; rising LNAPL			
		04/05/10	3.43	3.59	0.16	40.52			
		07/06/10	7.51	11.44	3.93	35.68			
		09/22/10	8.54	9.85	1.31	35.18			
		04/11/11	Not measured; wellhead submerged						
		08/22/11	8.42	8.43	0.01	35.56			
		12/05/11	--	8.47	--	35.51			
		04/02/12	Not measured; wellhead submerged						
07/09/12	--	8.90	--	35.08					
D E C O M M I S S I O N E D 2 0 1 2									



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW26	Northwest of Former Tank Yard	46.24	5	19	06/20/06	--	13.83	--	32.41
					12/11/06	--	13.38	--	32.86
		46.17			09/05/08	--	13.73	--	32.51
					01/26/09	--	13.16	--	33.01
					04/06/09	--	12.62	--	33.55
					07/06/09	--	13.40	--	32.77
					10/09/09	--	14.56	--	31.61
					01/25/10	--	12.59	--	33.58
					04/05/10	--	12.39	--	33.78
					07/06/10	--	13.14	--	33.03
					09/22/10	--	13.68	--	32.49
					01/06/11	--	11.26	--	34.91
					04/11/11	--	11.44	--	34.73
					08/22/11	--	13.40	--	32.77
					12/05/11	--	13.57	--	32.60
					04/02/12	--	11.76	--	34.41
D E C O M M I S S I O N E D 2 0 1 2									
01MW27	Northwest of Former Tank Yard	46.33	5	20	06/20/06	--	14.32	--	32.01
					12/11/06	--	13.69	--	32.64
		46.26			09/05/08	--	14.19	--	32.14
					01/26/09	--	13.52	--	32.74
					04/06/09	--	12.78	--	33.48
					07/06/09	--	13.91	--	32.35
					10/06/09	--	15.10	--	31.16
					01/25/10	--	12.83	--	33.43
					04/05/10	--	12.67	--	33.59
					07/06/10	--	13.63	--	32.63
					09/22/10	--	14.06	--	32.20
					01/06/11	11.45	11.47	0.02	34.81
					04/11/11	--	11.76	--	34.50
					08/22/11	--	13.97	--	32.29
					12/05/11	--	13.96	--	32.30
					04/02/12	--	11.95	--	34.31
10/08/12	--	15.56	--	30.70					
01/28/13	6.95	6.96	0.01	39.31					
02/01/13	--	5.08	--	41.18					
01MW28	Northwest of Former Tank Yard	45.54	5	24	10/01/03	14.82	15.11	0.29	30.66
					01/01/04	13.15	14.08	0.93	32.20
					04/01/04	13.70	14.78	1.08	31.62
					07/15/04	14.13	15.51	1.38	31.13
					11/17/04	14.03	15.58	1.55	31.20
					10/24/05	14.54	16.50	1.96	30.61
					06/20/06	13.76	--	--	--
					12/11/06	13.02	13.55	0.53	32.41
					09/05/08	13.60	14.31	0.71	31.80
					01/26/09	12.96	13.42	0.46	32.43
		45.48			04/06/09	11.96	12.30	0.34	33.45
					07/06/09	13.47	13.94	0.47	31.92
					10/06/09	14.68	15.14	0.46	30.71
					01/25/10	12.03	12.51	0.48	33.35
					04/05/10	11.89	12.30	0.41	33.51
					07/06/10	13.25	13.75	0.50	32.13
					09/22/10	13.40	14.21	0.81	31.92
					01/06/11	11.01	11.17	0.16	34.44
					04/11/11	11.31	12.19	0.88	33.99
					08/22/11	13.67	14.14	0.47	31.72
12/05/11	--	13.49	--	31.99					
04/02/12	11.34	11.42	0.08	34.12					
10/08/12	14.28	14.59	0.31	31.14					
02/01/13	6.40	6.42	0.02	39.08					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW29	Northwest of Former Tank Yard	45.57	5	19	10/01/03	16.00	16.01	0.01	29.57
					01/01/04	--	--	--	--
					04/01/04	14.27	14.30	0.03	31.29
					07/15/04	15.26	15.32	0.06	30.30
					11/17/04	--	--	--	--
					10/25/05	15.46	16.72	1.26	29.86
					06/20/06	13.90	--	--	--
					12/11/06	Not measured; skimmer in well			
					09/05/08	14.61	16.23	1.62	30.64
					01/26/09	13.04	13.58	0.54	32.34
		04/06/09			11.58	11.91	0.33	33.84	
		07/06/09			13.50	14.10	0.60	31.87	
		10/06/09			14.70	15.50	0.80	30.63	
		01/25/10			12.00	12.40	0.40	33.41	
		04/05/10			11.81	12.19	0.38	33.60	
		07/06/10			13.40	14.08	0.68	31.95	
		09/22/10			13.55	14.25	0.70	31.80	
		01/06/11			10.94	11.00	0.06	34.54	
		04/11/11			11.36	11.68	0.32	34.07	
		08/22/11			13.79	14.10	0.31	31.64	
		12/05/11			13.51	13.52	0.01	31.98	
04/02/12	10.85	11.14	0.29	34.58					
07/09/12	12.33	12.44	0.11	33.14					
10/08/12	14.38	14.65	0.27	31.06					
02/01/13	--	6.53	--	38.96					
01MW37	Former Tank Yard	48.65	7.5	22.5	09/27/06	--	11.30	--	37.35
					12/11/06	--	10.39	--	38.26
					09/05/08	--	10.70	--	37.95
		01/26/09			--	10.34	--	38.24	
		04/06/09			--	9.45	--	39.13	
		07/06/09			--	10.14	--	38.44	
		10/06/09			--	11.18	--	37.40	
		01/25/10			--	9.22	--	39.36	
		04/05/10			--	7.50	--	41.08	
		07/06/10			--	9.92	--	38.66	
		09/22/10			--	10.87	--	37.71	
		01/06/11			--	9.37	--	39.21	
		04/11/11			--	8.58	--	40.00	
		08/22/11			--	10.78	--	37.80	
		12/05/11			--	10.81	--	37.77	
		04/02/12			--	9.05	--	39.53	
		10/08/12			--	11.30	--	37.28	
02/01/13	--	8.65	--	39.93					
01MW38	Former Tank Yard	47.60	7.5	22.5	09/27/06	--	10.40	--	37.20
					12/11/06	--	8.51	--	39.09
					09/05/08	--	9.43	--	38.17
		01/26/09			--	9.01	--	39.56	
		04/06/09			--	7.72	--	40.85	
		07/06/09			--	9.13	--	39.44	
		01/25/10			--	7.37	--	41.20	
		04/05/10			--	6.65	--	41.92	
		07/06/10			--	9.50	--	39.07	
		09/22/10			--	10.41	--	38.16	
		01/06/11			--	8.42	--	40.15	
		04/11/11			--	7.21	--	41.36	
		08/22/11			--	10.28	--	38.29	
		12/05/11			--	9.82	--	38.75	
		04/02/12			--	7.06	--	41.51	
		10/08/12			--	10.90	--	37.67	
		02/01/13			--	6.62	--	41.95	



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW39	Former Tank Yard	48.80	7	22	09/27/06	--	14.81	--	33.99
					12/11/06	--	14.37	--	34.43
					09/05/08	--	14.45	--	34.35
					01/26/09	--	14.44	--	34.35
					04/06/09	--	14.04	--	34.75
					07/06/09	--	14.05	--	34.74
		01/25/10			--	13.84	--	34.95	
		04/05/10			--	13.30	--	35.49	
		07/06/10			--	13.68	--	35.11	
		01/06/11			--	12.61	--	36.18	
		04/11/11			--	12.57	--	36.22	
		08/22/11			--	13.64	--	35.15	
		12/05/11			--	14.39	--	34.40	
		04/02/12			--	13.49	--	35.30	
		10/08/12			--	14.17	--	34.62	
02/01/13	--	11.00	--	37.79					
01MW40	Former Tank Yard	49.13	7	22	09/27/06	--	16.10	--	33.03
					12/11/06	--	15.64	--	33.49
					09/05/08	--	15.64	--	33.49
					01/26/09	--	15.44	--	33.57
					04/06/09	--	15.04	--	33.97
					07/06/09	--	15.21	--	33.80
		10/06/09			--	16.14	--	32.87	
		01/25/10			--	15.00	--	34.01	
		04/05/10			--	14.46	--	34.55	
		07/06/10			--	14.96	--	34.05	
		09/22/10			--	15.52	--	33.49	
		01/06/11			--	13.25	--	35.76	
		04/11/11			--	13.50	--	35.51	
		08/22/11			--	14.88	--	34.13	
		12/05/11			--	15.52	--	33.49	
04/02/12	--	14.35	--	34.66					
10/08/12	--	15.94	--	33.07					
02/01/13	--	10.06	--	38.95					
01MW41	Former Tank Yard	48.06	7	22	09/27/06	--	11.47	--	36.59
					12/11/06	7.68	7.90	0.22	40.34
					09/05/08	8.38	11.01	2.63	39.15
					01/26/09	8.36	8.39	0.03	39.65
					04/06/09	5.19	9.68	4.49	41.93
					07/06/09	9.40	12.11	2.71	38.08
		10/06/09			9.81	11.18	1.37	37.94	
		01/25/10			6.41	6.93	0.52	41.51	
		04/05/10			6.01	6.38	0.37	41.94	
		07/06/10			11.53	13.00	1.47	36.20	
		09/22/10			12.98	13.67	0.69	34.90	
		01/06/11			8.26	8.56	0.30	39.70	
		04/11/11			7.51	7.54	0.03	40.50	
		08/22/11			Encountered	11.99	Encountered	--	
		12/05/11			--	9.73	--	38.29	
		04/02/12			--	5.54	--	42.48	
		07/09/12			--	9.38	--	38.64	
		10/08/12			Not measured; inaccessible				
		02/01/13			--	7.94	--	40.08	
01MW42	Former Tank Yard	47.93	7	22	09/27/06	--	12.17	--	35.76
					12/11/06	--	6.72	--	41.21
					09/05/08	--	8.64	--	39.29
					01/26/09	--	8.62	--	39.27
					04/06/09	--	7.48	--	40.41
					07/06/09	--	10.30	--	37.59
		10/06/09			--	10.08	--	37.81	
		01/25/10			--	5.92	--	41.97	
		04/05/10			--	5.64	--	42.25	



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW42 (continued)	Former Tank Yard	47.89	7	22	07/06/10	--	11.13	--	36.76
					09/22/10	--	10.13	--	37.76
					01/06/11	--	7.02	--	40.87
					04/11/11	--	6.39	--	41.50
					08/22/11	--	12.09	--	35.80
					12/05/11	--	9.09	--	38.80
					04/02/12	--	5.01	--	42.88
					10/08/12	--	13.82	--	34.07
					02/01/13	--	6.22	--	41.67
01MW43	Former Loading Racks	45.64	7	22	09/27/06	--	11.52	--	34.12
		45.65			12/11/06	6.80	7.10	0.30	38.78
					09/05/08	6.58	6.68	0.10	39.04
					01/26/09	6.51	7.35	0.84	38.97
					04/06/09	3.73	4.20	0.47	41.83
					07/06/09	9.75	10.40	0.65	35.77
					10/06/09	7.80	8.47	0.67	37.72
					01/25/10	4.75	5.24	0.49	40.80
					04/05/10	4.30	4.72	0.42	41.27
					07/06/10	9.72	10.20	0.48	35.83
					09/22/10	Unknown	5.90	--	39.75
					01/06/11	4.90 ⁽⁴⁾	5.53	0.63	40.62
					04/11/11	4.75	--	--	--
					08/22/11	11.02	11.51	0.49	34.53
					12/05/11	5.88	6.29	0.41	39.69
					04/02/12	Not measured; wellhead submerged			
10/08/12	12.49	13.68	1.19	32.92					
01MW59	Former HQ USTs	46.49	13	28.5	11/25/08	--	14.90	--	31.59
					01/26/09	--	15.13	--	31.36
					04/06/09	--	14.01	--	32.48
					07/06/09	--	15.37	--	31.12
					01/25/10	--	13.88	--	32.61
					04/05/10	--	13.43	--	33.06
					07/06/10	--	14.98	--	31.51
					01/06/11	--	13.04	--	33.45
					04/11/11	--	13.54	--	32.95
					08/22/11	--	15.44	--	31.05
					12/05/11	--	15.08	--	31.41
					04/02/12	--	13.21	--	33.28
					09/04/12	--	15.56	--	30.93
					10/08/12	--	15.98	--	30.51
					02/01/13	--	9.59	--	36.90
01MW66	Southeast of TOC Headquarters	47.33	12	22	08/06/09	--	14.86	--	32.47
					10/06/09	--	15.50	--	31.83
					01/25/10	--	13.59	--	33.74
					04/05/10	--	13.33	--	34.00
					07/06/10	--	14.12	--	33.21
					09/22/10	--	14.51	--	32.82
					01/06/11	--	12.29	--	35.04
					04/11/11	--	12.93	--	34.40
					08/22/11	--	14.41	--	32.92
					12/05/11	--	14.62	--	32.71
					04/02/12	--	12.93	--	34.40
					10/08/12	--	15.74	--	31.59
					01/28/13	--	8.28	--	39.05
					02/01/13	--	7.30	--	40.03



Table 7
 Summary of Groundwater Elevations
 TOC Holdings Co. Facility No. 01-600
 Seattle Terminal Properties
 Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW67 ⁽⁵⁾	East of TOC Headquarters	47.94	11	36	08/06/09	--	18.10	--	29.84
					10/06/09	--	18.93	--	29.01
					01/25/10	--	13.66	--	34.28
					04/05/10	--	15.40	--	29.00
					07/06/10	--	16.81	--	27.59
					09/22/10	--	17.07	--	27.33
		01/06/11			--	13.46	--	30.94	
		04/11/11			--	14.60	--	29.80	
		08/22/11			--	17.32	--	27.08	
		12/05/11			--	17.29	--	27.11	
		04/02/12			--	14.52	--	29.88	
		10/08/12			--	18.58	--	25.82	
		01/28/13			--	9.20	--	35.20	
		02/01/13			--	7.33	--	37.07	
01MW68	Northeast of TOC Headquarters	47.46	7	22	08/06/09	--	14.71	--	32.75
					10/09/09	15.18	15.56	0.38	32.20
					01/25/10	11.99	13.11	1.12	35.25
					04/05/10	11.54	12.55	1.01	35.72
					07/06/10	13.46	15.18	1.72	33.66
					09/22/10	Unknown	14.43	--	33.03
					01/06/11	13.74 ⁽⁴⁾	13.84	0.10	33.70
					04/11/11	11.64	14.04	0.30	33.66
					08/22/11	14.02	15.80	1.78	33.08
					12/05/11	13.51	14.86	1.35	33.68
					04/02/12	11.20	11.54	0.34	36.19
					07/09/12	12.76	13.37	0.61	34.58
					10/08/12	14.63	16.11	1.48	32.53
					01MW69 ⁽⁵⁾	East of TOC Headquarters	47.67	11	36
10/06/09	--	18.78	--	28.89					
01/25/10	--	15.41	--	32.26					
04/05/10	--	15.48	--	28.66					
07/06/10	--	16.46	--	27.68					
09/22/10	--	16.43	--	27.71					
01/06/11	--	13.55	--	30.59					
04/11/11	--	14.05	--	30.09					
08/22/11	--	16.67	--	27.47					
12/05/11	--	16.38	--	27.76					
04/02/12	--	13.52	--	30.62					
10/08/12	--	17.57	--	26.57					
01/28/13	--	9.05	--	35.09					
02/01/13	--	7.08	--	37.06					
01MW72	Former Tank Yard	46.33	3	23	03/15/10	4.39	4.80	0.41	41.86
					04/05/10	4.10	4.27	0.17	42.20
					07/06/10	8.25	9.25	1.00	37.88
					09/22/10	Unknown	11.50	--	34.83
					01/06/11	6.53	6.54	0.01	39.80
					04/11/11	5.25	5.42	0.17	41.05
					08/22/11	8.72	9.46	0.74	37.46
					12/05/11	7.74	8.00	0.26	38.54
					04/02/12	Encountered	4.00	Encountered	42.33
					10/08/12	9.83	9.89	0.06	36.49
					02/01/13	3.75	3.81	0.06	42.57



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TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
Bulk Terminal Property									
Shallow Water-Bearing Zone									
01MW73	Former Tank Yard	46.25	3	21	03/31/10	4.48	4.51	0.03	41.76
					04/05/10	4.01	5.30	1.29	41.98
					07/06/10	8.45	10.38	1.93	37.41
					09/22/10	Unknown	10.70	--	35.55
					01/06/11	9.05	10.55	1.50	36.90
					04/11/11	4.97	8.74	3.77	40.53
					08/22/11	8.73	11.28	2.55	37.01
					12/05/11	7.94	8.85	0.91	38.13
					04/02/12	3.43	7.60	4.17	41.99
					10/08/12	10.25	10.93	0.68	35.86
					02/01/13	3.46	7.37	3.91	42.01
01MW74	Former Tank Yard	46.17	4	21	03/15/10	--	4.61	--	41.56
					04/05/10	--	4.38	--	41.79
					07/06/10	--	9.26	--	36.91
					09/22/10	--	10.46	--	35.71
					01/06/11	--	7.01	--	39.16
					04/11/11	--	5.76	--	40.41
					08/22/11	9.45	9.65	0.20	36.68
					12/05/11	--	8.14	--	38.03
					04/02/12	--	4.09	--	42.08
					10/08/12	--	11.49	--	34.68
					01/28/13	--	5.06	--	41.11
02/01/13	--	4.58	--	41.59					
01MW75	Former Tank Yard	46.30	3	18	03/15/10	--	4.72	--	41.58
					04/05/10	--	4.80	--	41.50
					07/06/10	--	8.03	--	38.27
					09/22/10	--	9.09	--	37.21
					01/06/11	--	6.53	--	39.77
					04/11/11	--	5.35	--	40.95
					08/22/11	--	8.66	--	37.64
					12/05/11	--	8.00	--	38.30
					04/02/12	--	4.71	--	41.59
					10/08/12	--	9.59	--	36.71
					02/01/13	--	4.50	--	41.80
01MW90	Former Tank Yard	46.66	3	18	01/30/12	--	5.69	--	40.97
					04/02/12	--	4.41	--	42.25
					10/08/12	--	9.33	--	37.33
					02/01/13	--	4.02	--	42.64
01MW91	Former Tank Yard	46.52	3.5	18.5	01/30/12	--	5.72	--	40.80
					04/02/12	--	4.37	--	42.15
					10/08/12	--	9.70	--	36.82
					02/01/13	--	4.07	--	42.45
A6IW01	Injection Grid	46.64	11.5	21.5	01/28/13	--	7.18	--	39.46
					02/01/13	--	6.06	--	40.58
C3IW01	Injection Grid	47.26	11	21	07/12/10	--	15.00	--	32.26
					04/11/11	--	12.97	--	34.29
					08/22/11	--	--	--	--
					12/05/11	--	15.12	--	32.14
					04/02/12	--	11.85	--	35.41
					07/09/12	--	13.86	--	33.40
10/08/12	Not measured; inaccessible								



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)					
Bulk Terminal Property														
Shallow Water-Bearing Zone														
E9IW01	Injection Grid	46.97	6	21	07/08/10	--	11.21	--	35.76					
					09/22/10	--	11.50	--	35.47					
					04/11/11	--	6.49	--	40.48					
					08/22/11	--	--	--	--					
					12/05/11	--	8.44	--	38.53					
					04/02/12	--	4.67	--	42.30					
					07/09/12	--	8.67	--	38.30					
										10/08/12 Not measured; inaccessible				
F4IW01	Injection Grid	47.93	10	20	07/12/10	--	15.29	--	32.64					
					04/11/11	--	13.20	--	34.73					
					08/22/11	--	--	--	--					
					12/05/11	--	15.49	--	32.44					
					04/02/12	--	11.60	--	36.74					
		07/09/12			--	14.64	--	33.70						
							DECOMMISSIONED 2012							
G7IW01	Injection Grid	47.11	6	21	04/11/11	6.64	7.35	0.71	40.33					
					08/22/11	--	--	--	--					
					12/05/11	--	8.86	--	38.25					
					04/02/12	--	4.84	--	42.27					
					DECOMMISSIONED 2012									
G10IW01	Injection Grid	47.00	6	21	01/28/13	--	5.39	--	41.61					
					02/01/13	--	4.58	--	42.42					
J7IW01	Injection Grid	47.13	6	21	12/05/11	--	8.89	--	38.24					
					04/02/12	--	3.99	--	43.14					
										DECOMMISSIONED 2012				
J10IW01	Injection Grid	47.22	6.5	21.5	07/08/10	--	10.97	--	36.25					
					09/22/10	--	12.22	--	35.00					
					04/11/11	--	6.86	--	40.36					
					08/22/11	--	--	--	--					
					12/05/11	--	9.18	--	38.04					
					04/02/12	--	4.64	--	42.58					
					07/09/12	--	8.44	--	38.78					
					DECOMMISSIONED 2012									
K3IW01	Injection Grid	51.90	15	25	07/12/10	--	18.54	--	33.36					
					09/22/10	--	19.17	--	32.73					
					04/11/11	--	16.81	--	35.09					
					08/22/11	--	--	--	--					
					12/05/11	--	18.91	--	32.99					
					04/02/12	--	17.32	--	34.58					
					07/09/12	--	17.61	--	34.29					
					DECOMMISSIONED 2012									
L2IW01	Injection Grid	51.21	15	25	08/31/10	--	18.46	--	32.75					
					04/11/11	--	16.14	--	35.07					
					08/22/11	--	--	--	--					
					12/05/11	--	18.19	--	33.02					
					04/02/12	--	16.65	--	34.56					
					07/09/12	--	16.93	--	34.28					
										10/08/12 Not measured; inaccessible				
					01/28/13	--	11.63	--	39.58					
					02/01/13	--	10.85	--	40.36					
M5IW01	Injection Grid	47.13	6.5	21.5	07/08/10	--	13.61	--	33.52					
					09/22/10	--	14.14	--	32.99					
					04/11/11	--	11.74	--	35.39					
					08/22/11	--	--	--	--					
					12/05/11	12.35	13.90	1.55	34.47					
					04/02/12	--	12.49	--	34.64					
					07/09/12	--	12.69	--	34.44					
					10/08/12	--	11.20	--	35.93					
					01/28/13	--	8.25	--	38.88					
02/01/13	--	7.60	--	39.53										



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)	
Bulk Terminal Property										
Shallow Water-Bearing Zone										
N7IW01 (Formerly IW04)	Injection Grid	47.43	6	23	12/05/11	--	9.12	--	38.31	
					04/02/12	--	--	--	--	
					07/09/12	--	8.40	--	39.03	
					10/08/12	--	12.00	--	35.43	
					01/28/13	--	4.88	--	42.55	
					02/01/13	--	4.59	--	42.84	
N10IW01	Injection Grid	47.40	6.5	21.5	07/08/10	--	10.88	--	36.52	
					09/22/10	--	12.14	--	35.26	
					04/11/11	--	6.91	--	40.49	
					08/22/11	--	--	--	--	
					12/05/11	Dry			--	--
					04/02/12	--	4.93	--	42.47	
					07/09/12	--	8.36	--	39.04	
					10/08/12	--	12.27	--	35.13	
					01/28/13	--	4.92	--	42.48	
					02/01/13	--	4.57	--	42.83	
O5IW01	Injection Grid	47.45	6	21	08/31/10	--	14.44	--	33.01	
					04/11/11	--	10.78	--	36.67	
					08/22/11	--	--	--	--	
					12/05/11	--	11.93	--	35.52	
					04/02/12	--	9.84	--	37.61	
					07/09/12	--	10.78	--	36.67	
					10/08/12	Not measured; inaccessible			--	--
					01/28/13	--	7.34	--	40.11	
					02/01/13	--	6.88	--	40.57	
O6IW01	Injection Grid	47.30	6	21	01/28/13	--	4.61	--	42.69	
					02/01/13	--	4.41	--	42.89	
					07/07/10	--	9.89	--	37.35	
Q9IW01	Injection Grid	47.24	6	21	09/22/10	--	11.40	--	35.84	
					04/11/11	--	6.51	--	40.73	
					08/22/11	--	--	--	--	
					12/05/11	Inaccessible - Pump in well			--	--
					04/02/12	--	4.82	--	42.42	
					07/09/12	--	8.19	--	39.05	
					10/08/12	--	10.92	--	36.32	
					01/28/13	--	5.33	--	41.91	
					02/01/13	--	5.05	--	42.19	
IW03	Former PCP Mixing AST	47.03	6	23	12/13/11	--	8.85	--	38.18	
					04/09/12	--	4.14	--	42.89	
					10/08/12	--	11.54	--	35.49	
					02/01/13	--	4.18	--	42.85	
IW05	Former PCP Mixing AST	47.03	6	23	02/01/13	--	5.23	--	41.80	
IW07	Former PCP Mixing AST	47.03	6	23	02/01/13	--	4.44	--	42.59	
IW08	Former PCP Mixing AST	47.03	6	23	02/01/13	4.36	4.51	0.15	42.64	
East Waterfront Property										
Shallow Water-Bearing Zone										
02MW01	West of Parking Lot	24.19	10	20	06/20/06	--	5.16	--	19.03	
					12/11/06	--	5.08	--	19.11	
					09/05/08	--	5.60	--	18.59	
					01/26/09	--	5.64	--	18.55	
					04/06/09	--	4.49	--	19.58	
		07/06/09			--	5.33	--	18.74		
		01/25/10			--	4.30	--	19.77		
		04/05/10			--	4.43	--	19.64		
		07/06/10			--	4.90	--	19.17		
		01/06/11			--	4.75	--	19.32		
		04/11/11			--	4.53	--	19.54		
		08/22/11			--	5.65	--	18.42		
		12/05/11			--	5.41	--	18.66		
		04/02/12			--	4.09	--	19.98		
		10/08/12			--	6.16	--	17.91		



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
East Waterfront Property									
Shallow Water-Bearing Zone									
02MW02	Shoreline	20.02	5	10	06/20/06	--	1.21	--	18.81
					12/11/06	--	1.92	--	18.10
					09/05/08	--	1.93	--	18.09
					01/26/09	--	2.68	--	17.34
					04/06/09	--	1.07	--	18.91
					07/06/09	--	1.77	--	18.21
		01/25/10			--	1.65	--	18.33	
		04/05/10			--	1.08	--	18.90	
		07/06/10			--	1.28	--	18.70	
		01/06/11			--	1.95	--	18.03	
		04/11/11			--	1.05	--	18.93	
		08/22/11			--	2.19	--	17.79	
		12/05/11			--	2.41	--	17.57	
		04/02/12			--	0.91	--	19.07	
10/08/12	--	2.89	--	17.09					
02MW03	Parking Lot	27.86	10	20	06/20/06	--	8.79	--	19.07
					12/11/06	--	8.53	--	19.33
					09/05/08	--	9.19	--	18.67
					01/26/09	--	9.25	--	18.61
					04/06/09	--	8.05	--	19.73
					07/06/09	--	8.99	--	18.79
		01/25/10			--	8.00	--	19.78	
		04/05/10			--	8.00	--	19.78	
		07/06/10			--	8.51	--	19.27	
		01/06/11			--	8.34	--	19.44	
		04/11/11			--	8.05	--	19.73	
		08/22/11			--	9.26	--	18.52	
		12/05/11			--	9.00	--	18.78	
		04/02/12			--	7.76	--	20.02	
10/08/12	--	9.84	--	17.94					
02MW04	Garage Entrance	27.17	10	20	06/20/06	--	8.36	--	18.81
					12/11/06	--	8.46	--	18.71
					09/05/08	--	8.80	--	18.37
					01/26/09	--	10.40	--	16.77
					04/06/09	--	8.44	--	18.63
					07/06/09	--	8.81	--	18.26
		01/25/10			--	8.65	--	18.42	
		04/05/10			--	8.24	--	18.83	
		07/06/10			--	8.29	--	18.78	
		01/06/11			--	9.00	--	18.07	
		04/11/11			--	8.23	--	18.84	
		08/22/11			--	9.12	--	17.95	
		12/05/11			--	9.10	--	17.97	
		04/02/12			--	7.45	--	19.62	
10/08/12	--	9.83	--	17.24					
02MW06	Inside Garage	26.54	10	20	06/20/06	--	7.73	--	18.81
					12/11/06	--	8.18	--	18.36
					09/05/08	--	8.13	--	18.41
					01/26/09	--	8.77	--	17.77
					04/06/09	--	7.72	--	18.83
					07/06/09	--	8.17	--	18.38
		01/25/10			--	8.10	--	18.45	
		04/05/10			--	7.70	--	18.85	
		07/06/10			--	7.64	--	18.91	
		01/06/11			--	8.48	--	18.07	
		04/11/11			--	7.65	--	18.90	
		08/22/11			--	8.45	--	18.10	
		12/05/11			--	6.55	--	20.00	
		04/02/12			--	7.51	--	19.04	
10/08/12	--	9.18	--	17.37					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
East Waterfront Property									
Shallow Water-Bearing Zone									
02MW07	Shoreline	20.85	2	12	06/20/06	--	2.01	--	18.84
					12/11/06	--	1.17	--	19.68
					09/05/08	--	2.65	--	18.20
					01/26/09	--	3.11	--	17.74
		04/06/09			--	1.73	--	19.05	
		07/06/09			--	4.91	--	15.87	
		01/25/10			--	1.00	--	19.78	
		04/05/10			--	1.46	--	19.32	
		07/06/10			--	1.96	--	18.82	
		01/06/11			--	2.25	--	18.53	
		04/11/11			--	1.33	--	19.45	
		08/22/11			--	2.91	--	17.87	
		12/05/11			--	2.95	--	17.83	
		04/02/12			--	1.35	--	19.43	
10/08/12	--	3.64	--	17.14					
02MW08	Next to West Commodore Way	39.69	13	22	06/20/06	--	16.27	--	23.42
					12/11/06	--	14.63	--	25.06
					09/05/08	--	16.19	--	23.50
					01/26/09	--	9.65	--	30.04
		04/06/09			--	13.19	--	26.43	
		07/06/09			--	15.92	--	23.70	
		01/25/10			--	13.75	--	25.87	
		04/05/10			--	13.92	--	25.70	
		07/06/10			--	15.32	--	24.30	
		01/06/11			--	13.74	--	25.88	
		04/11/11			--	14.03	--	25.59	
		08/22/11			--	16.25	--	23.37	
		12/05/11			--	14.51	--	25.11	
		04/02/12			--	13.33	--	26.29	
10/08/12	--	16.39	--	23.23					
02MW09	West of Parking Lot	30.27	7	12	01/26/09	--	9.36	--	20.91
					04/06/09	--	7.99	--	22.28
					07/06/09	--	9.16	--	21.11
					01/25/10	--	6.78	--	23.49
					04/05/10	--	7.71	--	22.56
					07/06/10	--	8.86	--	21.41
					01/06/11	--	7.46	--	22.81
					04/11/11	--	7.57	--	22.70
					08/22/11	--	9.45	--	20.82
					12/05/11	--	8.76	--	21.51
					04/02/12	--	7.04	--	23.23
10/08/12	--	9.90	--	20.37					
02MW10	Former Pipeline Utilidor	28.62	2.5	7.5	01/26/09	--	3.50	--	25.12
					04/06/09	--	1.81	--	26.81
					07/06/09	--	4.81	--	23.81
					01/25/10	--	2.70	--	25.92
					04/05/10	--	2.52	--	26.10
					07/06/10	--	3.94	--	24.68
					01/06/11	--	3.04	--	25.58
					04/11/11	--	3.00	--	25.62
					08/22/11	--	5.28	--	23.34
					12/05/11	--	3.05	--	25.57
					04/02/12	--	2.04	--	26.58
10/08/12	--	4.98	--	23.64					



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TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
East Waterfront Property									
Shallow Water-Bearing Zone									
02MW11	Entrance Driveway	30.32	6	11	01/26/09	Not measured; unable to remove slip cap			
					04/06/09	Not measured; unable to remove slip cap			
					07/06/09	--	7.40	--	22.92
					01/25/10	--	5.64	--	24.68
					04/05/10	--	5.78	--	24.54
					07/06/10	--	6.67	--	23.65
					01/06/11	--	5.76	--	24.56
					04/11/11	--	5.84	--	24.48
					08/22/11	--	7.60	--	22.72
					12/05/11	--	5.97	--	24.35
					04/02/12	--	5.50	--	24.82
10/08/12	--	7.93	--	22.39					
02MW12	South of Former Warehouse	26.79	8.5	13.5	01/26/09	--	9.34	--	17.45
					04/06/09	--	7.00	--	19.79
					07/06/09	--	8.90	--	17.89
					01/25/10	--	7.44	--	19.35
					04/05/10	--	7.61	--	19.18
					07/06/10	--	7.69	--	19.10
					01/06/11	--	7.74	--	19.05
					04/11/11	--	7.23	--	19.56
					08/22/11	--	7.35	--	19.44
					12/05/11	--	7.73	--	19.06
					04/02/12	--	6.42	--	20.37
10/08/12	--	8.96	--	17.83					
02MW13	West of Parking Lot	30.05	5	15	01/26/09	--	8.88	--	21.17
					04/06/09	--	8.56	--	21.49
					07/06/09	--	10.06	--	19.99
					01/25/10	--	7.47	--	22.58
					04/05/10	--	8.24	--	21.81
					07/06/10	--	9.18	--	20.87
					01/06/11	--	7.77	--	22.28
					04/11/11	--	7.88	--	22.17
					08/22/11	--	9.70	--	20.35
					12/05/11	--	9.70	--	20.35
					04/02/12	--	7.70	--	22.35
10/08/12	--	10.26	--	19.79					
East Waterfront Property									
Intermediate Water-Bearing Zone									
02MW05	Entrance Driveway	36.59	20	35	06/20/06	--	15.24	--	21.35
		36.45			12/11/06	--	14.00	--	22.59
					09/05/08	--	15.03	--	21.56
					01/26/09	--	14.44	--	22.01
					04/06/09	--	12.65	--	23.80
					07/06/09	--	15.59	--	20.86
					01/25/10	--	13.16	--	23.29
					04/05/10	--	13.22	--	23.23
					07/06/10	--	14.31	--	22.14
					01/06/11	--	13.19	--	23.26
					04/11/11	--	13.29	--	23.16
					08/22/11	--	15.18	--	21.27
					12/05/11	--	13.62	--	22.83
					04/02/12	--	12.59	--	23.86
					10/08/12	--	15.60	--	20.85



Table 7
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 Seattle Terminal Properties
 Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
West Commodore Way									
Shallow Water-Bearing Zone									
01MW02	Former HQ USTs	44.78	10	25	06/20/06	--	15.33	0.01	29.46
					12/11/06	--	14.25	0.01	30.54
					09/05/08	--	15.03	--	29.75
					01/26/09	--	14.43	--	30.34
					04/06/09	--	12.54	--	32.23
		07/06/09			--	13.18	--	31.59	
		01/25/10			--	12.82	--	31.95	
		04/05/10			--	12.28	--	32.49	
		07/06/10			--	14.72	--	30.05	
		01/06/11			--	12.76	--	32.01	
		04/11/11			--	13.25	--	31.52	
		08/22/11			--	15.51	--	29.26	
		12/05/11			--	14.20	--	30.57	
		04/02/12			--	11.70	--	33.07	
		10/08/12			--	15.82	--	28.95	
02/01/13	--	9.73	--	35.04					
01MW03	Former HQ USTs	44.35	10	25	06/20/06	--	14.99	--	29.36
					12/11/06	--	13.65	--	30.70
					09/05/08	--	14.74	--	29.61
					01/26/09	--	14.26	--	29.96
					04/06/09	--	12.15	--	32.07
		07/06/09			--	14.88	--	29.34	
		01/25/10			--	12.38	--	31.84	
		04/05/10			--	11.23	--	32.99	
		07/06/10			--	14.47	--	29.75	
		01/06/11			--	12.40	--	31.82	
		04/11/11			--	13.08	--	31.14	
		08/22/11			--	15.15	--	29.07	
		12/05/11			--	14.13	--	30.09	
		04/02/12			--	10.90	--	33.32	
		10/08/12			--	15.40	--	28.82	
02/01/13	--	9.05	--	35.17					
01MW09	Former HQ USTs	43.91	10	25	10/01/02	--	--	0.01 ⁽³⁾	--
					06/20/06	--	16.68	--	27.23
					12/11/06	Not measured; skimmer in well			
					09/05/08	16.52	16.53	0.01	27.39
					01/26/09	--	15.95	--	27.92
		04/06/09			--	14.90	--	28.97	
		07/06/09			--	16.55	--	27.32	
		01/25/10			--	14.89	--	28.98	
		04/05/10			--	14.53	--	29.34	
		07/06/10			--	16.06	--	27.81	
		01/06/11			--	14.60	--	29.27	
		04/11/11			--	15.17	--	28.70	
		08/22/11			--	16.69	--	27.18	
		12/05/11			--	15.97	--	27.90	
		04/02/12			--	14.40	--	29.47	
10/08/12	--	16.93	--	26.94					
02/01/13	--	12.90	--	30.97					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
West Commodore Way									
Shallow Water-Bearing Zone									
01MW10	Former Loading Racks	44.02	10	24.9	10/01/03	--	23.50	0.49	20.91
					01/01/04	--	22.50	1.65	22.84
					04/01/04	--	22.98	0.90	21.76
					07/15/04	22.32	23.03	0.71	21.56
					11/17/04	21.95	23.35	1.40	21.79
					10/24/05	21.18	23.47	2.29	22.38
					06/20/06	18.84	22.63	3.79	24.42
					12/11/06	17.57	22.73	5.16	25.42
					09/05/08	18.62	20.49	1.87	25.03
					01/26/09	17.11	21.21	4.10	27.02
		04/06/09			14.47	14.90	0.43	30.39	
		07/06/09			17.95	20.06	2.11	26.58	
		10/07/09			19.18	21.47	2.29	25.31	
		01/25/10			15.61	20.52	4.91	28.36	
		04/05/10			16.48	19.99	3.51	27.77	
		07/06/10			17.20	20.01	2.81	27.19	
		01/06/11			19.85 ⁽⁴⁾	19.95	0.10	25.08	
		04/11/11			15.08	20.35	5.27	28.82	
		08/22/11			17.93	19.35	1.42	26.74	
		12/05/11			16.39	16.40	0.01	28.56	
04/02/12	13.79	14.84	1.05	30.95					
07/09/12	14.16	17.29	3.13	30.16					
10/08/12	16.25	19.94	3.69	27.96					
01MW11	Former Loading Racks	46.10	15	30	06/20/06	--	22.63	--	23.47
		46.04			12/11/06	--	22.39	--	23.71
					09/05/08	--	22.44	--	23.66
					01/26/09	--	22.26	--	23.78
					04/06/09	--	20.85	--	25.19
					07/06/09	--	22.31	--	23.73
					01/25/10	--	21.26	--	24.78
					04/05/10	--	21.44	--	24.60
					07/06/10	--	19.59	--	26.45
					01/06/11	--	19.80	--	26.24
					04/11/11	--	19.68	--	26.36
					08/22/11	--	21.67	--	24.37
					12/05/11	--	21.30	--	24.74
					04/02/12	--	20.36	--	25.68
					10/08/12	--	21.70	--	24.34
					02/01/13	--	20.41	--	25.63
01MW16	Former Loading Racks	44.95	10	20	04/02/02	--	--	0.01 ⁽³⁾	--
					07/02/02	--	--	0.01 ⁽³⁾	--
					10/02/02	--	--	0.01 ⁽³⁾	--
					10/01/03	18.38	19.74	1.36	26.30
					01/01/04	16.73	19.16	2.43	27.73
					04/01/04	17.40	19.64	2.24	27.10
					07/15/04	17.93	19.20	1.27	26.77
					11/17/04	17.67	17.97	0.30	27.22
					10/24/05	18.03	19.40	1.37	26.65
					06/20/06	18.82	18.83	0.01	26.13
					12/11/06	16.57	17.31	0.74	28.23
09/05/08	16.93	18.31	1.38	27.74					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
West Commodore Way									
Shallow Water-Bearing Zone									
01MW16 (continued)	Former Loading Racks	44.86	10	20	01/26/09	16.32	17.75	1.43	28.25
					04/06/09	14.40	16.95	2.55	29.95
					07/06/09	17.16	18.55	1.39	27.42
					10/09/09	17.99	18.65	0.66	26.74
					01/25/10	15.28	15.80	0.52	29.48
					04/05/10	15.31	16.00	0.69	29.41
					07/06/10	16.91	17.42	0.51	27.85
					01/06/11	15.83 ⁽⁴⁾	15.93	0.10	29.01
					04/11/11	15.60	15.98	0.38	29.18
					08/22/11	17.65	18.02	0.37	27.14
					12/05/11	17.13	17.14	0.01	27.73
					04/02/12	15.03	15.29	0.26	29.78
					07/09/12	16.61	16.66	0.05	28.24
10/08/12	17.88	18.14	0.26	26.93					
01MW30	Barrel Incline	44.50	15	28	06/20/06	--	22.37	--	22.13
		44.42			12/11/06	--	22.81	--	21.69
					09/05/08	--	23.51	--	20.99
					01/26/09	--	22.92	--	21.50
					04/06/09	--	22.78	--	21.64
					07/06/09	--	23.24	--	21.18
					01/25/10	--	22.15	--	22.27
					04/05/10	--	22.49	--	21.93
					07/06/10	--	22.85	--	21.57
					01/06/11	--	21.86	--	22.56
					04/11/11	--	22.09	--	22.33
					08/22/11	--	23.14	--	21.28
					12/05/11	--	22.95	--	21.47
					04/02/12	--	22.38	--	22.04
					09/04/12	--	23.10	--	21.32
10/08/12	--	23.30	--	21.12					
02/01/13	--	21.95	--	22.47					
01MW31	North Shoulder	43.80	5	15	07/13/06	Dry			
					12/11/06	Dry			
					09/05/08	Dry			
					01/26/09	Dry			
					04/06/09	Dry			
					07/06/09	Dry			
					01/25/10	Dry			
					04/05/10	--	14.95	--	28.85
					07/06/10	Dry			
					01/06/11	Dry			
					04/11/11	Dry			
					08/22/11	--	14.93	--	28.87
					12/05/11	--	14.85	--	28.95
					04/02/12	--	14.80	--	29.00
10/08/12	Dry								
01MW32	North Shoulder	44.40	17	27	07/13/06	--	25.03	--	19.37
		44.33			12/11/06	--	23.15	--	21.25
					09/05/08	--	24.67	--	19.73
					01/26/09	--	21.82	--	22.51
					04/06/09	--	20.44	--	23.89
					07/06/09	--	23.40	--	20.93
					01/25/10	--	19.84	--	24.49
					04/05/10	--	20.64	--	23.69
					07/06/10	--	20.68	--	23.65
					01/06/11	--	19.25	--	25.08
					04/11/11	--	19.18	--	25.15
					08/22/11	--	21.12	--	23.21
					12/05/11	--	20.16	--	24.17
					04/02/12	--	18.39	--	25.94
10/08/12	--	17.82	--	26.51					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
West Commodore Way									
Shallow Water-Bearing Zone									
01MW33	Former Loading Rack	45.14	5	20	07/13/06	--	11.31	--	33.83
					12/11/06	--	8.35	--	36.79
					09/05/08	7.65	7.72	0.07	37.48
					01/26/09	8.20	8.80	0.60	36.75
					04/06/09	5.75	5.95	0.20	39.28
		07/06/09			10.40	10.90	0.50	34.57	
		10/06/09			9.08	9.44	0.36	35.92	
		01/25/10			6.70	6.76	0.06	38.36	
		04/05/10			6.39	6.52	0.13	38.65	
		07/06/10			10.31	10.82	0.51	34.66	
		01/06/11			6.50 ⁽⁴⁾	6.61	0.11	38.55	
		04/11/11			6.59	7.53	0.94	38.29	
		08/22/11			11.12	11.35	0.23	33.90	
		12/05/11			7.41	7.60	0.19	37.62	
		04/02/12			5.35	5.36	0.01	39.72	
10/08/12	12.43	12.86	0.01	32.22					
01MW34	North Shoulder	45.29	11	21	07/13/06	Dry			
					12/22/06	--	19.66	--	25.63
					09/05/08	Dry			
					01/26/09	--	19.59	--	25.62
					04/06/09	--	19.15	--	26.06
		07/06/09			--	19.96	--	25.25	
		01/25/10			--	19.44	--	25.77	
		04/05/10			--	19.59	--	25.62	
		07/06/10			--	19.79	--	25.42	
		01/06/11			19.47	19.48	0.01	25.74	
		04/11/11			--	19.41	--	25.80	
		08/22/11			--	20.74	--	24.47	
		12/05/11			--	19.60	--	25.61	
		04/02/12			--	19.29	--	25.92	
		10/08/12			--	20.73	--	24.48	
01MW35	North Shoulder	44.63	10	20	07/13/06	Dry			
					12/11/06	--	19.48	--	25.15
					09/05/08	--	19.89	--	24.74
					01/26/09	--	19.74	--	24.81
					04/06/09	--	17.80	--	26.75
		07/06/09			Dry				
		01/25/10			--	18.53	--	26.02	
		04/05/10			--	19.13	--	25.42	
		07/06/10			--	19.36	--	25.19	
		04/11/11			--	18.44	--	26.11	
		08/22/11			--	19.92	--	24.63	
		12/05/11			--	19.74	--	24.81	
		04/02/12			--	18.05	--	26.50	
		10/08/12			--	19.93	--	24.62	
		01MW36			North Shoulder	45.27	10	20	07/13/06
12/11/06	--		18.76	--					26.51
09/05/08	--		19.05	--					26.22
01/26/09	--		18.93	--					26.26
04/06/09	--		18.23	--					26.96
07/06/09	--		19.39	--		25.80			
01/25/10	--		18.90	--		26.29			
04/05/10	--		19.44	--		25.75			
07/06/10	--		19.12	--		26.07			
01/06/11	--		18.62	--		26.57			
04/11/11	--		18.50	--		26.69			
08/22/11	--		19.58	--		25.61			
12/05/11	--		19.02	--		26.17			
04/02/12	--		18.42	--		26.77			
10/08/12	--		19.77	--		25.42			



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
West Commodore Way									
Shallow Water-Bearing Zone									
01MW47	Eastbound Lane	43.90	6	21	12/22/06	--	18.76	--	25.14
		43.87			09/05/08	--	18.42	--	25.48
					01/26/09	--	18.27	--	25.60
					04/06/09	--	16.79	--	27.08
					07/06/09	18.35	18.63	0.28	25.46
					01/25/10	16.73	17.20	0.47	27.05
					04/05/10	16.46	16.73	0.27	27.36
					07/06/10	17.82	18.46	0.64	25.92
					01/06/11	16.59	17.09	0.50	27.18
					04/11/11	17.06	17.57	0.51	26.71
					08/22/11	18.52	19.14	0.62	25.23
					12/05/11	18.18	18.19	0.01	25.69
					04/02/12	16.52	16.53	0.01	27.35
					10/08/12	18.65	19.26	0.61	25.10
01MW49	Eastbound Lane	45.95	15	25	12/22/06	--	19.24	--	26.71
		44.17			09/05/08	--	25.12	--	20.83
					01/26/09	--	25.15	--	19.02
					04/06/09	--	24.50	--	19.67
					07/06/09	--	24.90	--	19.27
					01/25/10	--	24.41	--	19.76
					04/05/10	--	24.50	--	19.67
					07/06/10	--	24.23	--	19.94
					01/06/11	24.05	24.06	0.01	20.12
					04/11/11	--	24.19	--	19.98
					08/22/11	--	19.10	--	25.07
					12/05/11	--	24.49	--	19.68
					04/02/12	--	23.62	--	20.55
					10/08/12	--	24.28	--	19.89
01MW50	Eastbound Lane	43.51	15	25	12/22/06	--	21.48	--	22.03
		43.48			09/05/08	--	22.44	--	21.07
					01/26/09	--	21.71	--	21.77
					04/06/09	--	21.33	--	22.15
					07/06/09	--	22.13	--	21.35
					01/25/10	--	20.86	--	22.62
					04/05/10	--	23.31	--	20.17
					07/06/10	--	21.65	--	21.83
					01/06/11	--	20.54	--	22.94
					04/11/11	--	20.86	--	22.62
					08/22/11	--	22.00	--	21.48
					12/05/11	--	21.62	--	21.86
					04/02/12	--	20.94	--	22.54
					10/08/12	--	22.23	--	21.25
01MW52	Eastbound Lane	43.50	14	24	09/05/08	--	24.21	--	19.29
					01/26/09	--	23.94	--	19.56
					04/06/09	--	23.88	--	19.62
					07/06/09	--	24.23	--	19.27
					01/25/10	--	23.35	--	20.15
					04/05/10	--	23.58	--	19.92
					07/06/10	--	23.82	--	19.68
					01/06/11	--	23.27	--	20.23
					04/11/11	--	23.32	--	20.18
					08/22/11	--	24.02	--	19.48
					12/05/11	--	24.19	--	19.31
					04/02/12	--	23.61	--	19.89
					09/04/12	--	24.11	--	19.39
					10/08/12	--	24.24	--	19.26



Table 7
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Seattle Terminal Properties
Seattle, Washington

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West Commodore Way														
Shallow Water-Bearing Zone														
01MW53	Eastbound Lane	43.11	16	26	09/05/08	--	23.52	--	19.59					
					01/26/09	--	23.56	--	19.55					
					04/06/09	--	23.53	--	19.58					
					07/06/09	--	23.50	--	19.61					
					01/25/10	--	23.72	--	19.39					
					04/05/10	--	23.30	--	19.81					
					07/06/10	--	23.37	--	19.74					
					01/06/11	--	23.26	--	19.85					
					04/11/11	--	23.19	--	19.92					
					08/22/11	--	23.33	--	19.78					
					12/05/11	--	23.53	--	19.58					
					04/02/12	--	23.46	--	19.65					
01MW83	North Shoulder	42.67	14	24	04/22/11	--	21.22	--	21.45					
					04/25/11	--	21.24	--	21.43					
					08/22/11	--	22.44	--	20.23					
					12/05/11	--	22.31	--	20.36					
					04/02/12	--	20.96	--	21.71					
					10/08/12	--	22.83	--	19.84					
					01MW84	North Shoulder	43.62	13	23	04/22/11	--	18.05	--	25.57
										04/25/11	--	18.10	--	25.52
										08/22/11	--	18.23	--	25.39
										12/05/11	--	18.12	--	25.50
										04/02/12	--	16.95	--	26.67
										10/08/12	--	19.47	--	24.15
01MW85	South Shoulder	44.05	18	27	04/22/11	--	23.57	--	20.48					
					08/22/11	--	23.74	--	20.31					
					12/05/11	--	23.95	--	20.10					
					04/02/12	Not measured; inaccessible								
					09/04/12	--	23.94	--	20.11					
					10/08/12	--	24.02	--	20.03					
01MW86	Eastbound Lane	44.80	14.5	24.5	04/22/11	--	18.93	--	25.87					
					04/25/11	--	18.97	--	25.83					
					08/22/11	--	19.02	--	25.78					
					12/05/11	--	19.74	--	25.06					
					04/02/12	--	18.82	--	25.98					
					10/08/12	--	19.95	--	24.85					
					01/28/13	--	18.28	--	26.52					
01MW87	Eastbound Lane	45.27	11	21	04/25/11	--	13.95	--	31.32					
					08/22/11	--	13.97	--	31.30					
					12/05/11	--	13.32	--	31.95					
					04/02/12	--	11.55	--	33.72					
					10/08/12	--	18.08	--	27.19					
					01/28/13	--	15.19	--	30.08					
01MW88	North Shoulder	45.1	11	21	04/25/11	--	18.75	--	26.35					
					08/22/11	--	18.92	--	26.18					
					12/05/11	--	19.47	--	25.63					
					04/02/12	--	18.15	--	26.95					
					10/08/12	--	19.55	--	25.55					
01MW89	South Shoulder	43.26	18	26	04/22/11	--	23.25	--	20.01					
					04/25/11	--	23.25	--	20.01					
					08/22/11	--	23.77	--	19.49					
					12/05/11	--	23.96	--	19.30					
					04/02/12	--	23.52	--	19.74					
					09/04/12	--	23.89	--	19.37					
10/08/12	--	23.99	--	19.27										



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
West Commodore Way									
Intermediate Water-Bearing Zone									
01MW48	Eastbound Lane	44.73	27	32	12/22/06	--	26.85	--	17.88
		44.72			09/05/08	--	26.25	--	18.48
					01/26/09	--	25.76	--	18.96
					04/06/09	--	24.80	--	19.92
					07/06/09	--	25.95	--	18.77
					01/25/10	--	24.10	--	20.62
					04/05/10	--	24.26	--	20.46
					07/06/10	--	24.32	--	20.40
					01/06/11	--	24.85	--	19.87
					04/11/11	--	23.48	--	21.24
					08/22/11	--	24.70	--	20.02
					12/05/11	--	24.66	--	20.06
					04/02/12	--	23.75	--	20.97
					10/08/12	--	24.45	--	20.27
01MW51	Eastbound Lane	44.20	29	39	12/22/06	--	26.48	--	17.72
		44.93			09/05/08	--	25.20	--	19.00
					01/26/09	--	19.90	--	25.03
					04/06/09	--	18.42	--	26.51
					07/06/09	--	20.19	--	24.74
					01/25/10	--	18.72	--	26.21
					04/05/10	--	19.25	--	25.68
					07/06/10	--	16.58	--	28.35
					01/06/11	--	16.01	--	28.92
					04/11/11	--	16.92	--	28.01
					08/22/11	--	24.69	--	20.24
					12/05/11	--	18.53	--	26.40
					04/02/12	17.52	17.53	0.01	27.41
					10/08/12	--	19.24	--	25.69
ASKO Hydraulic Property									
Perched Water									
MW03	Former Steam Cleaning Area	46.27	7	14	04/25/06	--	9.69	--	36.58
		46.2			08/17/06	--	11.41	--	34.86
					12/14/06	--	12.61	--	33.66
					09/05/08	--	10.71	--	35.56
					01/26/09	--	9.99	--	36.21
					04/06/09	--	9.50	--	36.70
					07/06/09	--	10.15	--	36.05
					01/25/10	--	9.84	--	36.36
					04/05/10	--	9.54	--	36.66
					07/06/10	--	9.84	--	36.36
					01/06/11	--	9.53	--	36.67
					04/11/11	--	9.49	--	36.71
					08/22/11	--	10.26	--	35.94
					12/05/11	--	9.90	--	36.30
					04/02/12	--	9.49	--	36.71
					09/04/12	--	10.51	--	35.69
					10/08/12	--	10.82	--	35.38
01SVE01	New Barrel Shed	50.18	5	13	04/05/10	--	--	--	--
					07/06/10	--	--	--	--
					01/06/11	--	--	--	--
					04/11/11	--	--	--	--
					08/22/11	Dry			
					12/05/11	Dry			
					04/02/12	--	--	--	--
					09/04/12	Dry			
10/08/12	Dry								



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
ASKO Hydraulic Property									
Perched Water									
01MW70/01SVE02	New Barrel Shed	58.14	5	20	04/05/10	--	3.29	--	54.85
					07/06/10	--	7.62	--	50.52
					01/06/11	--	6.58	--	51.56
					04/11/11 ⁽⁶⁾	--	6.16	--	51.98
					08/22/11 ⁽⁶⁾	--	10.33	--	47.81
					12/05/11	--	7.83	--	50.31
					04/02/12	--	6.08	--	52.06
					09/04/12	--	9.60	--	48.54
01MW71/01SVE03	New Barrel Shed	58.38	5	20	04/05/10	--	6.26	--	52.12
					07/06/10	--	7.58	--	50.80
					01/06/11	--	6.70	--	51.68
					04/11/11 ⁽⁶⁾	--	6.21	--	52.17
					08/22/11 ⁽⁶⁾	--	9.36	--	49.02
					12/05/11	--	7.94	--	50.44
					04/02/12	--	6.20	--	52.18
					09/04/12	--	9.42	--	48.96
01MW79	New Barrel Shed	54.36	5	19	04/11/11 ⁽⁶⁾	--	8.06	--	46.30
					08/22/11 ⁽⁶⁾	--	9.23	--	45.13
					12/05/11	--	8.70	--	45.66
					04/02/12	--	8.16	--	46.20
					09/04/12	--	9.43	--	44.93
					10/08/12	--	10.03	--	44.33
Shallow Water-Bearing Zone									
MW01	West Side	46.53	18	28	04/26/06	--	23.26	--	23.27
					08/17/06	--	23.31	--	23.22
					12/13/06	--	23.30	--	23.23
					09/05/08	--	23.31	--	23.22
					01/26/09	--	23.46	--	22.98
					04/06/09	--	23.37	--	23.07
					07/06/09	--	23.29	--	23.15
		46.44			01/25/10	--	23.17	--	23.27
					04/05/10	--	23.12	--	23.32
					07/06/10	--	23.15	--	23.29
					01/06/11	--	23.06	--	23.38
					04/11/11	--	23.05	--	23.39
					08/22/11	--	23.01	--	23.43
					12/05/11	--	23.18	--	23.26
MW02	West Side	46.81	18	28	04/26/06	--	25.01	--	21.80
					08/17/06	--	25.03	--	21.78
					12/13/06	--	25.02	--	21.79
					09/05/08	--	25.03	--	21.78
					01/26/09	--	25.16	--	21.57
					04/06/09	--	25.08	--	21.65
					07/06/09	--	24.98	--	21.75
		46.73			01/25/10	--	24.77	--	21.96
					04/05/10	--	24.77	--	21.96
					07/06/10	--	24.84	--	21.89
					01/06/11	--	24.68	--	22.05
					04/11/11	--	24.63	--	22.10
					08/22/11	--	24.83	--	21.90
					12/05/11	--	24.97	--	21.76
04/02/12	--	24.68	--	22.05					
09/04/12	--	24.88	--	21.85					
10/08/12	--	24.92	--	21.81					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
ASKO Hydraulic Property									
Shallow Water-Bearing Zone									
MW04	Former Steam Cleaning Area	46.33	18	28	04/25/06	--	22.38	--	23.95
					08/17/06	--	22.52	--	23.81
					12/13/06	--	22.51	--	23.82
					09/05/08	--	22.47	--	23.86
					01/26/09	--	22.63	--	23.64
		04/06/09			--	22.50	--	23.77	
		07/06/09			--	22.45	--	23.82	
		01/25/10			--	22.35	--	23.92	
		04/05/10			--	22.29	--	23.98	
		07/06/10			--	22.32	--	23.95	
		01/06/11			--	22.25	--	24.02	
		04/11/11			--	22.22	--	24.05	
		08/22/11			--	22.19	--	24.08	
		12/05/11			--	22.36	--	23.91	
		04/02/12			--	22.23	--	24.04	
09/04/12	--	22.27	--	24.00					
10/08/12	--	22.81	--	23.46					
MW05	Former Steam Cleaning Area	45.88	19	29	04/25/06	--	21.79	--	24.09
					08/17/06	--	21.89	--	23.99
					12/13/06	--	21.84	--	24.04
					09/05/08	--	21.81	--	24.07
					01/26/09	--	21.99	--	23.83
		04/06/09			--	21.86	--	23.96	
		07/06/09			--	21.81	--	24.01	
		01/25/10			--	21.72	--	24.10	
		04/05/10			--	21.63	--	24.19	
		07/06/10			--	21.69	--	24.13	
		01/06/11			--	22.62	--	23.20	
		04/11/11			--	21.58	--	24.24	
		08/22/11			--	21.53	--	24.29	
		12/05/11			--	21.68	--	24.14	
		04/02/12			--	21.57	--	24.25	
09/04/12	--	21.63	--	24.19					
10/08/12	--	21.63	--	24.19					
MW06	Former Heating Fuel UST	45.82	18	28	04/25/06	--	23.20	--	22.62
					08/17/06	--	23.33	--	22.49
					12/13/06	--	23.32	--	22.50
					09/05/08	--	23.27	--	22.55
					01/26/09	--	23.35	--	22.41
		04/06/09			--	23.25	--	22.51	
		07/06/09			--	23.18	--	22.58	
		01/25/10			--	23.00	--	22.76	
		04/05/10			--	22.95	--	22.81	
		07/06/10			--	23.08	--	22.68	
		01/06/11			--	22.99	--	22.77	
		04/11/11			--	22.92	--	22.84	
		08/22/11			--	23.02	--	22.74	
		12/05/11			--	23.21	--	22.55	
		04/02/12			--	23.01	--	22.75	
09/04/12	--	23.14	--	22.62					
10/08/12	--	23.17	--	22.59					
01MW07	Barrel Incline	45.17	15	30	06/20/06	--	23.51	--	21.66
					12/11/06	--	23.32	--	21.85
					09/05/08	--	23.35	--	21.82
		01/26/09			--	23.33	--	21.76	
		04/06/09			--	23.28	--	21.81	
		07/06/09			--	23.24	--	21.85	
		01/25/10			--	22.16	--	22.93	
		04/05/10			--	23.12	--	21.97	
		07/06/10			--	23.09	--	22.00	
01/06/11	--	22.94	--	22.15					
		45.09							



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
ASKO Hydraulic Property									
Shallow Water-Bearing Zone									
01MW07 (continued)	Barrel Incline	45.09	15	30	04/11/11	--	22.90	--	22.19
					08/22/11	--	22.88	--	22.21
					12/05/11	--	23.01	--	22.08
					04/02/12	--	23.05	--	22.04
					09/04/12	--	23.01	--	22.08
					10/08/12	--	23.04	--	22.05
01MW15	New Barrel Shed	50.89	10	30	06/20/06	--	22.90	--	27.99
		50.83			12/11/06	--	23.71	--	27.18
					09/05/08	--	22.79	--	28.10
					01/26/09	--	25.50	--	25.33
					04/06/09	--	22.84	--	27.99
					07/06/09	--	22.73	--	28.10
					01/25/10	--	22.80	--	28.03
					04/05/10	--	22.55	--	28.28
					07/06/10	--	22.65	--	28.18
					01/06/11	--	22.55	--	28.28
					04/11/11	--	22.56	--	28.27
					08/22/11	--	22.28	--	28.55
					12/05/11	--	22.49	--	28.34
					04/02/12	--	22.60	--	28.23
					09/04/12	--	22.45	--	28.38
10/08/12	--	22.37	--	28.46					
01MW44	West of Barrel Incline	49.50	15	30	09/27/06	--	22.63	--	26.87
		49.46			12/12/06	--	22.52	--	26.98
					09/05/08	--	22.56	--	26.94
					01/26/09	--	22.76	--	26.70
					04/06/09	--	22.61	--	26.85
					07/06/09	--	22.56	--	26.90
					01/25/10	--	22.56	--	26.90
					04/05/10	--	22.38	--	27.08
					07/06/10	--	22.42	--	27.04
					01/06/11	--	22.33	--	27.13
					04/11/11	--	22.32	--	27.14
					08/22/11	--	22.13	--	27.33
					12/05/11	--	22.29	--	27.17
					04/02/12	--	22.28	--	27.18
					09/04/12	--	22.28	--	27.18
10/08/12	--	22.22	--	27.24					
01MW45	West of Barrel Incline	45.83	12	27	09/27/06	--	26.30	--	19.53
		45.89			12/12/06	--	24.30	--	21.53
					09/05/08	--	24.22	--	21.61
					01/26/09	--	24.28	--	21.61
					04/06/09	--	24.18	--	21.71
					07/06/09	--	24.15	--	21.74
					01/25/10	--	24.10	--	21.79
					04/05/10	--	24.04	--	21.85
					07/06/10	--	24.00	--	21.89
					01/06/11	--	23.90	--	21.99
					04/11/11	--	23.91	--	21.98
					08/22/11	--	23.77	--	22.12
					12/05/11	--	23.90	--	21.99
					04/02/12	--	24.00	--	21.89
					09/04/12	--	23.91	--	21.98
10/08/12	--	23.96	--	21.93					



Table 7
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TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

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ASKO Hydraulic Property									
Shallow Water-Bearing Zone									
01MW46	West of Barrel Incline	47.70	13	28	09/27/06	--	26.89	--	20.81
					12/12/06	--	25.46	--	22.24
		09/05/08			--	25.51	--	22.19	
		01/26/09			--	25.55	--	21.13	
		04/06/09			--	25.45	--	21.23	
		07/06/09			--	25.44	--	21.24	
		01/25/10			--	25.38	--	21.30	
		04/05/10			--	25.31	--	21.37	
		07/06/10			--	25.28	--	21.40	
		01/06/11			--	25.18	--	21.50	
		04/11/11			--	25.17	--	21.51	
		08/22/11			--	25.00	--	21.68	
		12/05/11			--	25.22	--	21.46	
		04/02/12			--	25.26	--	21.42	
09/04/12	Not measured; inaccessible								
10/08/12	--	25.30	--	21.38					
01MW55	New Barrel Shed	50.37	14.8	29.8	11/25/08	--	22.54	--	27.83
					01/26/09	--	23.38	--	26.99
					04/06/09 ⁽⁶⁾	--	23.33	--	27.04
					07/06/09 ⁽⁶⁾	--	23.25	--	27.12
					01/25/10 ⁽⁶⁾	--	23.22	--	27.15
					04/05/10 ⁽⁶⁾	--	22.35	--	28.02
					07/06/10 ⁽⁶⁾	--	22.91	--	27.46
					01/06/11 ⁽⁶⁾	--	22.59	--	27.78
					04/11/11 ⁽⁶⁾	--	22.47	--	27.90
					08/22/11 ⁽⁶⁾	--	22.71	--	27.66
					12/05/11	--	22.82	--	27.55
					04/02/12	--	22.29	--	28.08
					09/04/12	--	22.90	--	27.47
					10/08/12	--	22.89	--	27.48
01MW56	West of Barrel Incline	44.50	16.5	26.5	11/25/08	--	23.05	--	21.45
					01/26/09	--	23.08	--	21.42
					04/06/09	--	23.00	--	21.50
					07/06/09	--	22.98	--	21.52
					01/25/10	--	22.88	--	21.62
					04/05/10	--	22.82	--	21.68
					07/06/10	--	22.80	--	21.70
					01/06/11	--	22.65	--	21.85
					04/11/11	--	22.65	--	21.85
					08/22/11	--	22.56	--	21.94
					12/05/11	--	22.72	--	21.78
					04/02/12	--	22.76	--	21.74
					09/04/12	--	22.71	--	21.79
					10/08/12	--	22.75	--	21.75
01MW58	Former Steam Cleaning Area	52.00	25.9	36	11/25/08	--	26.55	--	25.45
					01/26/09	--	26.78	--	25.22
					04/06/09	--	26.59	--	25.41
					07/06/09	--	26.55	--	25.45
					01/25/10	--	26.52	--	25.48
					04/05/10	--	26.38	--	25.62
					07/06/10	--	26.40	--	25.60
					01/06/11	--	26.34	--	25.66
					04/11/11	--	26.40	--	25.60
					08/22/11	--	26.15	--	25.85
					12/05/11	--	26.28	--	25.72
					04/02/12	--	26.39	--	25.61
					09/04/12	--	26.30	--	25.70
					10/08/12	--	26.22	--	25.78



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 Seattle Terminal Properties
 Seattle, Washington

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ASKO Hydraulic Property									
Shallow Water-Bearing Zone									
01MW60	North of Former Rail Spurs	58.01	24	39	01/26/09	--	30.12	--	27.89
					04/06/09	--	29.97	--	28.04
					07/06/09	--	29.81	--	28.20
					01/25/10	--	29.89	--	28.12
					04/05/10	--	29.56	--	28.45
					07/06/10	--	29.78	--	28.23
					01/06/11	--	29.64	--	28.37
					04/11/11	--	29.69	--	28.32
					08/22/11	--	29.28	--	28.73
					12/05/11	--	29.59	--	28.42
					04/02/12	--	29.80	--	28.21
09/04/12	--	29.55	--	28.46					
10/08/12	--	29.40	--	28.61					
01MW61	North of Former Rail Spurs	58.93	22.5	37.5	01/26/09	--	30.29	--	28.64
					04/06/09	--	30.12	--	28.81
					07/06/09	--	29.96	--	28.97
					01/25/10	--	30.00	--	28.93
					04/05/10	--	29.68	--	29.25
					07/06/10	--	29.93	--	29.00
					01/06/11	--	29.82	--	29.11
					04/11/11	--	29.81	--	29.12
					08/22/11	--	29.42	--	29.51
					12/05/11	--	29.82	--	29.11
					04/02/12	--	29.98	--	28.95
09/04/12	--	29.77	--	29.16					
10/08/12	--	29.55	--	29.38					
01MW62	North of Former Rail Spurs	58.54	24	39	01/26/09	--	31.24	--	27.30
					04/06/09	--	31.10	--	27.44
					07/06/09	--	31.00	--	27.54
					01/25/10	--	31.00	--	27.54
					04/05/10	--	30.83	--	27.71
					07/06/10	--	31.91	--	26.63
					01/06/11	--	30.81	--	27.73
					04/11/11	--	30.83	--	27.71
					08/22/11	--	30.55	--	27.99
					12/05/11	--	30.75	--	27.79
					04/02/12	--	30.90	--	27.64
09/04/12	--	30.73	--	27.81					
10/08/12	--	30.62	--	27.92					
01MW63	New Barrel Shed	54.38	19.5	32	01/26/09	--	27.09	--	27.29
					04/06/09 ⁽⁶⁾	--	26.86	--	27.52
					07/06/09 ⁽⁶⁾	--	26.83	--	27.55
					01/25/10 ⁽⁶⁾	--	26.82	--	27.56
					04/05/10 ⁽⁶⁾	--	26.48	--	27.90
					07/06/10 ⁽⁶⁾	--	26.65	--	27.73
					01/06/11 ⁽⁶⁾	--	26.49	--	27.89
					04/11/11 ⁽⁶⁾	--	26.37	--	28.01
					08/22/11 ⁽⁶⁾	--	26.22	--	28.16
					12/05/11	--	26.49	--	27.89
					04/02/12	--	26.26	--	28.12
09/04/12	--	26.37	--	28.01					
10/08/12	--	26.35	--	28.03					



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)					
ASKO Hydraulic Property														
Shallow Water-Bearing Zone														
01MW64	North of Former Rail Spurs	57.74	25	40	04/06/09	--	31.32	--	26.42					
					07/06/09	--	31.27	--	26.47					
					01/25/10	--	31.28	--	26.46					
					04/05/10	--	31.14	--	26.60					
					07/06/10	--	31.14	--	26.60					
					01/06/11	--	31.05	--	26.69					
					04/11/11	--	31.10	--	26.64					
					08/22/11	--	30.90	--	26.84					
					12/05/11	--	31.01	--	26.73					
					04/02/12	--	31.09	--	26.65					
					09/04/12	--	30.99	--	26.75					
10/08/12	--	30.97	--	26.77										
01MW80	Former Steam Cleaning Area	44.83	20	28	04/22/11	--	23.96	--	20.87					
					04/25/11	--	23.95	--	20.88					
					08/22/11	--	24.00	--	20.83					
					12/05/11	--	24.21	--	20.62					
					04/02/12	--	24.14	--	20.69					
					09/04/12	--	24.22	--	20.61					
01MW81	Former Steam Cleaning Area	45.86	19.5	28.5	10/08/12	--	24.27	--	20.56					
					04/25/11	--	21.35	--	24.51					
					08/22/11	--	--	--	--					
					12/05/11	--	21.78	--	24.08					
					04/02/12	--	21.68	--	24.18					
01MW82	Former Steam Cleaning Area	45.68	19	27	09/04/12	--	21.72	--	24.14					
					10/08/12	--	21.73	--	24.13					
					04/25/11	--	21.06	--	24.62					
					08/22/11	--	--	--	--					
					12/05/11	--	21.34	--	24.34					
04/02/12	--	21.25	--	24.43										
09/04/12	--	21.28	--	24.40										
10/08/12	--	21.27	--	24.41										
ASKO Hydraulic Property														
Intermediate Water-Bearing Zone														
01MW54	West of Barrel Incline	49.25	37	42	11/25/08	--	30.34	--	18.91					
					01/26/09	--	30.32	--	18.93					
					04/06/09 ⁽⁶⁾	--	29.96	--	19.29					
					07/06/09 ⁽⁶⁾	--	30.73	--	18.52					
					01/25/10 ⁽⁶⁾	--	30.13	--	19.12					
					04/05/10 ⁽⁶⁾	--	31.57	--	17.68					
					07/06/10 ⁽⁶⁾	--	30.02	--	19.23					
					01/06/11 ⁽⁶⁾	--	29.83	--	19.42					
					04/11/11 ⁽⁶⁾	--	29.96	--	19.29					
					08/22/11 ⁽⁶⁾	--	30.13	--	19.12					
					12/05/11	--	30.39	--	18.86					
					04/02/12	--	30.31	--	18.94					
					10/08/12	--	30.44	--	18.81					
					01MW57	Former Steam Cleaning Area	45.77	35.5	41	11/25/08	--	26.75	--	19.02
										01/26/09	--	26.73	--	19.04
04/06/09	--	26.57	--	19.20										
07/06/09	--	26.58	--	19.19										
01/25/10	--	26.43	--	19.34										
04/05/10	--	26.39	--	19.38										
07/06/10	--	26.42	--	19.35										
01/06/11	--	26.31	--	19.46										
04/11/11	--	26.48	--	19.29										
08/22/11	--	26.51	--	19.26										
12/05/11	--	26.72	--	19.05										
04/02/12	--	26.90	--	18.87										
10/08/12	--	26.85	--	18.92										



Table 7
Summary of Groundwater Elevations
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Soil Boring/ Well Identification	Well Location	Top of Casing Elevation ⁽¹⁾ (feet above MSL)	Depth to Top of Well Screen (feet approximate)	Depth to Bottom of Well Screen (feet approximate)	Date	Depth to LNAPL ⁽²⁾ (feet)	Depth to Groundwater ⁽²⁾ (feet)	LNAPL Thickness (feet)	Groundwater Elevation ⁽¹⁾ (feet above MSL)
ASKO Hydraulic Property									
Intermediate Water-Bearing Zone									
01MW76	West of Barrel Incline	45.79	35	40	04/11/11 ⁽⁶⁾	--	25.89	--	19.90
					08/22/11 ⁽⁶⁾	--	26.25	--	19.54
					12/05/11	--	26.30	--	19.49
					04/02/12	--	26.23	--	19.56
					10/08/12	--	26.45	--	19.34
01MW77	New Barrel Shed	50.3	36	41	04/11/11 ⁽⁶⁾	--	29.85	--	20.45
					08/22/11 ⁽⁶⁾	--	29.57	--	20.73
					12/05/11	--	30.07	--	20.23
					04/02/12	--	29.99	--	20.31
					10/08/12	--	29.66	--	20.64
01MW78	North of Former Rail Spurs	58.17	45	50	04/11/11 ⁽⁶⁾	--	37.77	--	20.40
					08/22/11 ⁽⁶⁾	--	37.45	--	20.72
					12/05/11	--	37.98	--	20.19
					04/02/12	--	37.92	--	20.25
					10/08/12	--	37.52	--	20.65
ASKO Hydraulic Property									
Deep Water-Bearing Zone									
01MW65	New Barrel Shed	50.42	52	62	04/06/09	--	34.15	--	16.27
					07/06/09	--	33.88	--	16.54
					01/25/10	--	33.88	--	16.54
					04/05/10	--	33.52	--	16.90
					07/06/10	--	33.90	--	16.52
					01/06/11	--	34.12	--	16.30
					04/11/11	--	34.02	--	16.40
					08/22/11	--	33.72	--	16.70
					12/05/11	--	34.43	--	15.99
					04/02/12	--	34.03	--	16.39
					10/08/12	--	33.94	--	16.48
West Waterfront Property									
Shallow Water-Bearing Zone									
02MW14	Parking Lot	30.97	4	15	11/25/08	--	11.16	--	19.81
					01/26/09	--	11.08	--	19.89
					04/06/09	--	11.77	--	19.20
					07/06/09	--	10.41	--	20.56
					01/25/10	--	8.48	--	22.49
					04/05/10	--	9.24	--	21.73
					07/06/10	--	10.09	--	20.88
					01/06/11	--	9.01	--	21.96
					04/11/11	--	8.94	--	22.03
					08/22/11	--	10.69	--	20.28
					12/05/11	--	10.85	--	20.12
					04/02/12	--	9.05	--	21.92
					10/08/12	--	11.24	--	19.73

NOTES:

On 8/22/11 LNAPL was encountered in well 01MW41 but could not be measured due to interference with probe; therefore the LNAPL thickness and groundwater elevation could not be calculated.

⁽¹⁾Initial elevation data for wells 01MW01 through 01MW29 obtained from the *Final Cleanup Action Plan* prepared by Foster Wheeler and dated May 2003. Foster Wheeler survey based on North American Vertical Datum of 1988. Additional elevations obtained from surveys completed by Axis Survey and Mapping or SoundEarth between January 23, 2009 and June 7, 2012, and based on North American Vertical Datum of 1988. The specific gravity for LNAPL is estimated at 0.80 for petroleum hydrocarbon mixtures.

⁽²⁾As measured from a fixed spot on the well casing rim.

⁽³⁾LNAPL thickness not reported by previous consultant.

⁽⁴⁾Estimate for LNAPL.

⁽⁵⁾Wells installed at 45 degree angle. Measurements based off of auger length, not actual depth.

⁽⁶⁾DNAPL measurements were conducted, however, DNAPL was not encountered.

-- = not applicable/not measured

AST = aboveground storage tank

DNAPL = dense nonaqueous-phase liquid

Dry = measurable groundwater not encountered in well

Encountered = sheen observed in well

HQ = headquarters

LNAPL = light nonaqueous-phase liquid

MSL = mean sea level



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW01	01MW-01	IT	--	09/28/99	--	<50.0	<1,000	<50.0	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
	01MW-01	FW	--	11/16/00	--	1,650	<500	75.2	0.924	1.46	<0.500	193	--	--	--	--
	01MW-01	FW	--	07/26/01	3.94	1,110	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	FW	--	10/01/01	3.55	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	FW	--	01/02/02	2.02	<250	<500	51.5	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	FW	--	04/02/02	2.84	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	FW	--	07/02/02	6.84	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01A	FW	--	10/02/02	6.37	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01B	FW	--	10/02/02	7.13	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01A	FW	--	01/01/03	7.33	<250	<500	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	--	--	--
	01MW-01B	FW	--	01/01/03	6.06	<250	<500	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	--	--	--
	01MW-01A	FW	--	04/01/03	5.57	429	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01B	FW	--	04/01/03	8.04	454	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	TetraTech	--	08/01/03	6.06	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	TetraTech	--	01/01/04	11.2	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01A	TetraTech	--	04/01/04	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01B	TetraTech	--	04/01/04	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	TetraTech	--	07/16/04	8.94	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-01	Landau	--	10/25/05	6.79	<272	<543	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01-MW-01-20060621	SoundEarth	LF	06/21/06	10.0	838	<500	<50	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	0.200	<250
	01MW01-20061212	SoundEarth	LF	12/12/06	1.4	570	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW01-20081103	SoundEarth	LF	11/03/08	13	--	--	--	--	--	--	--	--	--	--	--
	01MW01-20090128	SoundEarth	LF	01/28/09	14	150 ^g	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20090408	SoundEarth	LF	04/08/09	11	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20090706	SoundEarth	LF	07/06/09	16	160 ^g	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20091006	SoundEarth	LF	10/06/09	19	370	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20100127	SoundEarth	LF	01/27/10	15	310 ^g	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20100406	SoundEarth	LF	04/06/10	20	110 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20100712	SoundEarth	LF	07/12/10	14	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW01-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	130	20	24	1.5	11	--	--	--	--
01MW01-20101109	SoundEarth	LF	11/09/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
01MW01-20110106	SoundEarth	LF	01/06/11	0.73	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
01MW01-20110413	SoundEarth	LF	04/13/11	<0.219 ^l	110 ^g	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW01-20111212	SoundEarth	LF	12/12/11	<0.2 ^l	120	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW01-20120409	SoundEarth	LF	04/09/12	<0.2	140	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW01-20121015	SoundEarth	LF	10/15/12	0.38	<50	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW01-20130131	SoundEarth	LF	01/31/13	--	890 ^l	<250	510	8.3	4.6	5.2	29	--	--	--	--	
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW04	01MW-04	IT	--	09/28/99	--	1,320	<500	18,900	4,370	1,150	606	2,780	--	--	--	--
	01MW-04	FW	--	11/16/00	--	1,860	<500	7,930	71.2	402	570	2,840	--	--	--	--
	01MW-04	FW	--	07/27/01	--	1,790	<1,500	6,460	1,210	204	134	1,470	--	--	--	--
	01MW-04	FW	--	10/01/01	<0.500	398	<500	4,020	68.1	82.3	261	1,130	--	--	--	--
	01MW-04	FW	--	01/02/02	<0.500	<250	<500	5,920	<25.0	123	486	2,030	--	--	--	--
	01MW-04	FW	--	04/02/02	<0.500	<250	<500	840	<1.25	10.7	76	342	--	--	--	--
	01MW04	FW	--	07/02/02	<0.500	655	<500	6,630	22.8	78.0	341	1,440	--	--	--	--
	01MW-04	FW	--	07/02/02	<0.500	<250	<500	17,300	4,130	1,360	309	1,470	--	--	--	--
	01MW-04	FW	--	10/02/02	<0.500	<500	<500	--	--	--	--	--	--	--	--	--
	01MW-04	TetraTech	--	08/01/03	<0.500	1,900	<500	1,840	1,190	155	51.7	141	--	--	--	--
	01MW-04	TetraTech	--	07/15/04	--	333	<500	9,820	2,380	570	236	828	--	--	--	--
	01MW-04	Landau	--	10/25/05	--	<260	<521	2,400	142	19	217	489	--	--	--	--
	01-MW-04-20060621	SoundEarth	LF	06/21/06	--	428	<526	7,270	16.0	59.6	752	2,590	<1.00	<0.200	<0.200	<10,000
	01MW04-20061213	SoundEarth	LF	12/13/06	--	180	<250	230	4.4	1.6	3.4	36	<1	<1	<1	<1,000
	01MW04-20081103	SoundEarth	LF	11/03/08	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW04-20090129	SoundEarth	LF	01/29/09	<0.5	<50	<250	<100	<1	<1	3	5	--	--	--	--
	01MW04-20090707	SoundEarth	LF	07/07/09	<0.5	500 ^a	--	2,100	520	7	35	84	--	--	--	--
	01MW04-20091006	SoundEarth	LF	10/06/09	<0.5	480	<250	1,800	56	8	170	290	--	--	--	--
	01MW04-20100125	SoundEarth	LF	01/25/10	<0.5	97 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW04-20100407	SoundEarth	LF	04/07/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW04-20100713	SoundEarth	LF	07/13/10	<0.5	120 ^{(5)x}	<250 ⁽⁵⁾	690	<1	1.6	34	81	--	--	--	--
	01MW04-20110111	SoundEarth	LF	01/11/11	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	2.0	<1	<1	<3	--	--	--	--
	01MW04-20110413	SoundEarth	LF	04/13/11	<0.219 ^f	88 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW04-20111206	SoundEarth	LF	12/06/11	<0.2 ^l	170 ^a	<250	<100	3.4	<1	3.4	11	--	--	--	--	
01MW04-20120405	SoundEarth	LF	04/05/12	<0.2	62 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW04-20121012	SoundEarth	LF	10/12/12	<0.2	300 ^a	<250	750	170	1.3	34	13	--	--	--	--	
01MW04-20130130	SoundEarth	LF	01/30/13	<0.2	110 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW05	01MW05	FW	--	07/03/02	<0.500	2,710	<500	16,500	1,670	1,390	417	2,080	--	--	--	--
	--	TetraTech	--	10/01/03	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	TetraTech	--	01/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	TetraTech	--	04/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	TetraTech	--	07/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	TetraTech	--	11/17/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW-05	Landau	--	10/26/05	<0.495	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	06/20/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW05-20061115	SoundEarth	LF	11/15/06	<1	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	12/12/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/26/09	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/05/08	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/26/09	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW05-20090406	SoundEarth	--	04/06/09	--	820,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	270,000 ⁽⁸⁾	--	--	--	--	--	--	--	--
MTCM Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW05 (Continued)	--	SoundEarth	--	07/06/09	--	LNAPL										
	--	SoundEarth	--	01/25/10	--	LNAPL										
	--	SoundEarth	--	04/05/10	--	LNAPL										
	--	SoundEarth	--	07/06/10	--	LNAPL										
	--	SoundEarth	--	01/06/11	--	LNAPL										
	--	SoundEarth	--	04/11/11	--	LNAPL										
	--	SoundEarth	--	08/22/11	--	LNAPL										
	--	SoundEarth	--	12/05/11	--	LNAPL										
	--	SoundEarth	--	04/02/12	--	LNAPL										
	--	SoundEarth	--	10/08/12	--	LNAPL										
01MW06	01MW-06	FW	--	12/01/00	1.80	<250	<500	87.4	<1.08	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	FW	--	07/25/01	2.17	718	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	FW	--	10/01/01	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	FW	--	01/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	FW	--	04/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	FW	--	07/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	FW	--	10/02/02	--	--	--	--	--	--	--	--	--	--	--	--
	01MW-06	TetraTech	--	08/01/03	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	TetraTech	--	07/01/04	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-06	Landau	--	10/25/05	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01-MW-06-20060620	SoundEarth	LF	06/20/06	--	422	<515	50	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	<0.200	<250
	01MW06-20061212	SoundEarth	LF	12/12/06	--	170	<250	62	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW06-20090128	SoundEarth	LF	01/28/09	--	270 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20090407	SoundEarth	LF	04/07/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20090706	SoundEarth	LF	07/06/09	--	120 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20100125	SoundEarth	LF	01/25/10	--	150 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20100407	SoundEarth	LF	04/07/10	--	120 ^{(5)x}	<250 ⁽⁵⁾	<100	1	<1	<1	<3	--	--	<1	--
	01MW06-20100713	SoundEarth	LF	07/13/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20110110	SoundEarth	LF	01/10/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20110413	SoundEarth	LF	04/13/11	--	330 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20111206	SoundEarth	LF	12/06/11	--	58 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20120405	SoundEarth	LF	04/05/12	--	350 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW06-20121012	SoundEarth	LF	10/12/12	--	55 ^f	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW08	01MW-08	FW	--	12/01/00	--	404	<500	<50.0	<5.00	<0.500	<0.500	<1.00	--	--	--
01MW-08		FW	--	07/26/01	--	662	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-08		FW	--	10/02/01	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-08		FW	--	01/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-08		FW	--	04/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-08		FW	--	07/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-08		FW	--	10/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-08		FW	--	01/01/03	--	<250	<500	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	--	--	--
01MW-08		FW	--	04/01/03	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
MTC A Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW08 (Continued)	01MW-08	TetraTech	--	08/01/03	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	TetraTech	--	01/01/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	TetraTech	--	04/01/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	TetraTech	--	07/15/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	TetraTech	--	11/17/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	TetraTech	--	01/05/05	--	<250	<500	<50.0	0.582	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	Landau	--	04/25/05	--	833	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	Landau	--	07/26/05	--	422	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	
	01MW-08	Landau	--	10/25/05	--	<0.549	<240	<481	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	
	01-MW-08-20060620	SoundEarth	LF	06/20/06	--	631	<526	<50	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	<0.200	<250
	--	SoundEarth	LF	12/12/06	--	--	--	--	--	--	--	--	--	--	--	
01MW08-20090129	SoundEarth	LF	01/29/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--		
01MW12	01MW-12	FW	--	12/05/00	--	1,070	<500	802	98.4	11.0	17.4	24.6	--	--	--	
	01MW-12	FW	--	07/27/01	--	6,500	<1,500	1,350	482	8.84	14.0	26.4	--	--	--	
	01MW-12	FW	--	10/02/01	--	1.68	731	<500	1,300	385	9.22	14.0	24.8	--	--	
	01MW-12	FW	--	01/02/02	--	<0.500	<250	<500	1,130	360	8.11	11.7	22.1	--	--	
	01MW-12	FW	--	04/02/02	--	<0.500	<250	<500	1,600	545	7.37	11.9	21.7	--	--	
	01MW-12	FW	--	07/02/02	--	<0.500	<250	<500	1,720	671	9.65	15.8	24.9	--	--	
	01MW-12	FW	--	10/02/02	--	<250	<500	1,710	619	7.7	9.31	18.0	--	--	--	
	01MW-12	FW	--	01/01/03	--	<250	<500	1,410	295	<10.0	11.8	<30.0	<50.0	--	--	
	01MW-12	FW	--	04/01/03	--	4,220	<500	1,480	417	5.89	10.3	17.1	--	--	--	
	01MW-12	TetraTech	--	08/01/03	--	4,090	<500	1,430	583	6.68	11.7	17.4	--	--	--	
	01MW-12	TetraTech	--	01/01/04	--	<250	<500	1,130	336	6.10	12.0	17.2	--	--	--	
	01MW-12	TetraTech	--	04/01/04	--	471	<500	1,330	441	6.24	9.62	14.6	--	--	--	
	01MW-12	TetraTech	--	07/20/04	--	<250	<500	1,700	485	5.9	11.3	15.8	--	--	--	
	01MW-12	TetraTech	--	11/17/04	--	<250	<500	1,320	276	6.53	16.1	20.5	--	--	--	
	01MW-12	TetraTech	--	01/05/05	--	294	<500	1,090	195	5.48	14.8	13	--	--	--	
	01MW-12	Landau	--	04/25/05	--	5,760	<250	1,650	372	4.36	15.4	13.5	--	--	--	
	01MW-12	Landau	--	07/26/05	--	7,140	1,250	1,800	419	6.87	16.3	21.2	--	--	--	
	01MW-12	Landau	--	10/25/05	--	<0.588	<248	<495	2,070	460	7.83	16.2	20.4	--	--	
	01-MW-12-20060621	SoundEarth	LF	06/21/06	--	7,140	1,110	1,320	328	6.19	15.4	14.2	1.18	<0.200	65.5	<2,500
	01MW12-20061213	SoundEarth	LF	12/13/06	--	5,400	660 ^x	1,000	230	<10	<10	<30	<10	<10	<10	<10,000
	01MW12-20081103	SoundEarth	LF	11/03/08	--	3.3 ¹	--	--	--	--	--	--	--	--	--	
	01MW12-20090128	SoundEarth	LF	01/28/09	--	<0.5	3,800 ^x	650 ^y	510	32	5	5	7	--	--	
	01MW12-20090408	SoundEarth	LF	04/08/09	--	<0.5	62	<250	280	36	2	1	4	--	--	
	01MW12-20091006	SoundEarth	LF	10/06/09	--	<0.5	4,700	710 ^y	650	47	7	22	13	--	--	
	01MW12-20100407	SoundEarth	LF	04/07/10	--	<0.5	--	--	--	--	--	--	--	--	--	
	01MW12-20100714	SoundEarth	LF	07/14/10	--	<0.5	--	--	--	--	--	--	--	--	--	
	01MW12-20110107	SoundEarth	LF	01/07/11	--	<0.5	--	--	--	--	--	--	--	--	--	
	01MW12-20110412	SoundEarth	LF	04/12/11	--	<0.219 ^l	--	--	--	--	--	--	--	--	--	
	01MW12-20111220	SoundEarth	LCG	12/20/11	--	<0.2 ^l	--	--	--	--	--	--	--	--	--	
	01MW12-20120412	SoundEarth	LCG	04/12/12	--	<0.2 ^{1j}	--	--	--	--	--	--	--	--	--	
01MW12-20121016	SoundEarth	LF	10/16/12	--	<0.2	--	--	--	--	--	--	--	--	--		
MTCNA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW13	01MW-13	FW	--	12/05/00	--	3,940	513	254	<0.500	0.694	<0.817	<1.23	--	--	--	--
	01MW-13	FW	--	07/27/01	--	3,900	<1,500	221	1.26	<0.500	<0.500	2.31	--	--	--	--
	01MW-13	FW	--	10/02/01	2.73	1,290	<500	207	1.28	<0.500	<0.500	2.06	--	--	--	--
	01MW-13	FW	--	01/02/02	<0.500	<250	<500	160	<0.500	<0.500	<0.500	1.62	--	--	--	--
	01MW-13	FW	--	04/02/02	<0.500	<250	<500	204	0.978	<0.500	0.533	2.00	--	--	--	--
	01MW-13	FW	--	07/02/02	<0.500	<250	<500	304	1.19	<0.500	<0.500	2.86	--	--	--	--
	01MW-13	FW	--	10/02/02	--	<250	<500	149	<0.500	<0.500	<0.500	1.55	--	--	--	--
	01MW-13	FW	--	01/01/03	--	<250	<500	246	<1.00	<1.00	<1.00	<3.00	<5.00	--	--	--
	01MW-13	FW	--	04/01/03	--	688	<500	199	0.771	<0.500	<0.500	1.95	--	--	--	--
	01MW-13	TetraTech	--	08/01/03	--	2,600	<500	137	0.520	<0.500	<0.500	1.77	--	--	--	--
	01MW-13	TetraTech	--	01/01/04	--	<250	<500	167	0.775	<0.500	<0.500	1.85	--	--	--	--
	01MW-13	TetraTech	--	04/01/04	--	257	<500	325	2.23	0.730	2.14	3.28	--	--	--	--
	01MW-13	TetraTech	--	07/20/04	--	<250	<500	314	1.41	<0.500	<0.500	2.54	--	--	--	--
	01MW-13	TetraTech	--	11/17/04	--	<250	<500	391	1.71	<0.500	0.74	2.99	--	--	--	--
	01MW-13	TetraTech	--	01/05/05	--	<250	<500	376	1.99	<0.500	1.03	1.24	--	--	--	--
	01MW-13	Landau	--	04/25/05	--	3,380	<500	374	2.28	<0.500	1.49	2.51	--	--	--	--
	01MW-13	Landau	--	07/26/05	--	4,700	1,230	522	2.08	<0.500	0.86	3.69	--	--	--	--
	01MW-13	Landau	--	10/24/05	<0.500	<245	<490	363	1.38	<0.500	<0.500	2.26	--	--	--	--
	01-MW-13-20060621	SoundEarth	LF	06/21/06	--	4,940	964	224	1.65	0.27	0.30	<0.750	<1.00	<0.200	3.10	<250
	01MW13-20061212	SoundEarth	LF	12/12/06	--	1,800	260 ^x	51	<1	<1	<1	<3	<1	<1	<1	<1,000
01MW13-20090127	SoundEarth	LF	01/27/09	<0.5	69 ^x	<250	230	<1	3	<1	<3	--	--	--	--	
01MW13-20090408	SoundEarth	LF	04/08/09	<0.5	<50	<250	150	<1	<1	<1	<3	--	--	--	--	
01MW13-20091006	SoundEarth	LF	10/06/09	<0.5	2,700	480 ^y	<100	<1	<1	<1	<3	--	--	--	--	
01MW13-20100707	SoundEarth	LF	07/07/10	<0.5	62 ^{(5),x}	<250 ⁽⁵⁾	330	<1	1.2	1.9	<3	--	--	--	--	
01MW13-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
01MW13-20110107	SoundEarth	LF	01/07/11	0.50	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
01MW13-20110411	SoundEarth	LF	04/11/11	<0.219 ^g	1,400^x	320 ^g	<100	<1	<1	<1	<3	--	--	--	--	
01MW13-20111209	SoundEarth	LF	12/09/11	<0.2 ^l	2,300^x	390 ^g	<100	<1	<1	<1	<3	--	--	--	--	
01MW13-20120411	SoundEarth	LF	04/11/12	<0.2	1,700	470 ^x	<100	<1	<1	<1	<3	--	--	--	--	
01MW13-20121015	SoundEarth	LF	10/15/12	<0.2	2,900^x	440 ^x	<100	<1	<1	<1	<3	--	--	--	--	
01MW14	--	FW	--	07/02/01	--	LNAPL										
Decommissioned 2002																
01MW17	01MW-17	FW	--	07/27/01	<0.500	884	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	FW	--	10/02/01	1.65	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	FW	--	01/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	FW	--	04/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	FW	--	07/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	FW	--	10/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	FW	--	01/01/03	--	<250	<500	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	--	--	--
	01MW-17	FW	--	04/01/03	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	TetraTech	--	08/01/03	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-17	TetraTech	--	01/01/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
01MW-17	TetraTech	--	04/01/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
01MW-17	TetraTech	--	07/20/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
MTCA Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)												
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾	
Bulk Terminal Property																	
Shallow Water-Bearing Zone																	
01MW17 (continued)	01MW-17	TetraTech	--	11/17/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
	01MW-17	TetraTech	--	01/05/05	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
	01MW-17	Landau	--	04/25/05	--	472	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
	01MW-17	Landau	--	07/26/05	--	490	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
	01MW-17	Landau	--	10/24/05	--	<243	<485	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	
	01-MW-17-20060621	SoundEarth	LF	06/21/06	--	498	<490	<50	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	<0.200	<250	
	01MW17-20061212	SoundEarth	LF	12/12/06	--	310	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000	
	01MW17-20090127	SoundEarth	LF	01/27/09	--	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW17-20090408	SoundEarth	LF	04/08/09	--	<0.5	<60	<300	<100	<1	<1	<1	<3	--	--	--	--
	01MW17-20090707	SoundEarth	LF	07/07/09	--	<0.5	200 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW17-20091007	SoundEarth	LF	10/07/09	--	<0.5	200 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW17-20100125	SoundEarth	LF	01/25/10	--	<0.5	220 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW17-20100406	SoundEarth	LF	04/06/10	--	<0.5	<76 ⁽⁵⁾	<380 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW17-20100707	SoundEarth	LF	07/07/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
	01MW17-20110106	SoundEarth	LF	01/06/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
	01MW17-20110411	SoundEarth	LF	04/11/11	--	210 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW17-20111208	SoundEarth	LF	12/08/11	--	290 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--		
01MW17-20120409	SoundEarth	LF	04/09/12	--	260	<250	<100	<1	<1	<1	<3	--	--	--	--		
01MW17-20121012	SoundEarth	LF	10/12/12	--	360 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--		
01MW18	01MW18	FW	--	07/03/02	<0.500	2,120	<500	22,300	3,000	1,360	593	3,180	--	--	--	--	
	01MW-18	FW	--	07/03/02	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW-18	TetraTech	--	08/01/03	<0.500	1,120	<500	7,160	1,410	276	272	1,010	--	--	--	--	
	01MW-18	TetraTech	--	07/15/04	<0.500	676	<500	10,700	1,570	124	283	1,360	--	--	--	--	
	01MW-18	Landau	--	10/25/05	--	845	<495	13,900	2,060	102	421	1,780	--	--	--	--	
	01-MW-18-20060620	SoundEarth	LF	06/20/06	--	1,480	<515	9,460	1,870	85	318	1,190	<1.00	<0.200	0.39	<250	
	01MW18-20061213	SoundEarth	LF	12/13/06	<0.25	2,300	<250	8,100	1,200	55	210	728	<50	<50	<50	<50,000	
	01MW18-20090129	SoundEarth	LF	01/29/09	<0.5	1,800	<250	6,700	710	55	200	620	--	--	--	--	
01MW18-20090408	SoundEarth	LF	04/08/09	<0.5	1,000 ^a	<250	2,800	230	30	87	250	--	--	--	--		
01MW19	01MW19	FW	--	07/02/02	<0.500	597	<500	341	2.94	24.4	14.0	58.2	--	--	--	--	
	01MW-19	FW	--	07/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<1.00	--	--	--	--		
	01MW-19	FW	--	08/01/03	<0.500	<250	<500	15,800	3,070	1,390	562	3,160	--	--	--	--	
	01MW-19	TetraTech	--	07/15/04	<0.500	1,460	<500	19,900	2,610	945	522	3,190	--	--	--	--	
	01MW-19	Landau	--	10/25/05	--	479	<500	25,700	3,930	568	894	4,610	--	--	--	--	
	01-MW-19-20060620	SoundEarth	LF	06/20/06	--	2,460	<510	30,200	6,400	916	1,030	5,260	<1.00	<0.200	0.65	<250	
	01MW19-20061213	SoundEarth	LF	12/13/06	<0.25	3,700	620	26,000	4,400	<100	750	<2,900	<100	<100	<100	<100,000	
	01MW19-20090129	SoundEarth	LF	01/29/09	--	1,000	2,500	13,000	5,800	17	550	650	--	--	<1	--	
	01MW19-20090408	SoundEarth	LF	04/08/09	--	1,800 ^a	<250	18,000	4,300	61	590	2,400	--	--	<1	--	
	01MW19-20090706	SoundEarth	LF	07/06/09	--	3,700 ^a	690 ^b	26,000	5,000	220	800	2,800	--	--	<1	--	
MTCA Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE	



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW19 (Continued)	01MW19-20100128	SoundEarth	LF	01/28/10	--	2,300 ^x	2,300 ^x	22,000	4,200	65	730	2,800	--	--	<1	--
	01MW19-20100407	SoundEarth	LF	04/07/10	--	1,700 ^{(5),x}	<250 ⁽⁵⁾	26,000	4,200	74	860	3,200	--	--	<1	--
	01MW19-20100713	SoundEarth	LF	07/13/10	--	3,100 ^{(5),x}	4,100 ⁽⁵⁾	33,000	4,500	120	780	2,800	--	--	<1	--
	01MW19-20110111	SoundEarth	LF	01/11/11	--	1,400 ^{(5),x}	<250 ⁽⁵⁾	22,000	4,100	<100	800	3,100	--	--	<1	--
	01MW19-20110413	SoundEarth	LF	04/13/11	--	4,000 ^x	510 ^x	28,000	4,600	<100	960	3,200	--	--	<1	--
	01MW19-20111207	SoundEarth	LF	12/07/11	--	2,500 ^x	290 ^x	22,000	4,500	<100	700	2,000	--	--	<1	--
	01MW19-20120409	SoundEarth	LF	04/09/12	--	2,400 ^x	490 ^x	18,000	2,900	48	720	2,100	--	--	<1	--
01MW19-20121015	SoundEarth	LF	10/15/12	--	2,400 ^x	--	16,000	3,200	<100	700	1,900	--	--	<1	--	
01MW20	01MW-20	FW	--	07/02/02	<0.500	2,250	<500	31,500	3,190	2,880	768	4,500	--	--	--	--
	01MW-20	FW	--	07/02/02	<0.500	<250	<500	16,700	1,640	1,390	468	2,840	--	--	--	--
	01MW-20	TetraTech	--	08/01/03	<0.500	<250	<500	132	4.74	1.08	6.67	6.85	--	--	--	--
	01MW-20	TetraTech	--	07/16/04	<0.500	<250	<500	573	13.2	3.86	21.9	29.5	--	--	--	--
	01MW-20	Landau	--	10/25/05	--	<272	<543	378	10.8	2.88	14.3	24.5	--	--	--	--
	01-MW-20-20060620	SoundEarth	LF	06/20/06	--	770	<500	1,740	26.5	9.44	81.2	306	<1.00	<0.200	<0.200	<250
	01MW20-20061213	SoundEarth	LF	12/13/06	<0.25	600	300	1,300	17	8.8	46	130	<1	<1	<1	<1,000
	01MW20-20081103	SoundEarth	LF	11/03/08	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW20-20090129	SoundEarth	LF	01/29/09	--	280	<250	1,600	13	8	66	160	--	--	<1	--
	01MW20-20090408	SoundEarth	LF	04/08/09	--	340 ^f	<250	1,100	26	7	75	93	--	--	--	--
01MW20-20100128	SoundEarth	LF	01/28/10	<0.5	640 ^f	<250	1,300	31	9	83	140	--	--	--	--	
01MW21	01MW-21	FW	--	01/01/03	24.2	1,640	<500	743	<1.00	<1.00	7.26	10.3	<5.00	--	--	--
	01MW-21	FW	--	04/01/03	26.8	4,470	<500	930	1.03	<0.500	22.1	1.66	--	--	--	--
	01MW-21	TetraTech	--	08/01/03	30.4	3,210	<500	592	0.828	<0.500	11.1	1.34	--	--	--	--
	01MW-21	TetraTech	--	07/20/04	3.51	429	<500	986	0.858	<0.500	10.6	1.32	--	--	--	--
	01MW-21	Landau	--	10/25/05	<0.495	570	<481	849	1.74	<0.500	<0.500	1.77	--	--	--	--
	01-MW-21-20060621	SoundEarth	LF	06/21/06	--	10,300	1,860	806	1.16	<0.200	1.02	1.75	<1.00	<0.200	0.76	<250
	01MW21-20061213	SoundEarth	LF	12/13/06	<0.25	6,000	590 ^x	860	<1	<1	<1	<3	<1	<1	2.0	<1,000
	01MW21-20081103	SoundEarth	LF	11/03/08	4.2 ^f	--	--	--	--	--	--	--	--	--	--	--
	01MW21-20090128	SoundEarth	LF	01/28/09	10	13,000 ^f	1,800 ^f	100	<1	<1	<1	<3	--	--	--	--
	01MW21-20090408	SoundEarth	LF	04/08/09	6.3	120	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW21-20090806	SoundEarth	LF	08/06/09	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW21-20091007	SoundEarth	LF	10/07/09	<0.5	19,000 ^f	1,200	<100	<1	<1	<1	<1	--	--	--	--
	01MW21-20100126	SoundEarth	LF	01/26/10	54	9,900 ^f	1,400 ^f	320	<1	<1	<1	<3	--	--	--	--
	--	SoundEarth	--	04/05/10	--	LNAPL		--	--	--	--	--	--	--	--	--
	01MW21-20100427	SoundEarth	LF	04/27/10	32	--	--	--	--	--	--	--	--	--	--	--
	01MW21-20100707	SoundEarth	LF	07/07/10	<0.5	310 ^{(5),x}	<250 ⁽⁵⁾	440	<1	<1	<1	<3	--	--	--	--
	01MW21-20100922	SoundEarth	LF	09/22/10	--	190 ⁽⁵⁾	<250 ⁽⁵⁾	380	<1	<1	<1	<3	--	--	--	--
	01MW21-20101029	SoundEarth	LF	10/29/10	<0.5	100 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW21-20110107	SoundEarth	LCG	01/07/11	0.74	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW21-20110131	SoundEarth	LF	01/31/11	<0.5	--	--	--	--	--	--	--	--	--	--	--
01MW21-20110412	SoundEarth	LF	04/12/11	10	6,200	960 ^x	540 ^x	<1	<1	<1	<3	--	--	--	--	
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



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TOC Holdings Co. Facility No. 01-600
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Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW22	01MW-22	FW	--	01/01/03	400	1,570	<500	294	11	<1.00	<1.00	<3.00	<5.00	--	--	--
	01MW-22	TetraTech	--	08/01/03	160	5,080	1,320	892	73.2	1.77	8.44	12	--	--	--	--
	--	TetraTech	--	10/01/03	--	LNAPL			--	--	--	--	--	--	--	--
	--	TetraTech	--	01/01/04	--	LNAPL			--	--	--	--	--	--	--	--
	--	TetraTech	--	04/01/04	--	LNAPL			--	--	--	--	--	--	--	--
	01MW-22	TetraTech	--	07/20/04	191	1,090	<500	1,340	73.5	0.943	4.71	10.2	--	--	--	--
	--	TetraTech	--	11/17/04	--	LNAPL			--	--	--	--	--	--	--	--
	01MW-22	Landau	--	10/25/05	273	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	06/20/06	--	LNAPL			--	--	--	--	--	--	--	--
	01MW22-20061115	SoundEarth	LF	11/15/06	64	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	12/12/06	--	LNAPL			--	--	--	--	--	--	--	--
	01MW22-20081008	SoundEarth	LF	10/08/08	--	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	04/06/09	--	LNAPL			--	--	--	--	--	--	--	--
	01MW22-20090717	SoundEarth	LCG	07/17/09	17	LNAPL			--	--	--	--	--	--	--	--
	01MW22-20091007	SoundEarth	LCG	10/07/09	47	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	LNAPL			--	--	--	--	--	--	--	--
01MW22-20100407	SoundEarth	LCG	04/07/10	25	LNAPL			--	--	--	--	--	--	--	--	
01MW22-20100714	SoundEarth	LCG	07/14/10	14	LNAPL			--	--	--	--	--	--	--	--	
01MW22-20110107	SoundEarth	LF	01/07/11	<0.5	--	--	--	--	--	--	--	--	--	--	--	
01MW22-20110415	SoundEarth	LCG	04/15/11	24	--	--	--	--	--	--	--	--	--	--	--	
01MW23	01MW-23	FW	--	04/01/03	198	--	--	--	--	--	--	--	--	--	--	
	01MW-23	TetraTech	--	07/20/04	350	540	<500	4,620	917	10.0	61.4	139	--	--	--	
	01MW-23	Landau	--	10/26/05	19.80	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	06/20/06	--	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	12/12/06	--	LNAPL			--	--	--	--	--	--	--	
	01MW23-20081008	SoundEarth	LF	10/08/08	--	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	04/06/09	--	LNAPL			--	--	--	--	--	--	--	
	01MW23-20090717	SoundEarth	LCG	07/17/09	<0.5	LNAPL			--	--	--	--	--	--	--	
	01MW23-20091006	SoundEarth	LCG	10/06/09	<0.5	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	01/25/10	--	LNAPL			--	--	--	--	--	--	--	
	01MW23-20100407	SoundEarth	LCG	04/07/10	0.54	740,000 ⁽⁸⁾	95,000 ⁽⁸⁾ x	110,000 ⁽⁸⁾	--	--	--	--	--	--	--	
	01MW23-20100708	SoundEarth	--	07/08/10	--	LNAPL			<50 ⁽⁸⁾	<50 ⁽⁸⁾	220 ⁽⁸⁾	76 ⁽⁸⁾	--	--	--	
	01MW23-20100714	SoundEarth	LCG	07/14/10	<0.5	LNAPL			--	--	--	--	--	--	--	
	01MW23-20110110	SoundEarth	LCG	01/10/11	<0.5	LNAPL			--	--	--	--	--	--	--	
	01MW23-20110412	SoundEarth	LCG	04/12/11	2.2	LNAPL			--	--	--	--	--	--	--	
	01MW23-20111220	SoundEarth	LCG	12/20/11	0.28 ^f	--	--	--	--	--	--	--	--	--	--	
01MW23-20120410	SoundEarth	LCG	04/10/12	0.28	LNAPL			--	--	--	--	--	--	--		
MTCA Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



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 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
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 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW24	01MW-24	FW	--	01/01/03	222	6,130	<500	19,800	5,400	<50.0	211	827	<5.00	--	--	--
	--	TetraTech	--	10/01/03	--	LNAPL			--	--	--	--	--	--	--	--
	--	TetraTech	--	01/01/04	--	LNAPL			--	--	--	--	--	--	--	--
	--	TetraTech	--	04/01/04	--	LNAPL			--	--	--	--	--	--	--	--
	01MW-24	TetraTech	--	07/20/04	<0.500	837	<500	18,400	6,750	35.0	261	816	--	--	--	--
	--	TetraTech	--	11/17/04	--	LNAPL			--	--	--	--	--	--	--	--
	01MW-24	Landau	--	10/26/05	<0.476	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	06/20/06	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	--
	--	SoundEarth	--	12/12/06	--	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/05/08	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/09	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	--
	--	SoundEarth	--	04/06/09	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	--
	01MW24-20090717	SoundEarth	LCG	07/17/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW24-20091006	SoundEarth	LCG	10/06/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	--
	--	SoundEarth	--	04/05/10	--	LNAPL			--	--	--	--	--	--	--	--
	01MW24-20100715	SoundEarth	LCG	07/15/10	0.62	LNAPL			--	--	--	--	--	--	--	--
--	SoundEarth	--	09/22/10	--	LNAPL			--	--	--	--	--	--	--	--	
01MW24-20111208	SoundEarth	LF	12/08/11	<0.2 ¹	--	--	--	--	--	--	--	--	--	--	--	
01MW24-20120411	SoundEarth	LF	04/11/12	<0.2	--	--	--	--	--	--	--	--	--	--	--	
01MW25	01MW-25	FW	--	01/01/03	<75.0	--	--	--	--	--	--	--	--	--	--	
	01MW-25	TetraTech	--	08/01/03	181	13,000	1,670	15,700	6,670	<50.0	278	738	--	--	--	
	01MW-25	TetraTech	--	07/01/04	--	LNAPL			--	--	--	--	--	--	--	
	01MW-25	Landau	--	10/26/05	<0.526	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	06/20/06	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	
	--	SoundEarth	--	12/12/06	--	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	09/05/08	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	
	--	SoundEarth	--	01/25/09	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	
	--	SoundEarth	--	04/06/09	--	Not sampled; wellhead submerged			--	--	--	--	--	--	--	
	01MW25-20090717	SoundEarth	LCG	07/17/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW25-20091006	SoundEarth	LCG	10/06/09	<0.5	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	01/25/10	--	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	04/05/10	--	LNAPL			--	--	--	--	--	--	--	
	01MW25-20100715	SoundEarth	LCG	07/15/10	0.86	LNAPL			--	--	--	--	--	--	--	
	--	SoundEarth	--	09/22/10	--	LNAPL			--	--	--	--	--	--	--	
	01MW25-20111212	SoundEarth	LF	12/12/11	<0.2	--	--	--	--	--	--	--	--	--	--	--
	01MW25-20120412	SoundEarth	LF	04/12/12	2.3	--	--	--	--	--	--	--	--	--	--	--
01MW25-20120710	SoundEarth	LF	07/10/12	0.33	--	--	--	--	--	--	--	--	--	--	--	
MTC Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW26	01MW-26	FW	--	01/01/03	33.2	1,380	<500	4,180	352	87.4	45.3	413	<5.00	--	--	--
	01MW-26	FW	--	04/01/03	4.08	967	<500	228	228	11.5	20.2	5.54	--	--	--	--
	01MW-26	TetraTech	--	08/01/03	2.34	1,400	<500	119	119	1.17	6.12	3.39	--	--	--	--
	01MW-26	TetraTech	--	07/16/04	40.5	<250	<500	137	137	0.706	4.92	3.56	--	--	--	--
	01MW-26A	TetraTech	--	11/17/04	20.3	<250	<500	1,130	131	6.94	55.0	38.6	--	--	--	--
	01MW-26B	TetraTech	--	11/17/04	20.9	<250	<500	1,120	143	7.83	60.2	38.4	--	--	--	--
	01MW-26	TetraTech	--	01/05/05	21.3	296	<500	1,050	98.6	6.16	40.1	45.4	--	--	--	--
	01MW-26	TetraTech	--	01/05/05	15.7	<250	<500	976	96.7	6.14	39.5	29.8	--	--	--	--
	01MW-26	Landau	--	04/25/05	16.9	1,880	<500	827	74.5	5.51	23.8	33.0	--	--	--	--
	01MW-26	Landau	--	07/26/05	22.1	1,960	561	1,280	92.6	10.5	43.4	88.6	--	--	--	--
	01MW-26	Landau	--	10/25/05	9	<275	<549	1,290	125	7.7	44.5	79.7	--	--	--	--
	01-MW-26-20060621	SoundEarth	LF	06/21/06	11.0	2,230	<472	707	95.6	4.89	23.4	30.4	<1.00	<0.200	1.20	<250
	01MW26-20061212	SoundEarth	LF	12/12/06	--	2,900	420 ^g	1,200	47	5.6	25	82	<1	<1	1.3	<1,000
	01MW26-20081103	SoundEarth	LF	11/03/08	2.5	--	--	--	--	--	--	--	--	--	--	--
	01MW26-20090127	SoundEarth	LF	01/27/09	<0.5	1,500 ^x	<250	1,700	140	17	42	120	--	--	--	--
	01MW26-20090408	SoundEarth	LF	04/08/09	<0.5	540	<250	1,100	84	10	27	79	--	--	--	--
	01MW26-20091009	SoundEarth	LF	10/09/09	1.00	1,700 ^x	<250	460	53	4	15	22	--	--	--	--
	01MW26-20100406	SoundEarth	LF	04/06/10	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW26-20100712	SoundEarth	LF	07/12/10	1.9	--	--	--	--	--	--	--	--	--	--	--
	01MW26-20100922	SoundEarth	LF	09/22/10	--	2,100 ^{(5),x}	<250 ⁽⁵⁾	16,000	620	1,100	300	2,300	--	--	--	--
01MW26-20110107	SoundEarth	LF	01/07/11	<0.5	--	--	--	--	--	--	--	--	--	--	--	
01MW26-20110414	SoundEarth	LCG	04/14/11	<0.219 ^g	--	--	--	--	--	--	--	--	--	--	--	
01MW26-20111212	SoundEarth	LF	12/12/11	<0.2 ^l	--	--	--	--	--	--	--	--	--	--	--	
01MW26-20120410	SoundEarth	LF	04/10/12	<0.2	--	--	--	--	--	--	--	--	--	--	--	
01MW27	01MW-27	FW	--	01/01/03	46.4	330	<500	11,300	4,230	211	68.0	158	<5.00	--	--	--
	01MW-27	FW	--	04/01/03	56.9	1,980	<500	15,500	6,090	227	88.1	197	--	--	--	--
	01MW-27	TetraTech	--	08/01/03	79.4	3,170	<500	14,800	6,180	53.0	73.5	<100	--	--	--	--
	01MW-27	TetraTech	--	07/16/04	50.7	<250	<500	10,900	6,220	43.9	70.4	50	--	--	--	--
	01MW-27	Landau	--	10/25/05	--	<250	<500	14,600	5,600	57.2	71.2	79.7	--	--	--	--
	01-MW-27-20060621	SoundEarth	LF	06/21/06	29.4	4,070	550	15,200	8,120	299	179	484	<1.00	1.14	4.11	<2,500
	01MW27-20061212	SoundEarth	LF	12/12/06	--	4,100	380 ^g	23,000	8,800	220	180	450	<1	1.40	6.0	<1,000
	01MW27-20081103	SoundEarth	LF	11/03/08	32	--	--	--	--	--	--	--	--	--	--	--
	01MW27-20090127	SoundEarth	LF	01/27/09	5.1	1,900 ^{(5),x}	<250	33,000	13,000	370	290	800	--	--	--	--
	01MW98-20090127 (DUP)	SoundEarth	LF	01/27/09	5.2	1,600 ^{(5),x}	<250	33,000	13,000	360	290	780	--	--	--	--
	01MW27-20090408	SoundEarth	LF	04/08/09	1.3	1,500 ^x	<250	25,000	10,000	410	150	480	--	--	--	--
	01MW96-20090408 (DUP)	SoundEarth	LF	04/08/09	1.2	1,400 ^x	<250	24,000	10,000	410	150	470	--	--	--	--
	01MW27-20090706	SoundEarth	LF	07/06/09	22	7,900	740 ^y	29,000	12,000	<100	110	<300	--	--	--	--
	01MW99-20090706 (DUP)	SoundEarth	LF	07/06/09	20	7,700	790 ^y	29,000	12,000	<100	100	<300	--	--	--	--
	01MW27-20091006	SoundEarth	LF	10/06/09	24	4,600	460 ^y	24,000	8,800	120	120	300	--	--	--	--
	01MW99-20091006 (DUP)	SoundEarth	LF	10/06/09	25	4,600	480 ^y	25,000	9,000	130	130	310	--	--	--	--
	01MW27-20100127	SoundEarth	LF	01/27/10	0.60	4,800 ^{dv}	<500 ^{dv}	27,000	8,300	220	130	390	--	--	--	--
	01MW96-20100127 (DUP)	SoundEarth	LF	01/27/10	0.78	5,000 ^x	700 ^y	25,000	9,100	250	140	420	--	--	--	--
	01MW27-20100407	SoundEarth	LF	04/07/10	0.73	1,200 ^{(5),x}	<250 ⁽⁵⁾	29,000	9,400	250	160	510	--	--	--	--
	01MW96-20100407 (DUP)	SoundEarth	LF	04/07/10	0.77	1,200 ^{(5),x}	<250 ⁽⁵⁾	29,000	9,400	240	160	520	--	--	--	--
01MW27-20100712	SoundEarth	LF	07/12/10	29	870 ^{(5),x}	<250 ⁽⁵⁾	29,000	7,500	170	110	400	--	--	--	--	
01MW96-20100712 (DUP)	SoundEarth	LF	07/12/10	32	800 ^{(5),x}	<250 ⁽⁵⁾	31,000	8,000	190	140	490	--	--	--	--	
MTCA Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW27 (continued)	01MW27-20100922	SoundEarth	LF	09/22/10	--	770 ^{(5),x}	<250 ⁽⁵⁾	4,900	13,000	510	230	630	--	--	--	--
	01MW96-20100922 (DUP)	SoundEarth	LF	09/22/10	--	790 ^{(5),x}	<250 ⁽⁵⁾	5,200	14,000	540	240	680	--	--	--	--
	01MW27-20101117	SoundEarth	LF	11/17/10	13	1,400 ^{(5),x}	<250 ⁽⁵⁾	6,300	2,400	140	130	300	--	--	--	--
	01MW27-20110106	SoundEarth	LCG	01/06/11	0.55	170 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	FB01-20110106 (DUP)	SoundEarth	LCG	01/06/11	0.71	230 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW27-20110414	SoundEarth	LF	04/14/11	<0.219 ^l	360 ^l	<250	370	31	<1	1.4	8.7	--	--	--	--
	FD01-20110414 (DUP)	SoundEarth	LF	04/14/11	<0.219 ^l	330 ^l	<250	360	42	<1	1.0	6.9	--	--	--	--
	01MW27-20111220	SoundEarth	LCG	12/20/11	<0.2 ^l	1,400	<250	2,200	820	6.4	6.8	10	--	--	--	--
	FD01-20111220 (DUP)	SoundEarth	LCG	12/20/11	<0.2 ^l	1,400	<250	2,200	820	6.3	6.7	10	--	--	--	--
	01MW27-20120410	SoundEarth	LCG	04/10/12	<0.2	1,900	<250	1,800	540	13	12	34	--	--	--	--
	01MW27-20120410 (DUP)	SoundEarth	LCG	04/10/12	<0.2	1,700	<250	2,100	550	14	12	41	--	--	--	--
	01MW27-20121016	SoundEarth	LF	10/16/12	<0.2	3,800 ^x	<250	2,500	730	8.1	10	19	--	--	--	--
	FD01-20121016 (DUP)	SoundEarth	LF	10/16/12	<0.2	3,100 ^x	<250	2,700	970	8.1	10	19	--	--	--	--
	01MW27-20130131	SoundEarth	LF	01/31/13	<0.2	180 ^l	<250	<100	<1	<1	<1	<3	--	--	--	--
FD01-20130131 (DUP)	SoundEarth	LF	01/31/13	<0.2	240 ^l	<250	<100	<1	<1	<1	<3	--	--	<100	--	
01MW28	01MW-28	FW	--	04/01/03	24.6	5,020	<500	28,400	6,390	2,870	401	2,250	--	--	--	--
	01MW-28	FW	--	04/01/03	21.7	4,630	<500	199,000	3,670	1,410	448	1,520	--	--	--	--
	01MW-28	TetraTech	--	08/01/03	22.0	4,120	<500	210,000	3,580	1,380	478	1,680	--	--	--	--
	--	TetraTech	--	10/01/03	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	TetraTech	--	01/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	TetraTech	--	04/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW-28A	TetraTech	--	07/19/04	2.44	1,440 ^x	<500	17,900	5,060	1,190	343	1,230	--	--	--	--
	01MW-28B	TetraTech	--	07/19/04	2.28	1,680 ^x	<500	18,400	5,030	1,810	355	1,250	--	--	--	--
	--	TetraTech	--	11/17/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW-28	Landau	--	10/25/05	<0.490	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	LF	06/20/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW28-20061115	SoundEarth	LF	11/15/06	<10	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	12/12/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/05/08	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	04/06/09	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	LCG	07/17/09	<5	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW28-20091007	SoundEarth	LCG	10/07/09	<5	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW28-20100408	SoundEarth	LCG	04/08/10	0.85	800,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	280,000 ⁽⁸⁾	--	--	--	--	--	--	--	--
	01MW28-20100715	SoundEarth	LCG	07/15/10	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW28-20100922	SoundEarth	LF	09/22/10	--	2,900 ^{(5),x}	<250 ⁽⁵⁾	17,000	7,400	1,100	<1,000	3,700	--	--	--	--
	01MW28-20110106	SoundEarth	LCG	01/06/11	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW28-20110415	SoundEarth	LCG	04/15/11	<0.219 ^l	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW28-20111221	SoundEarth	LCG	12/21/11	<0.2 ^l	--	--	--	--	--	--	--	--	--	--	--
	01MW28-20120411	SoundEarth	LCG	04/11/12	<0.2 ^l	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	10/08/12	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	02/01/13	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	MTC Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW29	01MW-29	FW	--	04/01/03	<50	9,510	689	18,600	6,160	171	285	632	--	--	--	--
	--	TetraTech	--	10/01/03	--	LNAPL			--	--	--	--	--	--	--	--
	--	TetraTech	--	04/01/04	--	LNAPL			--	--	--	--	--	--	--	--
	01MW-29	TetraTech	--	07/19/04	9.11	14,300	<500	17,800	5,410	167	256	718	--	--	--	--
	--	TetraTech	--	11/17/04	--	LNAPL			--	--	--	--	--	--	--	--
	01MW-29	Landau	--	10/26/05	<0.500	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	06/20/06	--	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20061115	SoundEarth	LF	11/15/06	<10	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	12/12/06	--	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/05/08	--	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	04/06/09	--	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20090717	SoundEarth	LCG	07/17/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20091007	SoundEarth	LCG	10/07/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20100408	SoundEarth	LCG	04/08/10	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20100712	SoundEarth	LCG	07/12/10	<5	LNAPL			190 ⁽⁸⁾	1,200 ⁽⁸⁾	260 ⁽⁸⁾	1,060 ⁽⁸⁾	--	--	--	--
	--	SoundEarth	--	09/22/10	--	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20110110	SoundEarth	LCG	01/10/11	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW29-20100110-LNAPL	SoundEarth	--	01/10/11	--	LNAPL			700 ⁽⁸⁾	319 ⁽⁸⁾	189 ⁽⁸⁾	714 ⁽⁸⁾	--	--	--	--
	01MW29-20110413	SoundEarth	LCG	04/13/11	<0.219 ^l	LNAPL			--	--	--	--	--	--	--	--
--	SoundEarth	--	12/05/11	--	LNAPL			--	--	--	--	--	--	--	--	
01MW29-20120411	SoundEarth	LCG	04/11/12	0.26	LNAPL			--	--	--	--	--	--	--	--	
01MW29-20120710	SoundEarth	LCG	07/10/12	<0.2	LNAPL			--	--	--	--	--	--	--	--	
01MW37	01MW37-9-27-06	SoundEarth	LF	09/27/06	<0.505	<236	<472	<50.0	<0.200	0.20	<1.00	<0.750	<1.00	<0.200	0.37	<250
	01MW37-20061212	SoundEarth	LF	12/12/06	--	900	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW37-20090127	SoundEarth	LF	01/27/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20090408	SoundEarth	LF	04/08/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20090706	SoundEarth	LF	07/06/09	<0.5	1,500 ^x	390 ^y	<100	<1	<1	1	<3	--	--	--	--
	01MW37-20091007	SoundEarth	LF	10/07/09	<0.5	1,000 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20100125	SoundEarth	LF	01/25/10	<0.5	990 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20100406	SoundEarth	LF	04/06/10	<0.5	<69 ⁽⁵⁾	<350 ⁽⁵⁾	<100	<1	<1	1	<3	--	--	--	--
	01MW37-20100707	SoundEarth	LF	07/07/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20110106	SoundEarth	LF	01/06/11	0.67	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20110411	SoundEarth	LF	04/11/11	<0.219 ^l	360 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20111209	SoundEarth	LF	12/09/11	<0.2 ^l	300 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20120409	SoundEarth	LF	04/09/12	<0.2	200	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW37-20121012	SoundEarth	LF	10/12/12	<0.2	340 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW38	01MW38-9-27-06	SoundEarth	LF	09/27/06	<0.505	<238	<476	<50.0	<0.200	0.230	<1.00	<0.750	<1.00	<0.200	0.64	<250
	01MW38-20061212	SoundEarth	LF	12/12/06	--	1,300	<250	90	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW38-20090127	SoundEarth	LF	01/27/09	<0.5	<50	<250	120	<1	<1	<1	<3	--	--	--	--
	01MW38-20090408	SoundEarth	LF	04/08/09	<0.5	<69	<350	<100	<1	<1	<1	<3	--	--	--	--
	01MW38-20100707	SoundEarth	LF	07/07/10	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW38-20110107	SoundEarth	LF	01/07/11	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW38-20110412	SoundEarth	LF	04/12/11	<0.219 ^g	--	--	--	--	--	--	--	--	--	--	--
	01MW38-20111208	SoundEarth	LF	12/08/11	<0.2 ^l	--	--	--	--	--	--	--	--	--	--	--
01MW39	01MW39-9-27-06	SoundEarth	LF	09/27/06	<0.485	<236	<472	<50.0	<0.200	0.350	<1.00	<0.750	<1.00	<0.200	<0.200	<250
	01MW39-20061212	SoundEarth	LF	12/12/06	--	130	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW39-20090127	SoundEarth	LF	01/27/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW39-20090408	SoundEarth	LF	04/08/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW40	01MW40-9-27-06	SoundEarth	LF	09/27/06	<0.505	<238	<476	1,330	<0.200	0.360	<1.00	<0.750	<1.00	<0.200	<0.200	<250
	01MW40-20061212	SoundEarth	LF	12/12/06	--	780	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW40-20090128	SoundEarth	LF	01/28/09	<0.5	590 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20090408	SoundEarth	LF	04/08/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20090707	SoundEarth	LF	07/07/09	<0.5	750 ^a	320 ^y	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20091006	SoundEarth	LF	10/06/09	<0.5	660	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20100126	SoundEarth	LF	01/26/10	<0.5	580 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20100407	SoundEarth	LF	04/07/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	100	<1	<1	<1	<3	--	--	--	--
	01MW40-20100707	SoundEarth	LF	07/07/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20110107	SoundEarth	LF	01/07/11	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20110411	SoundEarth	LF	04/11/11	<0.219 ^g	4,700 ^x	610 ^x	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20111207	SoundEarth	LF	12/07/11	<0.2 ^l	680 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW40-20120409	SoundEarth	LF	04/09/12	<0.2	700	260 ^a	<100	<1	<1	<1	<3	--	--	--	--
01MW40-20121012	SoundEarth	LF	10/12/12	<0.2	500 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW41	01MW41	SoundEarth	LF	09/27/06	<0.505	<238	<476	390	164	0.290	<1.00	<0.750	<1.00	<0.200	117	<250
	01MW41-20061213	SoundEarth	LF	12/13/06	--	4,000	530 ^x	1,000	210	4.8	11	19.6	<1.00	<1.00	120	<1,000
	--	SoundEarth	--	09/05/08	--	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/26/09	--	LNAPL			--	--	--	--	--	--	--	--
	01MW41-20090406	SoundEarth	--	04/06/09	--	830,000 ⁽⁸⁾	100,000 ⁽⁸⁾	220,000 ⁽⁸⁾	--	--	--	--	--	--	--	--
	01MW41-20090717	SoundEarth	LCG	07/17/09	0.53	LNAPL			--	--	--	--	--	--	--	--
	01MW41-20091007	SoundEarth	LCG	10/07/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	LNAPL			--	--	--	--	--	--	--	--
	01MW41-20100407	SoundEarth	LCG	04/07/10	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW41-20100713	SoundEarth	LCG	07/13/10	0.66	440 ^{(5),x}	<250 ⁽⁵⁾	530	13	4.1	12	18	--	--	--	--
01MW41-20100715	SoundEarth	--	07/15/10	--	LNAPL			57 ⁽⁸⁾	290 ⁽⁸⁾	250 ⁽⁸⁾	196 ^{(8),j}	--	--	--	--	
MTCAL Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW41 (Continued)	01MW41-20110110	SoundEarth	LCG	01/10/11	<0.5	5,600 ⁽⁵⁾	1,100 ⁽⁵⁾	280	7.2	<1	1.7	<3	--	--	--	--
	01MW41-20110412	SoundEarth	LCG	04/12/11	<0.219 ⁽¹⁾	17,000	3,000	440	11	<1	4.8	<3	--	--	--	--
	01MW41-20111220	SoundEarth	LCG	12/20/11	<0.2 ^l	6,400	1,300 ^l	<100	4.7	<1	<1	4.9	--	--	--	--
	01MW41-20120410	SoundEarth	LCG	04/10/12	0.63	5,100	940 ^x	170	1.9	<1	<1	<3	--	--	--	--
	01MW41-20120711	SoundEarth	LCG	07/11/12	<0.2	3,000 ^x	720 ^x	<100	<1	<1	3.5	<3	--	--	--	--
01MW42	01MW42	SoundEarth	LF	09/27/06	<0.505	<240	<481	244	20.3	<0.200	<1.00	<0.750	2.18	<0.200	99.6	<250
	01MW42-20061212	SoundEarth	LF	12/12/06	--	2,700	420 ^x	98	<1	<1	<1	<3	<1	<1	48	<1,000
	01MW42-20081103	SoundEarth	LF	11/03/08	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW42-20090128	SoundEarth	LF	01/28/09	<0.5	600 ^x	370 ^y	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20090408	SoundEarth	LF	04/08/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20090706	SoundEarth	LF	07/06/09	<0.5	530 ^x	400	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20091006	SoundEarth	LF	10/06/09	<0.5	490	290	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20100126	SoundEarth	LF	01/26/10	<0.5	400 ^x	390 ^y	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20100407	SoundEarth	LF	04/07/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20100706	SoundEarth	LF	07/06/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	1.4	<1	<1	<3	--	--	--	--
	01MW42-20110107	SoundEarth	LF	01/07/11	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20110412	SoundEarth	LF	04/12/11	<0.219 ^l	160 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20111209	SoundEarth	LF	12/09/11	<0.2 ^l	180 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW42-20120410	SoundEarth	LF	04/10/12	<0.2	230 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW42-20121015	SoundEarth	LF	10/15/12	<0.2	350 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW43	01MW43-9-27-06	SoundEarth	LF	09/27/06	<0.485	629	<505	903	1.04	1.53	<1.00	1.39	<1.00	<0.200	<0.200	<250
	MW99-9-27-06 (DUP)	SoundEarth	LF	09/27/06	<0.505	558	<505	1020	1.00	2.58	<0.200	1.53	--	--	<0.200	--
	--	SoundEarth	--	12/12/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/05/08	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/26/09	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20090406	SoundEarth	--	04/06/09	--	800,000 ⁽⁸⁾	120,000 ⁽⁸⁾	120,000 ⁽⁸⁾	--	--	--	--	--	--	--	--
	01MW43-20090717	SoundEarth	LCG	07/17/09	0.50	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20091007	SoundEarth	LCG	10/07/09	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20100408	SoundEarth	LCG	04/08/10	<0.5	820,000 ⁽⁸⁾	150,000 ⁽⁸⁾ x	76,000 ⁽⁸⁾	--	--	--	--	--	--	--	--
	01MW43-20100715	SoundEarth	LCG	07/15/10	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20100922	SoundEarth	LF	09/22/10	--	460 ⁽⁵⁾	<250 ⁽⁵⁾	890	5.2	4.1	<1	6.4	--	--	--	--
	01MW43-20110106	SoundEarth	LCG	01/06/11	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20110414	SoundEarth	LCG	04/14/11	<0.219 ^l	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20111220	SoundEarth	LCG	12/20/11	<0.2 ^l	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW43-20120412	SoundEarth	LCG	04/12/12	<0.2 ^l	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	10/08/12	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW59	01MW59-20081125	SoundEarth	LF	11/25/08	--	740 ^o	270	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20090129	SoundEarth	LF	01/29/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20090408	SoundEarth	LF	04/08/09	<0.5	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW59-20090706	SoundEarth	LF	07/06/09	--	600 ^o	<250	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20100125	SoundEarth	LF	01/25/10	--	870 ^o	400 ^y	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20100407	SoundEarth	LF	04/07/10	--	89 ^{(5),x}	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20100713	SoundEarth	LF	07/13/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20110111	SoundEarth	LF	01/11/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20110414	SoundEarth	LF	04/14/11	--	720 ^o	320 ^x	<100	<1	<1	<1	<3	--	--	<1	--
	01MW59-20111207	SoundEarth	LF	12/07/11	--	430 ^o	<250	<100	<1	<1	<1	<3	--	--	<1	--
01MW59-20120409	SoundEarth	LF	04/09/12	--	1,100 ^x	340 ^x	<100	<1	<1	<1	<3	--	--	<1	--	
01MW59-20121012	SoundEarth	LF	10/12/12	--	420 ^o	<250	<100	<1	<1	<1	<3	--	--	<1	--	
01MW66	01MW66-20090806	SoundEarth	LF	08/06/09	<0.5	930 ^o	260 ^y	<100	<1	1	<1	<3	--	--	--	--
	01MW66-20091006	SoundEarth	LF	10/06/09	<0.5	890	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW66-20100126	SoundEarth	LF	01/26/10	<0.5	830 ^o	330 ^y	<100	<1	<1	<1	<3	--	--	--	--
	01MW66-20100408	SoundEarth	LF	04/08/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	1	5	--	--	--	--
	01MW66-20100712	SoundEarth	LF	07/12/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW66-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	150	23	6.6	1.4	6.4	--	--	--	--
	01MW66-20110106	SoundEarth	LF	01/06/11	0.68	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW66-20110413	SoundEarth	LF	04/13/11	<0.219 ^l	120 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW66-20111212	SoundEarth	LF	12/12/11	<0.2 ^{l,1}	61	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW66-20120405	SoundEarth	LF	04/05/12	<0.2	120 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW66-20121016	SoundEarth	LF	10/16/12	<0.2	250 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW66-20130128	SoundEarth	LF	01/28/13	--	2,200 ^x	<250	570	<1	1.4	<1	4.5	--	--	--	--	
01MW67	01MW67-20090806	SoundEarth	LF	08/06/09	<0.5	690 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20091007	SoundEarth	LF	10/07/09	<0.5	710 ^o	<360	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20100127	SoundEarth	LF	01/27/10	<0.5	1,000 ^x	320 ^y	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20100406	SoundEarth	LF	04/06/10	<0.5	<76 ⁽⁵⁾	<380 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20100712	SoundEarth	LF	07/12/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20110106	SoundEarth	LF	01/06/11	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20110412	SoundEarth	LF	04/12/11	<0.219 ^l	330 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20111206	SoundEarth	LF	12/06/11	<0.2 ^l	260 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW67-20120405	SoundEarth	LF	04/05/12	<0.2	240 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW67-20121012	SoundEarth	LF	10/12/12	<0.2	110 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW67-20130129	SoundEarth	LF	01/29/13	<0.2	110 ^o	<250	<100	<1	<1	<1	<3	--	--	--	--	
MTC Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW68	01MW68-20090806	SoundEarth	LF	08/06/09	<0.5	9,500 ^x	1,200 ^y	45,000	13,000	4,300	360	1,700	--	--	--	--
	01MW68-20091009	SoundEarth	LCG	10/09/09	<0.5	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	LNAPL			--	--	--	--	--	--	--	--
	01MW68-20100408	SoundEarth	LCG	04/08/10	<0.5	810,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	270,000 ⁽⁸⁾	--	--	--	--	--	--	--	--
	01MW68-20100714	SoundEarth	LCG	07/14/10	<0.5	LNAPL			--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/22/10	--	LNAPL			--	--	--	--	--	--	--	--
	01MW68-20110107	SoundEarth	LCG	01/07/11	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW68-20110413	SoundEarth	LCG	04/13/11	<0.21 ^g	LNAPL			--	--	--	--	--	--	--	--
	01MW68-20111220	SoundEarth	LCG	12/20/11	<0.2 ^l	LNAPL			--	--	--	--	--	--	--	--
	01MW68-20120412	SoundEarth	LCG	04/12/12	0.21 ^l	LNAPL			--	--	--	--	--	--	--	--
01MW68-20120711	SoundEarth	LCG	07/11/12	<0.2	LNAPL			--	--	--	--	--	--	--	--	
--	SoundEarth	--	10/08/12	--	LNAPL			--	--	--	--	--	--	--	--	
01MW69	01MW69-20090806	SoundEarth	LF	08/06/09	<0.5	300 ^g	<250	860	170	8	11	44	--	--	--	--
	01MW69-20091007	SoundEarth	LF	10/07/09	<0.5	240 ^g	<250	700	140	3	13	22	--	--	--	--
	01MW69-20100127	SoundEarth	LF	01/27/10	<0.5	570 ^g	<250	770	140	5	13	23	--	--	--	--
	01MW69-20100406	SoundEarth	LF	04/06/10	<0.5	<76 ⁽⁵⁾	<380 ⁽⁵⁾	510	110	4	12	17	--	--	--	--
	01MW69-20100713	SoundEarth	LF	07/13/10	<0.5	59 ^{(5),x}	<250 ⁽⁵⁾	630	76	3.5	7.5	13	--	--	--	--
	01MW69-20100922	SoundEarth	LF	09/22/10	--	96 ^{(5),x}	<250 ⁽⁵⁾	780	57	5.0	21	19	--	--	--	--
	01MW69-20110107	SoundEarth	LF	01/07/11	<0.5	380 ^{(5),x}	<250 ⁽⁵⁾	2,100	220	<10	59	160	--	--	--	--
	01MW69-20110413	SoundEarth	LF	04/13/11	<0.21 ^g	1,300 ^x	<250	1,400	98	2.1	13	16	--	--	--	--
	01MW69-20111212	SoundEarth	LF	12/12/11	<0.2 ^l	240	<250	200	<1	<1	<1	<3	--	--	--	--
	01MW69-20120410	SoundEarth	LF	04/10/12	<0.2	360	<250	340	<1	1.1	1.1	<3	--	--	--	--
01MW69-20121012	SoundEarth	LF	10/12/12	<0.2	270 ^g	<250	440	4.6	<1	1.6	4.8	--	--	--	--	
01MW69-20130129	SoundEarth	LF	01/29/13	0.33	600 ^g	<250	630	42	1.4	10	27	--	--	--	--	
01MW72	01MW72-20100317	SoundEarth	LF	03/17/10	<0.5	8,300	750 ^y	700	21	58	13	66	--	--	--	--
	01MW72-20100331	SoundEarth	LCG	03/31/10	<0.5	17,000	1,500 ^g	1,800	94	190	36	210	--	--	--	--
	01MW72-20100408	SoundEarth	LCG	04/08/10	<0.5	LNAPL			--	--	--	--	--	--	--	--
	01MW72-20100715	SoundEarth	LCG	07/15/10	<0.5	220 ^{(5),x}	<250 ⁽⁵⁾	830	27	72	14	65	--	--	--	--
	01MW72-20100922	SoundEarth	LF	09/22/10	--	1,100 ⁽⁵⁾	370 ⁽⁵⁾	550	6.4	27	9.6	48	--	--	--	--
	01MW72-20110107	SoundEarth	LCG	01/07/11	<0.5	890 ⁽⁵⁾	<250 ⁽⁵⁾	1,300	21	1.1	44	67	--	--	--	--
	01MW72-20110412	SoundEarth	LCG	04/12/11	<0.21 ^g	6,700	530 ^x	1,600	15	14	32	47	--	--	--	--
	01MW72-20111220	SoundEarth	LCG	12/20/11	<0.2 ^l	1,200	370 ^x	440	15	5.1	16	41	--	--	--	--
	01MW72-20120411	SoundEarth	LCG	04/11/12	<0.2 ^l	6,600	780 ^x	1,400	59	8.2	37	47	--	--	--	--
	--	SoundEarth	--	10/08/12	--	LNAPL			--	--	--	--	--	--	--	--
--	SoundEarth	--	02/01/13	--	LNAPL			--	--	--	--	--	--	--	--	
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
01MW73	01MW73-20100317	SoundEarth	--	03/17/10	--	790,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	240,000 ⁽⁸⁾	1,400 ⁽⁸⁾	3,900 ⁽⁸⁾	2,900 ⁽⁸⁾	14,000 ⁽⁸⁾	--	--	--	--
	--	SoundEarth	--	04/05/10	--	LNAPL	--	--	--	--	--	--	--	--	--	--
	01MW73-20100427	SoundEarth	LF	04/27/10	<0.5	LNAPL	--	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	07/06/10	--	LNAPL	--	--	--	--	--	--	--	--	--	--
	01MW73-20100708	SoundEarth	--	07/08/10	--	LNAPL	700 ⁽⁸⁾	2,200 ⁽⁸⁾	200 ⁽⁸⁾	1,640 ⁽⁸⁾	--	--	--	--	--	--
	01MW73-20100715	SoundEarth	LCG	07/15/10	<0.5	LNAPL	--	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	09/22/10	--	LNAPL	--	--	--	--	--	--	--	--	--	--
	01MW73-20110107	SoundEarth	LCG	01/07/11	<0.5	LNAPL	--	--	--	--	--	--	--	--	--	--
	01MW73-20110107-LNAPL	SoundEarth	--	01/07/11	--	LNAPL	1,420 ⁽⁸⁾	2,540 ⁽⁸⁾	2,030 ⁽⁸⁾	7,680 ⁽⁸⁾	--	--	--	--	--	--
	01MW73-20110412	SoundEarth	LCG	04/12/11	<0.219 ^f	LNAPL	--	--	--	--	--	--	--	--	--	--
	01MW73-20111220	SoundEarth	LCG	12/20/11	<0.2 ^f	LNAPL	--	--	--	--	--	--	--	--	--	--
	01MW73-20120412	SoundEarth	LCG	04/12/12	<0.2 ^f	LNAPL	--	--	--	--	--	--	--	--	--	--
	--	SoundEarth	--	10/08/12	--	LNAPL	--	--	--	--	--	--	--	--	--	--
--	SoundEarth	--	02/01/13	--	LNAPL	--	--	--	--	--	--	--	--	--	--	
01MW74	01MW74-20100317	SoundEarth	LF	03/17/10	<0.5	7,100	990 ^y	18,000	5,900	160	160	540	--	--	--	--
	01MW74-20100407	SoundEarth	LF	04/07/10	<0.5	720 ^{(5),x}	<250 ⁽⁵⁾	21,000	5,800	170	170	600	--	--	--	--
	01MW74-20100707	SoundEarth	LF	07/07/10	<0.5	770 ^{(5),x}	<250 ⁽⁵⁾	28,000	8,500	220	210	550	--	--	--	--
	01MW74-20100922	SoundEarth	LF	09/22/10	--	670 ^{(5),x}	<250 ⁽⁵⁾	4,900	9,500	170	220	490	--	--	--	--
	01MW74-20110107	SoundEarth	LF	01/07/11	<0.5	450 ^{(5),x}	<250 ⁽⁵⁾	3,900	2,000	66	76	270	--	--	--	--
	01MW74-20110411	SoundEarth	LF	04/11/11	<0.219 ^f	1,900 ^x	330 ^x	10,000	2,700	67	95	200	--	--	--	--
	01MW74-20111209	SoundEarth	LF	12/09/11	<0.2 ^f	4,100 ^x	580 ^x	11,000	2,800	140	150	460	--	--	--	--
	01MW74-20120412	SoundEarth	LF	04/12/12	<0.2	5,100 ^x	840 ^x	17,000	3,500	180	560	600	--	--	--	--
	01MW74-20121016	SoundEarth	LF	10/16/12	0.49	11,000 ^x	1,600 ^f	19,000	4,800	170	120	560	--	--	--	--
	01MW74-20130131	SoundEarth	LF	01/31/13	0.42	860 ^f	<250	930	16	6.4	15	26	--	--	--	--
01MW75	01MW75-20100317	SoundEarth	LF	03/17/10	<0.5	2,300	430 ^y	<100	3	<1	<1	4	--	--	--	--
	01MW75-20100406	SoundEarth	LF	04/06/10	<0.5	<65 ⁽⁵⁾	<330 ⁽⁵⁾	<100	1	<1	5	<3	--	--	--	--
	01MW75-20100707	SoundEarth	LF	07/07/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	160	1.2	<1	12	<3	--	--	--	--
	01MW75-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	5.4	<1	4.2	<3	--	--	--	--
	01MW75-20110107	SoundEarth	LF	01/07/11	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	4.7	5.1	--	--	--	--
	01MW75-20110411	SoundEarth	LF	04/11/11	<0.219 ^f	5,300 ^x	590 ^x	130	<1	<1	<1	<3	--	--	--	--
	01MW75-20111208	SoundEarth	LF	12/08/11	<0.2 ^f	1,900 ^x	<250	<100	<1	<1	<1	4.0	--	--	--	--
	01MW75-20120410	SoundEarth	LF	04/10/12	<0.2	1,400 ^x	450 ^x	<100	<1	<1	<1	<3	--	--	--	--
	01MW75-20121015	SoundEarth	LF	10/15/12	<0.2	960 ^f	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW90	01MW90-20120202	SoundEarth	LF	02/02/12	<0.2 ^f	470	<250	<100	<1	<1	<1	<3	--	--	--
01MW91	01MW91-20120202	SoundEarth	LF	02/02/12	<0.2 ^f	260	<250	<100	<1	<1	<1	<3	--	--	--	--
A6IW01	A6-20130130	SoundEarth	LF	01/30/13	0.27	--	--	--	--	--	--	--	--	--	--	--
B3IW01	B3-20130131	SoundEarth	LF	01/31/13	--	20,000	1,200 ^x	11,000	6,100	120	51	150	--	--	--	--
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)												
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾	
Bulk Terminal Property																	
Shallow Water-Bearing Zone																	
C3IW01	C3-20100714	SoundEarth	LF	07/14/10	63	2,500 ^{(5),x}	<250 ⁽⁵⁾	58,000	5,400	6,200	680	4,900	--	--	--	--	
	C3-20110110	SoundEarth	LCG	01/10/11	<1	7,200 ⁽⁵⁾	<250 ⁽⁵⁾	5,300	200	69	52	240	--	--	--	--	
	C3-20100110-LNAPL	SoundEarth	--	01/10/11	--	LNAPL	--	--	3.68 ⁽⁶⁾	42.6 ⁽⁶⁾	184 ⁽⁶⁾	311 ⁽⁶⁾	--	--	--	--	
	C3-20110415	SoundEarth	LCG	04/15/11	<0.5	67,000	1,300 ²	19,000	1,200	1,300	330	2,000	--	--	--	--	--
	C3-20111108	SoundEarth	LF	11/08/11	<0.219 ¹	--	--	--	--	--	--	--	--	--	--	--	--
	C3-20120411	SoundEarth	LF	04/11/12	0.23 ¹	38,000	1,300 ²	17,000	1,400	750	240	1,500	--	--	--	--	--
E9IW01	C3-20120710	SoundEarth	LF	07/10/12	<0.2	49,000 ^x	1,500 ²	19,000	2,100	730	210	1,300	--	--	--	--	
	E9-20100714	SoundEarth	LF	07/14/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
	E9IW01-20100922	SoundEarth	LF	09/22/10	--	82 ^{(5),x}	<250 ⁽⁵⁾	350	10	4.7	6.1	27	--	--	--	--	
	E9-20110111	SoundEarth	LF	01/11/11	<0.5	94 ^{(5),x}	<250 ⁽⁵⁾	250	5.7	1.9	1.8	<3	--	--	--	--	
	E9-20110412	SoundEarth	LF	04/12/11	<0.219 ¹	1,100 ^x	420 ^x	220	1.8	1.3	<1	<3	--	--	--	--	
	E9-20111209	SoundEarth	LF	12/09/11	<0.2 ¹	810 ^x	300 ^x	<100	<1	<1	1.1	<3	--	--	--	--	
F4IW01	E9-20120410	SoundEarth	LF	04/10/12	<0.2	1,400 ^x	1,100 ²	<100	<1	<1	<1	<3	--	--	--	--	
	E9-20120709	SoundEarth	LF	07/09/12	<0.2	790 ^x	420 ^x	<100	<1	<1	<1	<3	--	--	--	--	
	F4-20100715	SoundEarth	LF	07/15/10	120	--	--	--	--	--	--	--	--	--	--	--	
	F4-20101118	SoundEarth	LCG	11/18/10	50	15,000 ⁽⁵⁾	420 ^{(5),x}	17,000	2,000	460	160	940	--	--	--	--	
	F4-20110110	SoundEarth	LCG	01/10/11	<0.5	--	--	--	--	--	--	--	--	--	--	--	
	F4-20110415	SoundEarth	LCG	04/15/11	<0.5	--	--	--	--	--	--	--	--	--	--	--	
G7IW01	F4-20111107	SoundEarth	LF	11/07/11	<0.219 ¹	--	--	--	--	--	--	--	--	--	--	--	
	F4-20120412	SoundEarth	LF	04/12/12	0.53	--	--	--	--	--	--	--	--	--	--	--	
	F4-20120710	SoundEarth	LF	07/10/12	<0.2	--	--	--	--	--	--	--	--	--	--	--	
	G7-20110107-LNAPL	SoundEarth	--	01/07/11	--	LNAPL	--	--	157 ⁽⁶⁾	91.9 ⁽⁶⁾	262 ⁽⁶⁾	249 ⁽⁶⁾	--	--	--	--	
	G10IW01	SoundEarth	LF	01/30/13	<0.2	2,200	450 ^x	<100	<1	<1	3.4	<3	--	--	--	--	
	J7IW01	SoundEarth	LF	12/08/11	0.72 ²	--	--	--	--	--	--	--	--	--	--	--	
J10IW01	J7-20120412	SoundEarth	LF	04/12/12	19	--	--	--	--	--	--	--	--	--	--	--	
	J10-20100714	SoundEarth	LF	07/14/10	5.0	<50 ⁽⁵⁾	<250 ⁽⁵⁾	160	22	<1	<1	<3	--	--	--	--	
	J10IW01-20100922	SoundEarth	LF	09/22/10	--	95 ^{(5),x}	<250 ⁽⁵⁾	360	73	3.2	9.6	19	--	--	--	--	
	J10-20110110	SoundEarth	LF	01/10/11	<0.5	930 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
	J10-201010412	SoundEarth	LF	04/12/11	<0.219 ¹	4,400	350 ^x	250	3.9	<1	1.3	3.5	--	--	--	--	
	J10-20111108	SoundEarth	LF	11/08/11	<0.219 ¹	--	--	--	--	--	--	--	--	--	--	--	
K3IW01	J10-20120412	SoundEarth	LF	04/12/12	1.3	4,900 ^x	480 ^x	450	16	1.2	5.7	22	--	--	--	--	
	J10-20120710	SoundEarth	LF	07/10/12	<0.2	3,400 ^x	350 ^x	240	4.8	<1	<1	4.7	--	--	--	--	
	K3-20100715	SoundEarth	LF	07/15/10	160	--	--	--	--	--	--	--	--	--	--	--	
	K3IW01-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	190	25	26	3.3	21	--	--	--	--	
	K3-20101117	SoundEarth	LF	11/17/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
	K3-20110110	SoundEarth	LF	01/10/11	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
K3IW01	K3-20110412	SoundEarth	LF	04/12/11	<0.219 ¹	<50	<250	<100	<1	<1	<1	<3	--	--	--	--	
	K3-20111107	SoundEarth	LF	11/07/11	<0.219 ¹	--	--	--	--	--	--	--	--	--	--	--	
	K3-20120409	SoundEarth	LF	04/09/12	<0.2	<50	<250	<100	<1	<1	<1	<3	--	--	--	--	
	K3-20120710	SoundEarth	LF	07/10/12	0.22	87 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--	
	K3-20120727	SoundEarth	LF	07/27/12	0.24	<50	<250	<100	<1	<1	<1	<3	--	--	--	--	
	MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
L2IW01	L2-20100831	SoundEarth	LF	08/31/10	14	--	--	--	--	--	--	--	--	--	--	--
	L2-20110110	SoundEarth	LF	01/10/11	<0.5	--	--	--	--	--	--	--	--	--	--	--
	L2-20110415	SoundEarth	LF	04/15/11	<0.5 ^b	--	--	--	--	--	--	--	--	--	--	--
	L2-20111108	SoundEarth	LF	11/08/11	<0.219 ^d	--	--	--	--	--	--	--	--	--	--	--
	L2-20120409	SoundEarth	LF	04/09/12	<0.2	--	--	--	--	--	--	--	--	--	--	--
	L2-20120710	SoundEarth	LF	07/10/12	<0.2	--	--	--	--	--	--	--	--	--	--	--
M5IW01	L2-20130129	SoundEarth	LF	01/29/13	0.43	--	--	--	--	--	--	--	--	--	--	--
	M5-20100714	SoundEarth	LF	07/14/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	M5IW01-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	150	<1	<1	2.8	<3	--	--	--	--
	M5-20110107	SoundEarth	LF	01/07/11	0.73	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	M5-20110412	SoundEarth	LF	04/12/11	<0.219 ^d	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	M5-20111220	SoundEarth	LCG	12/20/11	<0.2 ^d	570	<250	<100	<1	<1	<1	<3	--	--	--	--
	M5-20120409	SoundEarth	LF	04/09/12	<0.2	890	<250	<100	<1	<1	<1	<3	--	--	--	--
	M5-20120711	SoundEarth	LCG	07/11/12	<0.2	780 ^d	<250	<100	<1	<1	<1	<3	--	--	--	--
N7IW01	M5-20121015	SoundEarth	LF	10/15/12	<0.2	740 ^d	<250	<100	<1	<1	<1	<3	--	--	--	--
	M5-20130129	SoundEarth	LF	01/29/13	2.1	350 ^d	<250	<100	<1	<1	<1	<3	--	--	--	--
	N7-20120410	SoundEarth	LF	04/10/12	<0.2	1,100 ^d	310 ^d	<100	<1	<1	<1	<3	--	--	--	--
N10IW01	N7-20120710	SoundEarth	LF	07/10/12	<0.2	670 ^d	<250	<100	<1	<1	<1	<3	--	--	--	--
	N7-20130129	SoundEarth	LF	01/29/13	<0.2	440 ^d	<250	<100	<1	<1	<1	<3	--	--	--	--
	N10-20100714	SoundEarth	LF	07/14/10	<0.5	<50 ⁽⁵⁾	<250 ⁽⁵⁾	120	12	<1	<1	<3	--	--	--	--
	N10IW01-20100922	SoundEarth	LF	09/22/10	--	55 ^{(5),x}	<250 ⁽⁵⁾	280	61	17	12	15	--	--	--	--
	N10-20110110	SoundEarth	LF	01/10/11	<0.5	180 ^{(5),x}	<250 ⁽⁵⁾	2,600	340	31	14	210	--	--	--	--
	N10-20110413	SoundEarth	LF	04/13/11	<0.219 ^d	7,300 ^d	1,100 ^d	5,300	720	8.0	16	110	--	--	--	--
	N10-20111207	SoundEarth	LF	12/07/11	<0.2 ^d	2,300 ^d	260 ^d	760	53	2.8	2.5	9.9	--	--	--	--
	N10-20120410	SoundEarth	LF	04/10/12	<0.2 ^d	7,700	1,300 ^d	880	110	2.7	4.5	8.7	--	--	--	--
	N10-20120709	SoundEarth	LF	07/09/12	<0.2	14,000 ^d	1,600 ^d	2,400	490	<10	34	30	--	--	--	--
O5IW01	N10-20121016	SoundEarth	LF	10/16/12	<0.2	1,800 ^d	310 ^d	110	10	<1	<1	<3	--	--	--	--
	N10-20130129	SoundEarth	LF	01/29/13	<0.2	3,900 ^d	800 ^d	460	66	4.1	7.6	7.5	--	--	--	--
	O5-20100831	SoundEarth	LF	08/31/10	<0.5	--	--	--	--	--	--	--	--	--	--	--
	O5-20110110	SoundEarth	LF	01/10/11	<0.5	--	--	--	--	--	--	--	--	--	--	--
	O5-20110413	SoundEarth	LF	04/13/11	0.28 ^d	--	--	--	--	--	--	--	--	--	--	--
	O5-20111108	SoundEarth	LF	11/08/11	<0.219 ^d	--	--	--	--	--	--	--	--	--	--	--
O6IW01	O5-20120409	SoundEarth	LF	04/09/12	<0.2	--	--	--	--	--	--	--	--	--	--	--
	O5-20120709	SoundEarth	LF	07/09/12	<0.2	--	--	--	--	--	--	--	--	--	--	--
	O6-20130130	SoundEarth	LF	01/30/13	<0.2	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
Bulk Terminal Property																
Shallow Water-Bearing Zone																
Q9IW01	Q9-2010074	SoundEarth	LF	07/14/10	<0.5	54 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	1.3	<1	<3	--	--	--	--
	Q9IW01-20100922	SoundEarth	LF	09/22/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	720	17	23	5.8	13	--	--	--	--
	Q9-20110110	SoundEarth	LF	01/10/11	<0.5	240 ^{(5),x}	<250 ⁽⁵⁾	140	3.8	<1	2.5	4.5	--	--	--	--
	Q9-20110412	SoundEarth	LF	04/12/11	<0.219 ^l	730 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	Q9-20111220	SoundEarth	LCG	12/20/11	<0.2 ^l	430	<250	<100	<1	<1	<1	<3	--	--	--	--
	Q9-20120410	SoundEarth	LF	04/10/12	<0.2	1,500 ^x	250 ^x	140	1.8	1.1	<1	<3	--	--	--	--
	Q9-20120709	SoundEarth	LF	07/09/12	<0.2	770 ^x	<250	180	2.2	<1	<1	<3	--	--	--	--
	Q9-20121015	SoundEarth	LF	10/15/12	<0.2	2,600 ^x	940 ^x	<100	<1	<1	<1	<3	--	--	--	--
Q9-20130128	SoundEarth	LF	01/28/13	--	3,100 ^x	630 ^x	240	4.0	<1	6.5	8.0	--	--	--	--	
IW03	IW03-20111213	SoundEarth	LF	12/13/11	<0.2 ^l	2,100 ^x	310 ^x	110	1.3	<1	1.4	<3	--	--	--	--
	IW03-20120409	SoundEarth	LF	04/09/12	<0.2	2,600 ^x	630 ^x	<100	<1	<1	<1	<3	--	--	--	--
	IW03-20121016	SoundEarth	LF	10/16/12	<0.2	1,700 ^x	550 ^x	<100	<1	<1	<1	<3	--	--	--	--
West Commodore Way																
Shallow Water-Bearing Zone																
01MW02	01MW-02	IT	--	09/28/99	--	714	<500	12,200	3,880	525	230	1,100	--	--	--	--
	01MW-02	FW	--	11/16/00	--	5,000	<500	12,700	3,300	1,010	331	1,510	--	--	--	--
	01MW02	FW	--	07/27/01	--	5,010	<1,500	14,800	6,900	162	262	1,110	--	--	--	--
	01MW02	FW	--	10/01/01	<0.500	264	<500	10,100	4,290	71.2	159	741	--	--	--	--
	01MW02	FW	--	01/02/02	<0.500	330	<500	13,000	3,280	645	373	1,610	--	--	--	--
	01MW02	FW	--	04/02/02	<0.500	479	<500	27,500	11,200	658	340	1,390	--	--	--	--
	01MW02	FW	--	07/02/02	<0.500	3,810	560	21,600	6,620	528	310	1,380	--	--	--	--
	01MW02A	FW	--	07/02/02	<0.500	377	<500	17,500	7,060	250	230	970	--	--	--	--
	01MW02B	FW	--	07/02/02	<0.500	294	<500	17,600	6,380	230	212	892	--	--	--	--
	01MW-02	FW	--	10/02/02	--	412	<500	10,700	2,780	888	303	1,580	--	--	--	--
	01MW-02	FW	--	01/01/03	--	502	<500	31,100	9,860	988	278	1,570	<500	--	--	--
	01MW-02	FW	--	04/01/03	--	817	<500	11,600	4,630	218	229	561	--	--	--	--
	01MW-02	TetraTech	--	08/01/03	--	1,620	<500	14,800	5,540	133	200	713	--	--	--	--
	01MW-02	TetraTech	--	01/01/04	--	<250	<500	9,820	3,900	295	312	1,030	--	--	--	--
	01MW-02	TetraTech	--	01/01/04	--	<250	<500	10,500	3,950	307	300	1,050	--	--	--	--
	01MW-02	TetraTech	--	04/01/04	--	428	<500	21,800	8,680	213	310	857	--	--	--	--
	01MW-02	TetraTech	--	07/15/04	--	<250	<500	9,670	3,230	97.0	146	441	--	--	--	--
	01MW-02	TetraTech	--	11/17/04	--	377	<500	20,100	8,600	68.0	207	572	--	--	--	--
	01MW-02	TetraTech	--	01/05/05	--	433	<500	31,300	12,600	218	290	1,000	--	--	--	--
	01MW-02	Landau	--	04/25/05	--	2,060	<500	33,400	16,100	355	457	1,340	--	--	--	--
	01MW-02	Landau	--	07/26/05	--	2,210	<500	27,600	10,400	735	664	2,570	--	--	--	--
	01MW-02	Landau	--	10/25/05	<0.495	256	<476	24,200	4,660	986	666	3,250	--	--	--	--
	--	SoundEarth	LF	06/20/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	01MW02-20061115	SoundEarth	LF	11/15/06	<1	--	LNAPL	--	--	--	--	--	--	--	--	--
	--	SoundEarth	LF	12/12/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--
	MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)												
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾	
West Commodore Way																	
Shallow Water-Bearing Zone																	
01MW02 (Continued)	01MW02-20090129	SoundEarth	LF	01/29/09	--	2,600	<250	51,000	5,000	620	3,000	13,000	--	--	--	--	
	01MW02-20090407	SoundEarth	LF	04/07/09	--	2,200	<250	18,000	2,700	190	700	2,900	--	--	--	--	
	01MW02-20090707	SoundEarth	LF	07/07/09	--	3,100 ^x	270 ^y	21,000	6,300	59	300	220	--	--	--	--	
	01MW02-20100128	SoundEarth	LF	01/28/10	--	2,300 ^x	<250	11,000	710	120	390	2,100	--	--	--	--	
	01MW02-20100406	SoundEarth	LF	04/06/10	--	1,700 ^{(5),x}	<250 ⁽⁵⁾	12,000	260	150	440	2,600	--	--	--	--	
	01MW02-20100712	SoundEarth	LF	07/12/10	--	760 ^{(5),x}	<250 ⁽⁵⁾	5,000	290	27	200	490	--	--	--	--	
	01MW02-20110112	SoundEarth	LF	01/12/11	--	2,000 ^{(5),x}	<250 ⁽⁵⁾	37,000	10,000	990	1,100	4,200	--	--	--	--	
	01MW02-20110413	SoundEarth	LF	04/13/11	--	2,800 ^x	<250	9,700	520	55	380	1,200	--	--	--	--	
	01MW02-20111208	SoundEarth	LF	12/08/11	--	4,500 ^x	360 ^x	5,300	14,000	7.4	330	24	--	--	--	--	
	01MW02-20120409	SoundEarth	LF	04/09/12	--	1,900 ^x	<250	12,000	890	50	840	1,400	--	--	--	--	
01MW02-20121015	SoundEarth	LF	10/15/12	--	5,400 ^x	290 ^x	28,000	8,300	75	890	1,300	--	--	--	--		
01MW03	01MW-03	IT	--	09/28/99	--	944	<500	27,200	11,300	405	398	1,590	--	--	--	--	
	01MW-03	FW	--	11/16/00	--	1,650	<500	3,620	1,020	26.9	63.6	210	--	--	--	--	
	01MW-03	FW	--	07/27/01	--	2,840	<1,500	24,500	11,900	238	414	515	--	--	--	--	
	01MW-03A	FW	--	10/01/01	<0.500	491	<500	18,500	11,700	82.1	237	138	--	--	--	--	
	01MW-03B	FW	--	10/01/01	2.24	379	<500	9,200	4,330	39.9	114	66.3	--	--	--	--	
	01MW-03A	FW	--	01/02/02	<0.500	443	<500	1,070	98.8	4.56	7.94	9.53	--	--	--	--	
	01MW-03B	FW	--	01/02/02	<0.500	440	<500	1,070	98.3	4.45	8.28	9.36	--	--	--	--	
	01MW-03A	FW	--	04/02/02	<0.500	427	<500	753	50.8	3.68	9.85	9.23	--	--	--	--	
	01MW-03B	FW	--	04/02/02	<0.500	463	<500	751	62.7	4.65	12.2	11.1	--	--	--	--	
	01MW03	FW	--	07/02/02	<0.500	1,750	<500	14,300	5,270	72.7	134	207	--	--	--	--	
	01MW-03	FW	--	07/02/02	<0.500	512	<500	21,000	8,990	416	324	588	--	--	--	--	
	01MW-03	FW	--	10/02/02	--	897	<500	18,000	8,350	97.5	244	671	--	--	--	--	
	01MW-03	FW	--	01/01/03	--	<250	<500	618	170	<5.00	<5.00	<15.0	<25.0	--	--	--	
	01MW-03	FW	--	04/01/03	--	879	<500	1,070	135	7.12	<2.50	12.7	--	--	--	--	
	01MW-03	TetraTech	--	08/01/03	--	2,090	<500	31,500	13,900	232	355	449	--	--	--	--	
	01MW-03	TetraTech	--	01/01/04	--	404	<500	1,040	302	10.1	7.09	17.3	--	--	--	--	
	01MW-03	TetraTech	--	04/01/04	--	508	<500	1,060	83.5	4.64	2.56	12.1	--	--	--	--	
	01MW-03	TetraTech	--	07/15/04	--	1,230	938	4,500	1,130	60.8	41.4	82.5	--	--	--	--	
	01MW-03	TetraTech	--	11/17/04	--	925	<500	9,320	3,110	27.0	121	91.40	--	--	--	--	
	01MW-03	TetraTech	--	01/05/05	--	762	<500	2,720	729	17.1	32.6	24.7	--	--	--	--	
	01MW-03	Landau	--	04/25/05	--	1,120	<500	5,690	2,550	13.4	23.5	27.1	--	--	--	--	
	01MW-03	Landau	--	07/26/05	--	998	<500	4,200	957	13.4	10.5	35.3	--	--	--	--	
	01MW-03	Landau	--	10/25/05	--	<0.472	684	<532	22,700	9,840	251	296	559	--	--	--	--
	01-MW-03-20060621	SoundEarth	LF	06/21/06	--	928	<500	8,330	4,300	48.7	101	44.8	<1.00	<0.200	<0.200	<25,000	
	01MW03-20061212	SoundEarth	LF	12/12/06	--	1,500	<250	3,200	1,000	12	23	40	<1	<1	<1	<1,000	
	MW-99-20061212	SoundEarth	LF	12/12/06	--	1,300	<250	--	--	--	--	--	--	--	--	--	
	01MW03-20081103	SoundEarth	LF	11/03/08	--	<0.5	--	--	--	--	--	--	--	--	--	--	
01MW03-20090128	SoundEarth	LF	01/28/09	--	<0.5	990 ^d	<250	940	140	5	12	16	--	--	--	--	
01MW03-20090407	SoundEarth	LF	04/07/09	--	<0.5	390	<250	990	150	6	7	18	--	--	--	--	
MTC Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE	



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
West Commodore Way																
Shallow Water-Bearing Zone																
01MW09	01MW-09	FW	--	12/01/00	--	1,070	<500	2,210	<1.08	<0.500	<0.500	<1.00	--	--	--	--
	01MW-09	FW	--	07/26/01	--	5,720	<500	1,830	213	114	48.1	230	--	--	--	--
	01MW-09	FW	--	10/01/01	<0.500	336	<500	6,940	1,030	422	247	1,250	--	--	--	--
	01MW-09	FW	--	01/02/02	<0.500	<250	<500	480	67.2	32.4	17.6	81.1	--	--	--	--
	01MW-09	FW	--	04/02/02	--	<250	<500	860	134	37	25.0	106	--	--	--	--
	01MW09	FW	--	07/02/02	<0.500	1,750	<500	8,080	985	465	223	1,050	--	--	--	--
	01MW-09	FW	--	07/02/02	--		LNAPL			--	--	--	--	--	--	--
	01MW-09	FW	--	10/02/02	--		LNAPL			--	--	--	--	--	--	--
	01MW-09	FW	--	04/01/03	--	1,130	<500	8,370	1,140	690	221	1,070	--	--	--	--
	01MW-09	TetraTech	--	08/01/03	--	8,630	<500	11,400	1,370	335	314	1,500	--	--	--	--
	01MW-09	TetraTech	--	01/01/04	--	451	<500	937	340	10.4	12.2	47.6	--	--	--	--
	01MW-09	TetraTech	--	04/01/04	--	3,920	<500	16,200	3,310	183	573	2,580	--	--	--	--
	01MW-09	TetraTech	--	07/15/04	<0.500	19,200	<500	7,730	1,050	48.0	232	942	--	--	--	--
	01MW-09	TetraTech	--	11/17/04	--	736	<500	5,260	808	25.9	205	559	--	--	--	--
	01MW-09	TetraTech	--	01/05/05	--	646	<500	6,300	1,130	45.7	231	872	--	--	--	--
	01MW-09	Landau	--	04/25/05	--	1,780	<500	7,620	1,200	63.4	281	972	--	--	--	--
	01MW-09	Landau	--	07/26/05	--	2,090	<500	9,450	900	41.9	261	964	--	--	--	--
	01MW-09 DUP	Landau	--	07/28/05	--	5,100	<1,000	9,840	1,160	47.1	304	1,110	--	--	--	--
	01MW-09	Landau	--	10/25/05	<0.500	1,440 ^l	<495	8,600	1,230	42.1	297	877	--	--	--	--
	01MW-09 DUP	Landau	--	10/26/05	<0.485	619 ^r	<532	9,480	1,440	36.9	285	725	--	--	--	--
	--	SoundEarth	--	06/20/06	--		LNAPL			--	--	--	--	--	--	--
	--	SoundEarth	--	12/06/06	--		LNAPL			--	--	--	--	--	--	--
	01MW09-20061115	SoundEarth	LF	11/15/06	<1		LNAPL			--	--	--	--	--	--	--
--	SoundEarth	--	12/12/06	--		LNAPL			--	--	--	--	--	--	--	
01MW09-20090408	SoundEarth	LF	04/08/09	--	10,000	<250	18,000	6,200	190	330	860	--	--	--	--	
--	SoundEarth	--	07/06/09	--	--	--	--	--	--	--	--	--	--	--	--	
--	SoundEarth	--	01/25/10	--	--	--	--	--	--	--	--	--	--	--	--	
--	SoundEarth	--	04/05/10	--	--	--	--	--	--	--	--	--	--	--	--	
01MW10	--	TetraTech	--	10/01/03	--		LNAPL			--	--	--	--	--	--	
	--	TetraTech	--	01/01/04	--		LNAPL			--	--	--	--	--	--	
	--	TetraTech	--	04/01/04	--		LNAPL			--	--	--	--	--	--	
	--	TetraTech	--	07/01/04	--		LNAPL			--	--	--	--	--	--	
	--	TetraTech	--	11/17/04	--		LNAPL			--	--	--	--	--	--	
	--	Landau	--	10/24/05	--		LNAPL			--	--	--	--	--	--	
	--	SoundEarth	--	06/20/06	--		LNAPL			--	--	--	--	--	--	
	01MW10-20061115	SoundEarth	LF	11/15/06	<10		LNAPL			--	--	--	--	--	--	
	--	SoundEarth	--	12/12/06	--		LNAPL			--	--	--	--	--	--	
	--	SoundEarth	--	09/05/08	--		LNAPL			--	--	--	--	--	--	
	--	SoundEarth	LF	01/26/09	--		LNAPL			--	--	--	--	--	--	
01MW10-20090406	SoundEarth	--	04/06/09	--	960,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	120,000 ⁽⁸⁾									
MTCAL Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
West Commodore Way																
Shallow Water-Bearing Zone																
01MW10 (Continued)	01MW10-20090717	SoundEarth	LCG	07/17/09	<0.5	LNAPL										
	01MW10-20091007	SoundEarth	LCG	10/07/09	<0.5	LNAPL										
	--	SoundEarth	--	01/25/10	--	LNAPL										
	01MW10-20100408	SoundEarth	LCG	04/08/10	<0.5	LNAPL										
	01MW10-20100714	SoundEarth	LCG	07/14/10	<0.5	LNAPL										
	01MW10-20110110	SoundEarth	LCG	01/10/11	<0.5	LNAPL										
	01MW10-20110414	SoundEarth	LCG	04/14/11	<0.219 ^g	LNAPL										
	--	SoundEarth	--	12/05/11	--	LNAPL										
	01MW10-20120412	SoundEarth	LCG	04/12/12	0.28	LNAPL										
	01MW10-20120710	SoundEarth	LCG	07/10/12	<0.2	LNAPL										
--	SoundEarth	--	10/08/12	--	LNAPL											
01MW11	01MW-11	FW	--	12/01/00	--	504	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	07/26/01	--	1,530	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	10/01/01	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	01/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	04/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	07/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	10/02/02	<0.500	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	FW	--	01/01/03	--	<250	<500	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	--	--	--
	01MW-11	FW	--	04/01/03	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	TetraTech	--	08/01/03	--	294	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	TetraTech	--	01/01/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	TetraTech	--	04/01/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	TetraTech	--	07/16/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	TetraTech	--	11/17/04	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	TetraTech	--	01/05/05	--	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	Landau	--	04/25/05	--	1,230	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	Landau	--	07/26/05	--	1,190	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01MW-11	Landau	--	10/24/05	<0.490	<248	<495	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--
	01-MW-11-20060621	SoundEarth	LF	06/21/06	--	1,040	<500	<50	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	3.31	<250
	01MW11-20061213	SoundEarth	LF	12/13/06	--	800	280 ^x	<50	<1	<1	<1	<3	<1	<1	4.2	<1,000
	01MW11-20090129	SoundEarth	LF	01/29/09	--	56 ^x	480	<100	<1	<1	<1	<3	--	--	--	--
	01MW11-20090407	SoundEarth	LF	04/07/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW11-20090707	SoundEarth	LF	07/07/09	--	800 ^x	310 ^y	<100	<1	<1	<1	<3	--	--	--	--
	01MW11-20100128	SoundEarth	LF	01/28/10	--	510 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW11-20100405	SoundEarth	LF	04/05/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW11-20100713	SoundEarth	LF	07/13/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
01MW11-20110112	SoundEarth	LF	01/12/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--	
01MW11-20110413	SoundEarth	LF	04/13/11	--	700 ^x	420 ^x	<100	<1	<1	<1	<3	--	--	--	--	
01MW11-20111212	SoundEarth	LF	12/12/11	--	590 ^x	340 ^x	<100	<1	<1	<1	<3	--	--	--	--	
01MW11-20120409	SoundEarth	LF	04/09/12	--	430 ^x	310 ^x	<100	<1	<1	<1	<3	--	--	--	--	
01MW11-20121011	SoundEarth	LF	10/11/12	--	400 ^x	<250	<100	<1	<1	<1	<3	--	--	--	--	
MTCA Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)												
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾	
West Commodore Way																	
Shallow Water-Bearing Zone																	
01MW16	01MW16A	FW	--	07/26/01	2.54	11,100	<2,500	11,000	3,910	123	261	891	--	--	--	--	
	01MW16B	FW	--	07/26/01	2.09	9,620	<2,500	9,390	3,700	122	209	745	--	--	--	--	
	01MW-16	FW	--	10/01/01	<0.500	448	<500	11,500	3,670	113	274	984	--	--	--	--	
	01MW-16	FW	--	01/02/02	<0.500	674	--	13,400	5,300	116	250	906	--	--	--	--	
	01MW-16	FW	--	04/02/02	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW-16	FW	--	07/02/02	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW-16	FW	--	10/02/02	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW-16	FW	--	04/01/03	<1,010	3,830	<926	13,300	4,100	75.5	227	754	--	--	--	--	
	--	TetraTech	--	10/01/03	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	TetraTech	--	01/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	TetraTech	--	04/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	TetraTech	--	07/01/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	TetraTech	--	11/17/04	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW-16	Landau	--	10/26/05	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	SoundEarth	--	06/20/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20061115	SoundEarth	--	11/15/06	<10	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	SoundEarth	--	12/12/06	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	SoundEarth	--	09/05/08	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	SoundEarth	--	01/26/09	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20090406	SoundEarth	--	04/06/09	--	920,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	120,000 ⁽⁸⁾	--	--	--	--	--	--	--	--	
	01MW16-20090729	SoundEarth	LCG	07/29/09	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20091009	SoundEarth	LCG	10/09/09	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--	
	--	SoundEarth	--	01/25/10	--	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20100408	SoundEarth	LCG	04/08/10	<0.5	880,000 ⁽⁸⁾	<50,000 ⁽⁸⁾	160,000 ⁽⁸⁾	--	--	--	--	--	--	--	--	
	01MW16-20100714	SoundEarth	LCG	07/14/10	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20110110	SoundEarth	LCG	01/10/11	<0.5	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20110415	SoundEarth	LCG	04/15/11	<0.219 ⁹	--	LNAPL	--	--	--	--	--	--	--	--	--	
	01MW16-20120412	SoundEarth	LCG	04/12/12	0.26	--	LNAPL	--	--	--	--	--	--	--	--	--	
01MW16-20120710	SoundEarth	LCG	07/10/12	<0.2	--	LNAPL	--	--	--	--	--	--	--	--	--		
--	SoundEarth	--	10/08/12	--	--	LNAPL	--	--	--	--	--	--	--	--	--		
01MW30	01-MW-30-20060621	SoundEarth	LF	06/21/06	--	908	<505	<50	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	<0.200	<250	
	01MW30-20061212	SoundEarth	LF	12/12/06	--	600	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000	
	01MW30-20081103	SoundEarth	LF	11/03/08	<0.5	--	--	--	--	--	--	--	--	--	--	--	
	01MW30-20090128	SoundEarth	LF	01/28/09	--	510 ⁴	<280	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20090408	SoundEarth	LF	04/08/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20090707	SoundEarth	LF	07/07/09	--	460 ⁴	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20100126	SoundEarth	LF	01/26/10	--	610 ⁴	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20100407	SoundEarth	LF	04/07/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20100713	SoundEarth	LF	07/13/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20110111	SoundEarth	LF	01/11/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20110414	SoundEarth	LF	04/14/11	--	380 ⁴	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20111206	SoundEarth	LF	12/06/11	--	290 ⁴	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20120405	SoundEarth	LF	04/05/12	--	340 ⁴	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	01MW30-20121012	SoundEarth	LF	10/12/12	--	200 ⁴	<250	<100	<1	<1	<1	<3	--	--	<1	--	
	MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



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Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
West Commodore Way																
Shallow Water-Bearing Zone																
01MW31	--	SoundEarth	--	07/13/06	--	Not sampled; insufficient water										
	--	SoundEarth	--	12/12/06	--	Not sampled; insufficient water										
	--	SoundEarth	--	09/05/08	--	Not sampled; insufficient water										
	--	SoundEarth	--	01/26/09	--	Not sampled; insufficient water										
	--	SoundEarth	--	04/06/09	--	Not sampled; insufficient water										
	--	SoundEarth	--	07/06/09	--	Not sampled; insufficient water										
	--	SoundEarth	--	01/25/10	--	Not sampled; insufficient water										
01MW32	01MW32-20060713	SoundEarth	LF	07/13/06	--	<253	<505	<50	71.1	2.07	1.52	4.93	<1.00	<0.200	<0.200	<250
	01MW32-20061213	SoundEarth	LF	12/13/06	--	<50	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW32-20090126	SoundEarth	LF	01/26/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20090408	SoundEarth	LF	04/08/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20090708	SoundEarth	LF	07/08/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20100204	SoundEarth	LF	02/04/10	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20100407	SoundEarth	LF	04/07/10	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20100708	SoundEarth	LF	07/08/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20110111	SoundEarth	LF	01/11/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20110414	SoundEarth	LF	04/14/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20111209	SoundEarth	LF	12/09/11	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20120406	SoundEarth	LF	04/06/12	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW32-20121011	SoundEarth	LF	10/11/12	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW33	01MW33-20060713	SoundEarth	LF	07/13/06	--	1,780	<500	960	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	<0.200	<250
	01MW33-20061212	SoundEarth	LF	12/12/06	--	2,300	370 [†]	1,500	31	1.4	3.5	3.8	<1	<1	<1	<1,000
	MW-99-20061212	SoundEarth	LF	12/12/06	--	2,000	270 ^x	1,700	36	1.4	4.4	4.3	--	--	<1	--
	--	SoundEarth	--	09/05/08	--	LNAPL										
	--	SoundEarth	--	01/26/09	--	LNAPL										
	--	SoundEarth	--	04/06/09	--	LNAPL										
	01MW33-20090717	SoundEarth	LCG	07/17/09	<0.5	LNAPL										
	01MW33-20091007	SoundEarth	LCG	10/07/09	<0.5	LNAPL										
	--	SoundEarth	--	01/25/10	--	LNAPL										
	01MW33-20100408	SoundEarth	LCG	04/08/10	<0.5	LNAPL										
	01MW33-20100714	SoundEarth	LCG	07/14/10	<0.5	LNAPL										
	01MW33-20110111	SoundEarth	LCG	01/11/11	<0.5	LNAPL										
	01MW33-20110414	SoundEarth	LCG	04/14/11	<0.219 ^l	LNAPL										
	01MW33-20120412	SoundEarth	LCG	04/12/12	<0.2 ^l	LNAPL										
	--	SoundEarth	--	10/08/12	--	LNAPL										
MTCA Cleanup Level for Groundwater					0.22⁽⁶⁾	500⁽⁷⁾	500⁽⁷⁾	800⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	20⁽⁷⁾	0.01⁽⁷⁾	5⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
West Commodore Way																
Shallow Water-Bearing Zone																
01MW34	--	SoundEarth	--	07/13/06	--	Not sampled; insufficient water					--	--	--	--	--	--
	01MW34-20061222	SoundEarth	LF	12/22/06	--	170	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000
	01MW34-20090126	SoundEarth	LF	01/26/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20090406	SoundEarth	LF	04/06/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20090707	SoundEarth	LF	07/07/09	--	340 ^a	<500 ^f	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20100125	SoundEarth	LF	01/25/10	--	210 ^a	310 ^g	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20100405	SoundEarth	LF	04/05/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20100706	SoundEarth	LF	07/06/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20110113	SoundEarth	LF	01/13/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW34-20110413	SoundEarth	LF	04/13/11	--	110 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW34-20111207	SoundEarth	LF	12/07/11	--	76 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW34-20120410	SoundEarth	LF	04/10/12	--	83 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW35	--	SoundEarth	--	07/13/06	--	Not sampled; insufficient water					--	--	--	--	--	
	01MW35-20061213	SoundEarth	LF	12/13/06	--	1,300	300 ^x	130	<1	<1	<1	<3	<1	<1	<1	<1,000
01MW36	01MW36-20060713	SoundEarth	LF	07/13/06	--	--	--	57	<0.200	<0.200	<0.200	<0.750	<1.00	<0.200	<0.200	<250
	01MW36-20061213	SoundEarth	LF	12/13/06	--	610	<250	<50	<1	<1	<1	<3	<1	<1	5.3	<1,000
	01MW36-20090128	SoundEarth	LF	01/28/09	--	710 ^a	360 ^a	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20090408	SoundEarth	LF	04/08/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20090708	SoundEarth	LF	07/08/09	--	390 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20100128	SoundEarth	LF	01/28/10	--	530 ^a	350 ^g	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20100708	SoundEarth	LF	07/08/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20110112	SoundEarth	LF	01/12/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20110414	SoundEarth	LF	04/14/11	--	680 ^a	420 ^a	<100	<1	<1	<1	<3	--	--	--	--
	01MW36-20111206	SoundEarth	LF	12/06/11	--	650 ^a	430 ^a	<100	<1	<1	<1	<3	--	--	--	--
01MW36-20120406	SoundEarth	LF	04/06/12	--	280 ^a	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW47	01MW47-20081222	SoundEarth	LF	12/22/06	<0.25	2,900	350	15,000	3,600	28	1,000	1,716	<1	<1	<1	<1,000 ^f
	01MW47-20081103	SoundEarth	LF	11/03/08	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW47-20090126	SoundEarth	LF	01/26/09	--	16,000	<250	14,000	4,100	21	420	220	--	--	--	--
	01MW47-20090406	SoundEarth	LF	04/06/09	--	3,200 ^x	<250	14,000	4,200	91	480	450	--	--	--	--
	--	SoundEarth	--	07/06/09	--	LNAPL					--	--	--	--	--	--
	--	SoundEarth	--	01/25/10	--	LNAPL					--	--	--	--	--	--
01MW49	01MW49-20061222	SoundEarth	LF	12/22/06	<0.25	2,600	<250	1,700	12	<1	<1	3.6	<1	<1	<1	<100,000
	01MW49-20090126	SoundEarth	LF	01/26/09	--	<50	<250	<100	19	<1	<1	<3	--	--	--	--
	MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
 TOC Holdings Co. Facility No. 01-600
 Bulk Terminal Property
 2737 West Commodore Way
 Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
West Commodore Way																
Shallow Water-Bearing Zone																
01MW50	01MW50-20061222	SoundEarth	LF	12/22/06	<0.25	550	<250	<50	<1	<1	<1	<3	<1	<1	<1	<1,000 ^f
	01MW50-20090126	SoundEarth	LF	01/26/09	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20100125	SoundEarth	LF	01/25/10	--	640 ^f	370 ^f	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20100405	SoundEarth	LF	04/05/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20100706	SoundEarth	LF	07/06/10	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20110113	SoundEarth	LF	01/13/11	--	<50 ⁽⁵⁾	<250 ⁽⁵⁾	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20110413	SoundEarth	LF	04/13/11	--	270 ^f	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20111207	SoundEarth	LF	12/07/11	--	220 ^f	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW50-20120410	SoundEarth	LF	04/10/12	--	390 ^f	<250	<100	<1	<1	<1	<3	--	--	--	--
01MW50-20121016	SoundEarth	LF	10/16/12	--	290 ^f	<250	<100	<1	<1	<1	<3	--	--	--	--	
01MW84	01MW84-20110422	SoundEarth	LF	04/22/11	--	64 ^f	<250	390	1.9	8.2	20	47	--	--	--	--
	01MW84-20111209	SoundEarth	LF	12/09/11	--	200 ^f	<250	1,800	5.4	21	190	180	--	--	--	--
	01MW84-20120406	SoundEarth	LF	04/06/12	--	260 ^f	<250	2,500	3.9	10	230	200	--	--	--	--
	01MW84-20121011	SoundEarth	LF	10/11/12	--	410 ^f	<250	2,200	4.1	23	250	290	--	--	--	--
01MW86	01MW86-20110422	SoundEarth	LF	04/22/11	--	4,200 ^f	640 ^f	5,700	1,200	<50	190	250	--	--	--	--
	01MW86-20111207	SoundEarth	LF	12/07/11	--	4,700 ^f	320 ^f	10,000	2,700	<40	130	<120	--	--	--	--
	01MW86-20120410	SoundEarth	LF	04/10/12	--	4,600	670 ^f	9,000	2,600	<40	210	180	--	--	--	--
	01MW86-20121016	SoundEarth	LF	10/16/12	--	5,600 ^f	550 ^f	7,700	3,400	<40	170	<120	--	--	--	--
	01MW86-20130130	SoundEarth	LF	01/30/13	--	5,700	470 ^f	2,600	840	3.7	100	33	--	--	--	--
01MW87	01MW87-20110503	SoundEarth	LF	05/03/11	--	100 ^f	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW87-20111207	SoundEarth	LF	12/07/11	<0.2 ^f	--	--	--	--	--	--	--	--	--	--	--
	01MW87-20120410	SoundEarth	LF	04/10/12	<0.2	--	--	--	--	--	--	--	--	--	--	--
	01MW87-20121016	SoundEarth	LF	10/16/12	<0.2	--	--	--	--	--	--	--	--	--	--	--
01MW88	01MW87-20130130	SoundEarth	LF	01/30/13	<0.2	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW88-20110503	SoundEarth	LF	05/03/11	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--
	01MW88-20111212	SoundEarth	LF	12/12/11	--	77 ^f	<300	<100	<1	<1	<1	<3	--	--	--	--
01MW88-20120406	SoundEarth	LF	04/06/12	--	<50	<250	<100	<1	<1	<1	<3	--	--	--	--	
West Commodore Way																
Intermediate Water-Bearing Zone																
01MW48	01MW48-20061222	SoundEarth	LF	12/22/06	<0.25	5,400	600	6,000	1,900	30	69	112	<1	<1	<1	<1,000 ^f
	01MW48-20090126	SoundEarth	LF	01/26/09	--	580 ^f	<250	5,500	1,900	11	59	160	--	--	--	--
	01MW48-20090406	SoundEarth	LF	04/06/09	--	580 ^f	<250	5,400	1,800	15	78	170	--	--	--	--
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE



Table 8
Groundwater Analytical Results for PCP, TPH, BTEX, MTBE, EDB, EDC, and Ethanol
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Sample Type	Date Sampled	Analytical Results (micrograms per liter)											
					PCP ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	GRPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	MTBE ⁽⁴⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	Ethanol ⁽⁴⁾
West Commodore Way																
Intermediate Water-Bearing Zone																
01MW51	01MW51-20061222	SoundEarth	LF	12/22/06	<0.25	370	<250	190	47	<1	<1	<3	<1	<1	<1	<1,000 ⁽⁷⁾
	01MW51-20081103	SoundEarth	LF	11/03/08	<0.5	--	--	--	--	--	--	--	--	--	--	--
	01MW51-20090126	SoundEarth	LF	01/26/09	--	650 ⁽²⁾	<250	510	4	2	<1	8	--	--	--	--
	01MW51-20090406	SoundEarth	LF	04/06/09	--	600 ⁽²⁾	<250	400	5	1	3	3	--	--	--	--
MTCA Cleanup Level for Groundwater					0.22 ⁽⁶⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	800 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	20 ⁽⁷⁾	0.01 ⁽⁷⁾	5 ⁽⁷⁾	NE

NOTES:

Red denotes concentration exceeds MTCA cleanup level for groundwater.

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater; The detection limit has been raised due to associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Data prior to 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

Samples dated 07/02/02 or 07/03/02 from monitoring wells 01MW02 through 01MW05, 01MW09, and 01MW18 through 01MW20 were collected prior to a dual-phase extraction pilot test conducted by FW.

⁽¹⁾ Analyzed by EPA Method 8270C-SIM.

⁽²⁾ Analyzed by Method NWTPH-Dx.

⁽³⁾ Analyzed by Method NWTPH-Gx.

⁽⁴⁾ Analyzed by EPA Method 8021B or 8260B.

⁽⁵⁾ Analyzed by Method NWTPH-Dx following a silica gel cleanup sample preparation.

⁽⁶⁾ MTCA Cleanup Regulation, CLARC, Ground Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁷⁾ MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

⁽⁸⁾ Result reported is analysis of LNAPL by EPA Method 8021B or EPH/VPH method (in parts per million - milligrams per kilogram or milligrams per liter).

Laboratory Notes:

⁽⁹⁾ Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

⁽¹⁰⁾ The associated numerical value is the approximate concentration of the analyte in the sample or the internal standard associated with the analyte is out of control limits and the reported concentration is an estimate.

⁽¹¹⁾ The result is below normal reporting limits, the value reported is an estimate.

⁽¹²⁾ The reported percent difference for this analyte is out of control limits. The reported concentration is an estimate.

⁽¹³⁾ The surrogate associated with the analyte is out of control limits. The reported concentration is an estimate.

⁽¹⁴⁾ The pattern of peaks present is not indicative of diesel or motor oil or the sample chromatographic pattern does not resemble the fuel standard used for quantitation.

-- = not analyzed/not applicable

< = not detected at a concentration exceeding the laboratory reporting limit

BTEX = benzene, toluene, ethylbenzene, and total xylenes

CLARC = Cleanup Levels and Risk Calculations

DRPH = diesel-range petroleum hydrocarbons

DUP = field duplicate

EDB = 1, 2-dibromoethane

EDC = 1,2-dichloroethane

EPA = U. S. Environmental Protection Agency

EPH = extractable petroleum hydrocarbons

FW = Foster Wheeler Environmental Corporation

GRPH = gasoline-range petroleum hydrocarbons

IT = IT Corporation

Landau = Landau Associates, Inc.

LCG = LNAPL conduit grab

LF = low flow

LNAPL = light nonaqueous-phase liquid

MTBE = methyl tertiary-butyl ether

MTCA = Washington State Model Toxics Control Act

NE = not established

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCP = pentachlorophenol

SoundEarth = SoundEarth Strategies, Inc.

TetraTech = TetraTech EC, Inc.

TPH = total petroleum hydrocarbon

VPH = volatile petroleum hydrocarbons

WAC = Washington Administrative Code



Table 9
LNAPL Analytical Results for PCP
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Sampled By	Date Sampled	Analytical Results
				PCP ⁽¹⁾ in Product (µg/g)
Bulk Terminal Property				
Shallow Water-Bearing Zone				
01MW05	01-MW-05-Product	FW	07/25/01	<5
	01MW05-20061115	SoundEarth	11/15/06	<100
01MW14	01-MW-14-Product	FW	07/25/01	140
	Decommissioned 2002			
01MW22	01MW-22	Landau	10/25/05	<375
	01MW22-20061115	SoundEarth	11/15/06	<500
	01MW22-20081008	SoundEarth	10/08/08	<100
01MW23	01MW-23	Landau	10/26/05	<375
	01MW23-20081008	SoundEarth	10/08/08	<100
01MW25	01MW-25	Landau	10/26/05	<375
01MW28	01MW-28	Landau	10/25/05	<375
	01MW28-20061115	SoundEarth	11/15/06	<100
01MW29	01MW-29	Landau	10/26/05	<375
	01MW29-20061115	SoundEarth	11/15/06	<100
01MW68	01MW68-20091009	SoundEarth	10/09/09	<100
01MW73	01MW73-20100317	SoundEarth	03/17/10	<100
West Commodore Way				
Shallow Water-Bearing Zone				
01MW10	01-MW-10-Product	FW	7/25/2001	<5
	01MW10-20061115	SoundEarth	11/15/06	<100
01MW16	01MW-16	Landau	10/26/05	<375
	01MW16-20061115	SoundEarth	11/15/06	<100
	01MW16-20091009	SoundEarth	10/09/09	<100
MTCA Cleanup Level for Groundwater				NE

NOTES:

Red denotes concentration exceeds MTCA cleanup level for groundwater.

Data prior to 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by EPA Method 8270C-SIM.

< = not detected at a concentration exceeding the laboratory µg/g = micrograms per gram

CLARC = Cleanup Levels and Risk Calculations

EPA = U. S. Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

Landau = Landau Associates, Inc.

LNAPL = light nonaqueous-phase liquid

MTCA = Washington State Model Toxics Control Act

NE = not established

PCP = pentachlorophenol

SoundEarth = SoundEarth Strategies, Inc.



Table 10
Groundwater Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)															
			Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
			Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve
Bulk Terminal Property																		
Shallow Water-Bearing Zone																		
01MW01	01MW-01	09/28/99	--	--	--	--	--	--	--	--	4.15	--	--	--	--	--	--	--
	01MW-01	12/16/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-01	07/26/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-01	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-01	01/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-01	04/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-01	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
01MW04	01MW-04	09/28/99	--	--	--	--	--	--	--	--	130	--	--	--	--	--	--	--
	01MW-01	12/16/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-04	07/27/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-04	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-04	01/01/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-04	04/01/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-04	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-04	08/01/03	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
01MW-04	07/01/04	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--	
01MW05	01MW05	07/03/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
01MW06	01MW-06	12/01/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-06	07/25/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-06	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-06	01/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-06	04/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-06	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
01MW08	01MW-08	12/01/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-08	07/26/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-08	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-08	01/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-08	04/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-08	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
MTCA Cleanup Level for Groundwater			5 ⁽²⁾		3,200 ⁽³⁾		5 ⁽²⁾		50 ⁽²⁾		15 ⁽²⁾		2 ⁽²⁾		80 ⁽³⁾		80 ⁽³⁾	



Table 10
Groundwater Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)															
			Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
			Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve
Bulk Terminal Property																		
Shallow Water-Bearing Zone																		
01MW12	01MW-12	12/05/00	--	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--
	01MW-12	07/27/01	--	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--
	01MW-12	10/01/01	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-12	01/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-12	04/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-12	07/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
01MW13	01MW-13	12/05/00	--	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--
	01MW-13	07/27/01	--	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--
	01MW-13	10/01/01	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-13	01/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-13	04/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-13	07/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
01MW17	01MW-17	07/27/01	--	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--
	01MW-17	10/01/01	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-17	01/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-17	04/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-17	07/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
01MW18	01MW18	07/03/02	--	--	--	--	--	--	--	--	1.97	1.26	--	--	--	--	--	--
01MW19	01MW-19	07/02/02	--	--	--	--	--	--	--	--	2.88	<1.00	--	--	--	--	--	--
	01MW19	07/02/02	--	--	--	--	--	--	--	--	<1.00	<2.00	--	--	--	--	--	--
01MW20	01MW-20	07/02/02	--	--	--	--	--	--	--	--	3.45	<1.00	--	--	--	--	--	--
	01MW20	07/02/02	--	--	--	--	--	--	--	--	1.36	<1.00	--	--	--	--	--	--
01MW37	01MW37-9-27-06	09/27/06	2.94	2.98	12.0	11.4	<1.00	<1.00	<1.00	1.78	<1.00	<1.00	<0.200	<0.200	<1.00	1.08	<1.00	<1.00
01MW38	01MW38-9-27-06	09/27/06	4.33	3.33	<10.0	<10.0	<1.00	<1.00	<1.00	1.27	<1.00	<1.00	<0.200	<0.200	<1.00	1.13	<1.00	<1.00
01MW39	01MW39-9-27-06	09/27/06	6.07	5.91	11.7	10.8	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.200	<0.200	<1.00	<1.00	<1.00	<1.00
01MW40	01MW40-9-27-06	09/27/06	1.56	<1.00	57.8	46.8	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.200	<0.200	<1.00	<1.00	<1.00	<1.00
01MW41	01MW41	09/27/06	5.49	2.21	23.8	20.7	<1.00	<1.00	<1.00	1.36	<1.00	<1.00	<0.200	<0.200	1.11	<1.00	<1.00	<1.00
01MW42	01MW42	09/27/06	20.5	8.05	14.3	<10.0	<1.00	<1.00	<1.00	2.05	<1.00	<1.00	<0.200	<0.200	1.90	2.43	<1.00	<1.00
01MW43	01MW43-9-27-06	09/27/06	13.4	14.5	21.3	20.7	<1.00	<1.00	2.14	2.41	<1.00	<1.00	<0.200	<0.200	1.90	<1.00	<1.00	<1.00
MTCA Cleanup Level for Groundwater			5 ⁽²⁾		3,200 ⁽³⁾		5 ⁽²⁾		50 ⁽²⁾		15 ⁽²⁾		2 ⁽²⁾		80 ⁽³⁾		80 ⁽³⁾	



Table 10
Groundwater Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)															
			Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
			Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve
West Commodore Way																		
Shallow Water-Bearing Zone																		
01MW02	01MW-02	09/28/99	--	--	--	--	--	--	--	--	84.9	--	--	--	--	--	--	--
	01MW-02	12/16/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-02	07/27/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-02	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-02	01/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-02	04/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-02	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
01MW03	01MW-03	09/28/99	--	--	--	--	--	--	--	--	87	--	--	--	--	--	--	--
	01MW-03	12/16/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-03	07/27/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-03A	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-03B	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-03A	01/01/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-03B	01/01/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-03A	04/01/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-03B	04/01/02	--	--	--	--	--	--	--	--	1.17	<1.00	--	--	--	--	--	--
01MW-03	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--	
01MW09	01MW-09	12/01/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-09	07/26/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-09	10/01/01	--	--	--	--	--	--	--	--	1.16	<1.00	--	--	--	--	--	--
	01MW-09	01/02/02	--	--	--	--	--	--	--	--	1.01	3.58	--	--	--	--	--	--
	01MW-09	04/02/02	--	--	--	--	--	--	--	--	1.16	<1.00	--	--	--	--	--	--
	01MW-09	07/02/02	--	--	--	--	--	--	--	--	1.19	--	--	--	--	--	--	--
01MW11	01MW-11	12/01/00	--	--	--	--	--	--	--	--	<0.00100	--	--	--	--	--	--	--
	01MW-11	07/26/01	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--	--
	01MW-11	10/01/01	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-11	01/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-11	04/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
	01MW-11	07/02/02	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--	--
MTCA Cleanup Level for Groundwater			5⁽²⁾		3,200⁽³⁾		5⁽²⁾		50⁽²⁾		15⁽²⁾		2⁽²⁾		80⁽³⁾		80⁽³⁾	



Table 10
Groundwater Analytical Results for RCRA 8 Metals
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)															
			Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
			Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve	Total	Dissolve
West Commodore Way																		
Shallow Water-Bearing Zone																		
01MW16	01MW-16A	07/26/01	--	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	--
	01MW-16B	07/26/01	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-16	10/01/01	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
	01MW-16	01/02/02	--	--	--	--	--	--	--	--	--	<1.00	<1.00	--	--	--	--	--
MTCA Cleanup Level for Groundwater			5⁽²⁾		3,200⁽³⁾		5⁽²⁾		50⁽²⁾		15⁽²⁾		2⁽²⁾		80⁽³⁾		80⁽³⁾	

NOTES:

Red denotes concentration exceeds MTCA cleanup level for groundwater.

Data prior to 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington, or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Samples analyzed by U. S. Environmental Protection Agency Method 6010/7000.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

⁽³⁾MTCA Cleanup Regulation, CLARC, Groundwater, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

-- = not measured / not applicable

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

MTCA = Washington State Model Toxics Control Act

RCRA = Resource Conservation and Recovery Act

WAC = Washington Administrative Code



Table 11
Groundwater Analytical Results for Selected PAHs
TOC Holdings Co. Facility No, 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Analytical Results (micrograms per liter)								Total TEQ Concentration ⁽¹⁾ (micrograms per liter)
			Naphthalene	Benz(a)anthracene TEF 0.1	Chrysene TEF 0.01	Benzo(a)pyrene TEF 1	Benzo(b)fluoranthene TEF 0.1	Benzo(k)fluoranthene TEF 0.1	Indeno(1,2,3-cd)pyrene TEF 0.1	Dibenz(a,h)anthracene TEF 0.1	
Bulk Terminal Property											
01MW01	01-MW-01-20060621	06/21/06	<0.500	--	--	--	--	--	--	--	--
01MW04	01-MW-04-20060621	06/21/06	104	--	--	--	--	--	--	--	--
	01MW04-20061213	12/13/06	2.6 ^{6a}	--	--	--	--	--	--	--	--
01MW06	01-MW-06-20060620	06/20/06	<0.500	--	--	--	--	--	--	--	--
	01MW06-20061212	12/12/06	<1	--	--	--	--	--	--	--	--
01MW08	01-MW-08-20060620	06/20/06	<0.500	--	--	--	--	--	--	--	--
01MW12	01-MW-12-20060621	06/21/06	6.83	--	--	--	--	--	--	--	--
01MW13	01-MW-13-20060621	06/21/06	<0.500	--	--	--	--	--	--	--	--
01MW17	01MW17	07/27/01	--	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.0755
	01-MW-17-20060621	06/21/06	<0.500	--	--	--	--	--	--	--	--
01MW18	01-MW-18-20060620	06/20/06	147	--	--	--	--	--	--	--	--
01MW19	01-MW-19-20060620	06/20/06	399	--	--	--	--	--	--	--	--
	01MW19-20061213	12/13/06	160	--	--	--	--	--	--	--	--
01MW20	01-MW-20-20060620	06/20/06	14.2	--	--	--	--	--	--	--	--
	01MW20-20061213	12/13/06	6.5	--	--	--	--	--	--	--	--
01MW21	01-MW-21-20060621	06/21/06	81.7	--	--	--	--	--	--	--	--
01MW23	01MW23-20100708	07/08/10	230 ^{6e}	--	--	--	--	--	--	--	--
01MW26	01-MW-26-20060621	06/21/06	4.43	--	--	--	--	--	--	--	--
01MW27	01-MW-27-20060621	06/21/06	131	--	--	--	--	--	--	--	--
01MW29	01MW29-20100712	07/12/10	4,300 ⁽²⁾	--	--	--	--	--	--	--	--
	01MW29-20100110-LNAPL	01/10/11	2,040 ⁽²⁾	--	--	--	--	--	--	--	--
01MW37	01MW37-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
01MW38	01MW38-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
01MW39	01MW39-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
01MW40	01MW40-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
01MW41	01MW41-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
	01MW41-20100715	07/15/10	350 ⁽²⁾	--	--	--	--	--	--	--	--
01MW42	01MW42-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
01MW43	01MW43-20060927	09/27/06	<2.50	--	--	--	--	--	--	--	--
01MW73	01MW73-20100708	07/08/10	2,200 ⁽²⁾	--	--	--	--	--	--	--	--
	01MW73-20110107-LNAPL	01/07/11	3,230 ⁽²⁾	--	--	--	--	--	--	--	--
C3IW01	C3-20100110-LNAPL	01/10/11	156 ⁽²⁾	--	--	--	--	--	--	--	--
G7IW01	G7-20110107-LNAPL	01/07/11	1,570 ⁽²⁾	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Groundwater			160⁽³⁾								0.1⁽³⁾



Table 11
Groundwater Analytical Results for Selected PAHs
TOC Holdings Co. Facility No, 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Analytical Results (micrograms per liter)								Total TEQ Concentration ⁽¹⁾ (micrograms per liter)
			Naphthalene	Benz(a)anthracene TEF 0.1	Chrysene TEF 0.01	Benzo(a)pyrene TEF 1	Benzo(b)fluoranthene TEF 0.1	Benzo(k)fluoranthene TEF 0.1	Indeno(1,2,3-cd)pyrene TEF 0.1	Dibenz(a,h)anthracene TEF 0.1	
West Commodore Way											
01MW03	01-MW-03-20060621	06/21/06	39.3	--	--	--	--	--	--	--	--
01MW11	01-MW-11-20060621	06/21/06	<0.500	--	--	--	--	--	--	--	--
01MW16	01MW16A	07/26/01	--	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.0755
	01MW16B	07/26/01	--	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.0755
01MW30	01-MW-30-20060621	06/21/06	<0.500	--	--	--	--	--	--	--	--
	01MW30-20061212	12/12/06	<1	--	--	--	--	--	--	--	--
01MW32	01MW32-20060713	07/13/06	2.50	--	--	--	--	--	--	--	--
01MW33	01MW33-20060713	07/13/06	2.50	--	--	--	--	--	--	--	--
01MW36	01MW36-20060713	07/13/06	<2.50	--	--	--	--	--	--	--	--
01MW47	01MW47-20061222	12/22/06	460	--	--	--	--	--	--	--	--
01MW48	01MW48-20061222	12/22/06	90 ^{ce}	--	--	--	--	--	--	--	--
01MW49	01MW49-20061222	12/22/06	5.4	--	--	--	--	--	--	--	--
01MW50	01MW50-20061222	12/22/06	<1	--	--	--	--	--	--	--	--
01MW51	01MW51-20061222	12/22/06	<1	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Groundwater			160⁽³⁾								0.1⁽³⁾

NOTES:

Red denotes concentration exceeds MTCA cleanup level.

Samples analyzed by EPA Method 8260B or 8270D.

⁽¹⁾Analytical result for each individual cPAH is multiplied by the TEF and all seven cPAH values are added. When analytical results are reported as less than the LRL, half of the LRL is used for the calculation, as shown.

⁽²⁾Result reported is analysis of LNAPL by Northwest EPH/VPH Methods (in parts per million - milligrams per kilogram or milligrams per liter).

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels For Groundwater.

Laboratory Notes:

^{ca}The second source results for this analyte fell outside of acceptance criteria. The value reported is an estimate.

^{cb}The portion of the analyte indicated may be due to carryover from previous sample injections.

-- = not analyzed/not applicable

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

cPAH = carcinogenic polycyclic aromatic hydrocarbon

EPA = U.S. Environmental Protection Agency

EPH = extractable petroleum hydrocarbons

LRL = laboratory reporting limit

MTCA = Washington State Model Toxics Control Act

PAH = polycyclic aromatic hydrocarbon

TEF = toxicity equivalency factor

TEQ = toxicity equivalent

VPH = volatile petroleum hydrocarbons

WAC = Washington Administrative Code



Table 12
Soil Results for TPH, BTEX, EDB, EDC, MTBE, Ethanol
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Interim Remedial Action Location	Soil Sample ID	Sample Location	Sample Type	Sampled By	Date Sampled	Depth (feet bgs or feet amsl)	Analytical Results (milligrams per kilogram)											
							DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	MTBE ⁽⁴⁾	Ethanol ⁽⁴⁾	
Bulk Terminal Property																		
1991 USTs Northeast of Office Building	P11	Base of North Fuel-Dispenser	Performance	Time Oil Company	09/16/91	4	220	--	12,000	330	370	390	1,600	--	--	--	--	
	P12	Base of South Fuel-Dispenser	Performance			4	66	--	1,300	27	21	26	64	--	--	--	--	
	N1	North Sidewall	Confirmation			12	17	--	<2	0.003	0.003	<0.002	<0.006	--	--	--	--	
	S1	South Sidewall				9	76	--	19	<0.22	0.38	0.099	0.056	--	--	--	--	
	E1	East Sidewall				10	<50	--	180	<0.22	2.5	5	7.2	--	--	--	--	
	W1	West Sidewall				11.5	<50	--	<2	0.013	0.06	0.023	0.065	--	--	--	--	
	Floor	Base				12.5	200	--	120	1.1	1.3	3.2	12	--	--	--	--	
	NW1	Northwest Sidewall				11.5	<50	--	<2	0.005	0.049	0.015	0.062	--	--	--	--	
Hydraulic Fluid Spill West Edge of Parking Lot	062002-1	South End of Excavation	Confirmation	FW	06/20/02	unknown	430	--	--	--	--	--	--	--	--	--		
	062002-2	20 Feet North of 062002-01				unknown	<25	--	--	--	--	--	--	--	--	--		
	062002-3	20 Feet North of 062002-02				unknown	319	--	--	--	--	--	--	--	--	--		
	062002-4	North End of Excavation				unknown	133	--	--	--	--	--	--	--	--	--		
	062002-5	Stockpile	Waste Profile			0.5	3,750	5,050	717	<0.15	<0.25	<0.25	3.62	--	--	--	--	
	062002-6	Stockpile				0.5	6,530	13,900	161	<0.03	<0.076	<0.126	1.45	--	--	--	--	
	062002-7	Stockpile				0.5	8,150	22,100	43	<0.03	<0.05	<0.05	0.341	--	--	--	--	
	062002-8	South End of Excavation	Confirmation			4	<50.0	<100	<20.0	--	--	--	--	--	--	--	--	
062002-9	Near 062002-2	4		DET	<100	<20.0	--	--	--	--	--	--	--					
Former Fuel Dispensers	D-N-1.5	North Dispenser	Confirmation	SoundEarth	04/22/06	1.5	<11.5	<288	151	<0.018	<0.090	<0.090	<0.270	<0.045	<0.045	<0.450	<18	
	D-S-1.5	South Dispenser				1.5	416	<144	<4.780	<0.020	0.230	<0.100	0.310	<0.051	<0.051	<0.510	<20	
Former UST North of Headquarters Building	HQ-B-12	Base of Excavation	Confirmation	SoundEarth	04/22/06	12	<11.6	<28.9	<4.900	0.0326	0.349	<0.109	<0.326	--	--	--	--	
	HQ-E-8	East Sidewall				8	132	<31.7	78.3	<0.021	<0.110	<0.110	2.90	<0.053	<0.053	<0.530	<21	
	HQ-N-8	North Sidewall				8	<12.2	<30.6	<5.030	<0.0198	<0.0988	<0.0988	<0.296	--	--	--	--	
	HQ-S-8	South Sidewall				8	<14.3	<35.8	<7.420	<0.0239	<0.120	<0.120	<0.359	--	--	--	--	
	HQ-W-8	West Sidewall				8	<12.6	<31.5	<5.950	<0.020	<0.100	<0.100	<0.310	<0.051	<0.051	<0.510	<20	
Former Vapor Knockout UST	VK-B-12	Base of Excavation	Confirmation	SoundEarth	04/22/06	12	<12.1	<30.3	<5.060	<0.00138	<0.00138	<0.00369	<0.00923	<0.00461	<0.00115	<0.000923	<20	
	VK-E-10	East Sidewall				10	<12.5	<31.3	<4.960	<0.00222	<0.00222	<0.00592	<0.0148	<0.00740	<0.00185	<0.00148	<20	
	VK-N-10	North Sidewall				10	2,560	<631	807	<0.022	<0.110	<0.110	<0.330	--	--	--	--	
	VK-S-10	South Sidewall				10	<12.9	<32.1	<5.250	<0.0208	<0.104	<0.104	<0.313	--	--	--	--	
	VK-W-10	West Sidewall				10	332	99.6	177	<0.00189	<0.00189	<0.00503	<0.0126	<0.00629	<0.00157	<0.00126	<21	
Former Heating Oil UST (#6) East of Headquarters Building	BOT-20100624-07	Base of Excavation	Confirmation	SoundEarth	06/24/10	7	<50	<250	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	SSW/ESW-Composite	East and South Sidewalls				4.5	83	<250	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	NSW/WSW-Composite	North and West Sidewalls				4.5	<50	<250	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	Stockpile Composite	Stockpile Composite				--	100	<250	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
A1 through G1 Grid excavation Stockpile 3	A1-G1-SP3-20100708-01	Stockpile 3	Waste Profile	SoundEarth	07/08/10	1	530	320	91	<0.02	<0.02	0.17	0.33	--	--	--	--	
	A1-G1-SP3Comp				09/10/10	1-1.5	--	--	--	--	--	--	--	--	--	--		
A1 through G1 Grid excavation Stockpile 2	A1-G1-SP2Comp	Stockpile 2 Composite	Waste Profile	SoundEarth	09/10/10	1-1.5	580	<250	130	<0.02	<0.02	0.08	0.17	--	--	--	--	
EX01	N8-EX01-NSW01-05	EX01-N8	Confirmation	SoundEarth	09/29/11	5	740	<250	800	<0.1	<0.1	2.8	3.4	--	--	--	--	
	O8-EX01-BTM01-08	EX01-O8				8	<50	<250	8.7	0.027	<0.02	<0.02	<0.06	--	--	--	--	
	P7-EX01-SSW01-02.5	EX01-P7	Performance			09/26/11	2.5	1,000	<250	300	<0.02	0.053	0.45	0.21	--	--	--	--
EX02	K8-EX02-ESW01-0.5	EX02-K8	Confirmation	SoundEarth	09/29/11	09/28/11	0.5	690 ^x	1,000	2.2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	K6-EX02-WSW03-02.5	EX02-K6				2.5	5,400	1,100	1,300	<0.4	4.7	7.7	5.7	--	--	--	--	
	FD01-20110929					2.5	12,000	2,400	1,300	<0.4	4.0	7.2	5.5	--	--	--	--	
	L8-EX02-ESW01-0.5	EX02-L8				0.5	70 ^x	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
MTCA Cleanup Level for Soil⁽⁵⁾							2,000	2,000	30	0.03	7	6	9	0.005	11⁽⁶⁾	0.1	NE	



Table 12
Soil Results for TPH, BTEX, EDB, EDC, MTBE, Ethanol
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Interim Remedial Action Location	Soil Sample ID	Sample Location	Sample Type	Sampled By	Date Sampled	Depth (feet bgs or feet amsl)	Analytical Results (milligrams per kilogram)												
							DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	MTBE ⁽⁴⁾	Ethanol ⁽⁴⁾		
Pipeline Utilidor Excavation	EX01F01-08	EX01F01	Confirmation	SoundEarth	05/01/12	8	3,900	<250	170	<0.02	0.066	0.84	3.7	<0.05	<0.05	<0.05	--		
	EX01F02-09.5	EX01F02			05/07/12	9.5	230	<250	14	<0.02	<0.02	<0.02	0.11	--	--	--	--		
	EX01F03-09.5	EX01F03			9.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--			
	SP01-01	Stockpile SP01	Waste Profile	SoundEarth	04/25/12	NA	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-02						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-03						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-04						<50	<250	7.0	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-05						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-06						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-07						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-08						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP01-Composite						92	<250	10	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP02-01	Stockpile SP02	Waste Profile	SoundEarth	05/08/12	NA	110	<250	71	<0.02	0.095	0.21	4.4	--	--	--	--		
	SP02-02						460	<250	240	<0.02	<0.02	0.41	5.7	--	--	--	--		
	SP02-03						<50	<250	29	<0.02	<0.02	<0.02	0.57	--	--	--	--		
	SP04-01	Stockpile SP04	Waste Profile	SoundEarth	05/08/12	NA	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP04-02						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP04-03						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP05-01	Stockpile SP05	Waste Profile	SoundEarth	05/10/12	NA	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	SP05-02						<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
SP05-03	<50						<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--			
SP05-04	<50						<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--			
SP05-05	<50						<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--			
EX03	B4-SW-EX03-NSW01-43	EX03-B4	Performance	SoundEarth	09/17/12	43	15,000	<250	790	0.17	2.0	16	25	--	--	--	--		
	B5-NE-EX03-NSW01-43	EX03-B5			09/17/12	43	3,200	<250	8.6	<0.02	<0.02	0.038	0.14	--	--	--	--		
	C5-NW-EX03-NSW01-44	EX03-C5			09/10/12	44	4,200	<250	110	<0.02	0.089	0.85	1.1	--	--	--	--		
	C6-SE-EX03-BTM01-42	EX03-C6			09/10/12	42	530	<250	12	<0.02	<0.02	0.20	0.59	--	--	--	--		
	C7-NW-EX03-NSW01-44	EX03-C7			09/10/12	44	1,900	<250	310	0.052	0.50	2.6	4.8	--	--	--	--		
	C8-SW-EX03-NSW01-43	EX03-C8			09/10/12	43	2,600	<250	9.3	<0.02	<0.02	0.12	0.13	--	--	--	--		
	D3-SE-EX03-WSW01-44	EX03-D3			09/10/12	44	24,000	3,300	2,100	6.7	2.2	11	31	--	--	--	--		
	D4-NW-EX03-NSW01-44	EX03-D4			09/10/12	44	30,000	730	5,900	3.3	12	56	430	--	--	--	--		
	D5-SE-EX03-BTM01-42	EX03-D5			09/10/12	42	800	<250	23	<0.02	<0.02	0.23	0.29	--	--	--	--		
	D8-SE-EX03-ESW01-44	EX03-D8			09/10/12	44	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	E4-SE-EX03-BTM02-39	EX03-E4			09/17/12	39	19,000	490 ^x	5,000	43	190	72	410	--	--	--	--		
	E7-NE-EX03-BTM01-42	EX03-E7			09/10/12	42	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	F3-NW-EX03-WSW01-44	EX03-F3			09/10/12	44	3,800	680	1,500	0.15	15	8.6	14	--	--	--	--		
	F6-SE-EX03-NSW01-39	EX03-F6			09/07/12	39	300	<250	11	0.096	0.031	0.21	0.26	--	--	--	--		
	F9-NW-EX03-ESW01-44	EX03-F9			09/10/12	44	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	G3-NE-EX03-BTM01-37	EX03-G3			09/17/12	37	10,000	480 ^f	1,100	0.45	6.8	16	39	--	--	--	--		
	G5-SE-EX03-BTM01-32	EX03-G5			08/31/12	32	790	<250	4.2	0.064	<0.02	<0.02	0.075	--	--	--	--		
	G7-NE-EX03-BTM01-32	EX03-G7			09/06/12	32	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	G9-SE-EX03-ESW01-36	EX03-G9			09/21/12	36	1,300	430	84	<0.02	<0.02	0.12	0.32	--	--	--	--		
	H2-SE-EX03-WSW01-41	EX03-H2			09/05/12	41	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--		
	H5-SW-EX03-BTM01-32	EX03-H5					09/06/12	32	590	<250	340	0.96	5.8	2.9	17	--	--	--	--
	H5-SW-EX03-BTM01-31.5						08/27/12	31.5	15,000	950 ^f	1,700	0.35	8.2	6.4	17	--	--	--	--
	H7-SW-EX03-BTM-31.5	EX03-H7					08/30/12	31.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	H8-NW-EX03-BTM-32	EX03-H8					08/30/12	32	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	I12-SE-EX03-NSW01-45	EX03-I12					09/21/12	45	<50	<250	5.7	<0.02	<0.02	0.080	0.42	--	--	--	--
	J3-SW-EX03-WSW-40.86	EX03-J3					08/24/12	40.86	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--
J5-NE-EX03-BTM01-31.5	EX03-J5			08/27/12	31.5	<50	<250	2.7	<0.02	<0.02	<0.02	<0.06	--	--	--	--			
J8-NE-EX03-BTM01-32.5	EX03-J8			09/05/12	32.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--			
MTCA Cleanup Level for Soil ⁽⁵⁾							2,000	2,000	30	0.03	7	6	9	0.005	11 ⁽⁶⁾	0.1	NE		



Table 12
Soil Results for TPH, BTEX, EDB, EDC, MTBE, Ethanol
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Interim Remedial Action Location	Soil Sample ID	Sample Location	Sample Type	Sampled By	Date Sampled	Depth (feet bgs or feet amsl)	Analytical Results (milligrams per kilogram)											
							DRPH ⁽¹⁾	ORPH ⁽¹⁾	GRPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	EDB ⁽⁴⁾	EDC ⁽⁴⁾	MTBE ⁽⁴⁾	Ethanol ⁽⁴⁾	
EX03	J9-SE-EX03-BTM01-32.5	EX03-J9	Performance	SoundEarth	09/11/12	32.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	J9-SW-EX03-SSW01-34.5	EX03-J10			09/11/12	34.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.02	<0.06	--	--	--	--
	J10-NW-EX03-ESW01-37	EX03-K4			09/21/12	37	5,700	790	84	<0.02	<0.02	0.12	0.64	<0.06	--	--	--	--
	K4-SW-EX03-SSW-40.71	EX03-K9			08/24/12	40.71	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	K9-NW-EX03-BTM01-37	EX03-L5			09/05/12	37	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	L5-SE-EX03-WSW01-43.5	EX03-L9			09/05/12	43.5	8,200	3,500	280	<0.02 ^j	<0.1	0.18	<0.3	<0.06	--	--	--	--
	L9-SE-EX03-BTM01-41	EX03-L12			09/12/12	41	1,600	<250	360	<0.02	0.32	0.90	0.33	<0.06	--	--	--	--
	L12-NE-EX03-BTM01-44	EX03-L14			09/21/12	44	3,800	710	73	<0.02	<0.02	0.11	0.25	<0.06	--	--	--	--
	L14-NW-EX03-ESW01-45	EX03-M9			09/21/12	45	2,200	1,200	290	<0.02 ^j	<0.1	0.69	2.7	<0.06	--	--	--	--
	M9-NW-EX03-SSW01-43	EX03-N6			09/12/12	43	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	N6-SW-EX03-WSW01-45.5	EX03-N8			09/12/12	45.5	650	760	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	N8-NE-EX03-BTM01-45	EX03-N10			09/12/12	45	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	N10-SE-EX03-ESW01-45.5	EX03-O12			09/12/12	45.5	13,000	9,000	70	<0.02 ^j	<0.1	0.79	0.69	<0.06	--	--	--	--
	O12-SW-EX03-BTM01-44	EX03-N12			10/29/12	44	<50	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
	N12-NE-EX03-SSW01-45	EX03-P7			09/21/12	45	1,100	<250	16	0.046	0.074	0.059	0.30	<0.06	--	--	--	--
	P7-SW-EX03-WSW01-43	EX03-Q7			09/12/12	43	11,000	1,200	130	<0.02 ^j	0.54	1.1	1.4	<0.06	--	--	--	--
	Q7-SW-EX03-SSW01-44	EX03-Q8			09/12/12	44	13,000	1,700	260	0.02 ^l	0.87	2.4	3.4	<0.06	--	--	--	--
	Q8-NE-EX03-BTM01-42	EX03-Q9			09/12/12	42	200	<250	<2	<0.02	<0.02	<0.02	<0.06	--	--	--	--	
Q9-SW-EX03-SSW01-43		09/12/12	43	13,000	1,600	930	0.18	2.2	13	15	<0.06	--	--	--	--			
MTCA Cleanup Level for Soil⁽⁵⁾							2,000	2,000	30	0.03	7	6	9	0.005	11⁽⁶⁾	0.1	NE	

NOTES:

Red denotes concentration exceeds MTCA cleanup level.

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for soil; the detection limit has been raised due to high concentrations of associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Data prior to April 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by Method NWTPH-Dx or EPA Method 8015 Modified.

⁽²⁾Analyzed by Method NWTPH-Gx or EPA Method 8015 Modified.

⁽³⁾Analyzed by EPA Method 8021B or 8260B.

⁽⁴⁾Analyzed by EPA Method 8260B.

⁽⁵⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽⁶⁾MTCA Cleanup Regulation, CLARC, Soil, MTCA Method B, Carcinogen, Standard Formula Value, Unrestricted Land Use, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

Laboratory Notes:

^lThe result is below reporting limits. The value reported is an estimate.

^jThe sample chromatographic pattern does not resemble the fuel standard used for quantitation.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

amsl = above mean sea level

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene, and total xylenes

CLARC = Cleanup Levels and Risk Calculations

DET = analyte detected

DRPH = diesel-range petroleum hydrocarbons

EDB = 1, 2-dibromoethane

EDC = 1,2-dichloroethane

EPA = United States Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

GRPH = gasoline-range petroleum hydrocarbons

MTBE = methyl tertiary-butyl ether

MTCA = Washington State Model Toxics Control Act

NA = not applicable

NE = cleanup level not established

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

SoundEarth = SoundEarth Strategies, Inc.

TPH = total petroleum hydrocarbons

UST = underground storage tank

WAC = Washington Administrative Code



Table 13
Soil Analytical Results for RCRA 8 Metals
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Interim Remedial Action Location	Soil Sample ID	Sample Location	Sample Type	Sampled By	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)								
							Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver	
Bulk Terminal Property															
1991 USTs Northeast of Office Building	PI1	Base of North Fuel-Dispenser	Performance	Time Oil Company	09/16/91	4	--	--	--	--	36	--	--	--	
	PI2	Base of South Fuel-Dispenser	Performance			4	--	--	--	--	--	--	--	--	--
	N1	North Sidewall	Confirmation			12	--	--	--	--	--	--	--	--	--
	S1	South Sidewall	Confirmation			9	--	--	--	--	--	--	--	--	--
	E1	East Sidewall	Confirmation			10	--	--	--	--	2.5	--	--	--	--
	W1	West Sidewall	Confirmation			11.5	--	--	--	--	--	--	--	--	--
	Floor	Base	Confirmation			12.5	--	--	--	--	--	--	--	--	--
	NW1	Northwest Sidewall	Confirmation			11.5	--	--	--	--	--	--	--		
Hydraulic Fluid Spill West Edge of Parking Lot	062002-1	South End of Excavation	Confirmation	FW	06/20/02	unknown	--	--	--	--	--	--	--	--	
	062002-2	20 Feet North of 062002-01	Confirmation			unknown	--	--	--	--	--	--	--	--	--
	062002-3	20 Feet North of 062002-02	Confirmation			unknown	--	--	--	--	--	--	--	--	--
	062002-4	North End of Excavation	Confirmation			unknown	--	--	--	--	--	--	--	--	--
	062002-5	Stockpile	Waste Profile			0.5	--	--	--	--	46.6	--	--	--	--
	062002-6	Stockpile	Waste Profile			0.5	--	--	--	--	71.8	--	--	--	--
	062002-7	Stockpile	Waste Profile			0.5	--	--	--	--	94.0	--	--	--	--
	062002-8	South End of Excavation	Confirmation			4	--	--	--	--	--	--	--	--	--
	062002-9	Near 062002-2	Confirmation			4	--	--	--	--	--	--	--	--	--
Former Fuel Dispensers	D-N-1.5	North Dispenser	Confirmation	SoundEarth	04/22/06	1.5	--	--	--	--	3.03	--	--	--	
	D-S-1.5	South Dispenser	Confirmation			1.5	--	--	--	--	137	--	--	--	
Former UST North of Headquarters Building	HQ-B-12	Base of Excavation	Confirmation	SoundEarth	04/22/06	12	--	--	--	--	5.78	--	--	--	
	HQ-E-8	East Sidewall	Confirmation			8	--	--	--	--	4.01	--	--	--	
	HQ-N-8	North Sidewall	Confirmation			8	--	--	--	--	--	--	--	--	
	HQ-S-8	South Sidewall	Confirmation			8	--	--	--	--	--	--	--	--	
	HQ-W-8	West Sidewall	Confirmation			8	--	--	--	--	4.50	--	--	--	
Former Vapor Knockout UST	VK-B-12	Base of Excavation	Confirmation	SoundEarth	04/22/06	12	--	--	--	--	2.55	--	--	--	
	VK-E-10	East Sidewall	Confirmation			10	--	--	--	--	3.61	--	--	--	
	VK-N-10	North Sidewall	Confirmation			10	--	--	--	--	--	--	--	--	
	VK-S-10	South Sidewall	Confirmation			10	--	--	--	--	--	--	--	--	
	VK-W-10	West Sidewall	Confirmation			10	--	--	--	--	4.62	--	--	--	
MTCA Cleanup Level for Soil							20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾	



Table 13
Soil Analytical Results for RCRA 8 Metals
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Interim Remedial Action Location	Soil Sample ID	Sample Location	Sample Type	Sampled By	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)								
							Arsenic	Barium	Cadmium	Chromium	Lead	Mercury ⁽²⁾	Selenium	Silver	
Bulk Terminal Property															
A1 through G1 Grid excavation Stockpile 3	A1-G1-SP3-20100708-01	Stockpile 3	Waste Profile	SoundEarth	07/08/10	1	--	--	--	--	--	--	--	--	--
	A1-G1-SP3Comp				09/10/10	1-1.5	3.71	58.9	<1	20.1	23.6	<0.2	<1	<1	
A1 through G1 Grid excavation Stockpile 2	A1-G1-SP2Comp	Stockpile 2 Composite	Waste Profile	SoundEarth	09/10/10	1-1.5	2.93	76.2	<1	24.4	11.3	<0.2	<1	<1	
Stockpile SP01	SP01-01	Stockpile SP01	Waste Profile	SoundEarth	04/25/12	NA	3.03	53.7	<1	14.8	17.8	<0.1	<1	<1	
	SP01-02						4.55	97.1	<1	17.9	20.8	<0.1	<1	<1	
	SP01-03						4.07	87.4	<1	16.5	13.9	<0.1	<1	<1	
	SP01-04						3.43	66.3	<1	13.2	9.25	<0.1	<1	<1	
	SP01-05						6.25	139	<1	27.7	10.9	<0.1	<1	<1	
Stockpile SP02	SP02-02	Stockpile SP02	Waste Profile	SoundEarth	05/08/12	NA	3.50	73.2	<1	20.4	6.60	<0.1	<1	<1	
Stockpile SP03	SP03-Composite	Stockpile SP03	Waste Profile	SoundEarth	05/08/12	NA	4.07	84.4	<1	15.3	20.9	<0.1	<1	<1	
Stockpile SP05	SP05-01	Stockpile SP05	Waste Profile	SoundEarth	05/10/12	NA	3.57	53.0	<1	11.8	12.3	<0.1	<1	<1	
	SP05-04						3.23	59.9	<1	10.8	9.16	<0.1	<1	<1	
MTCA Cleanup Level for Soil							20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾	

NOTES:

Data prior to April 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by EPA Method 200.8, 6000/7000 series, or by Inductively-coupled plasma emission spectroscopy.

⁽²⁾Analyzed by EPA Method 1631E or by Inductively-coupled plasma emission spectroscopy.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽⁴⁾MTCA Cleanup Regulation, CLARC, Soil, MTCA Method B, Non-Carcinogen, Standard Formula Value, Unrestricted Land Use, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

-- = not analyzed

<= not detected at a concentration exceeding the laboratory reporting limit

bgs = below ground surface

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

MTCA = Washington State Model Toxics Control Act

NA = not applicable

RCRA = Resource Conservation and Recovery Act

SoundEarth = SoundEarth Strategies, Inc.

UST = underground storage tank

WAC = Washington Administrative Code



Table 14
Soil Analytical Results for Semivolatile Phenols
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Sampled by	Date Sampled	Depth (feet bgs or feet amsl)	Analytical Results ⁽¹⁾ (mg/kg)
					Pentachlorophenol
Bulk Terminal Property					
PCP Mixing Area	PEC-ES-01	FW	09/12/02	0.5-1.5	1.05
	PEC-SS-01			0.5-1.5	<0.250
	PEC-SS-02			0.5-1.5	<0.0500
	PEC-SS-03			~7.0	0.0754
	PEC-ES-02		09/17/02	~5.0	1.01
	PEC-SS-04			0.5-1.5	<0.0500
	PEC-SS-05			0.5-1.5	<0.0500
	PEC-SS-06			0.5-1.5	<0.0500
PEC-SS-07	0.5-1.5	<0.0500			
Excavation #1					
EX01-O7	O7-EX01-WSW01-05	SoundEarth	09/26/11	5	<0.08
EX01-P7	P7-EX01-SSW01-02.5	SoundEarth	09/26/11	2.5	<0.08
EX01-P8	P8-EX01-SSW01-05	SoundEarth	09/26/11	5	<0.08
EX01-N8	N8-EX01-NSW01-05	SoundEarth	09/29/11	5	0.38
EX01-O8	O8-EX01-ESW01-05	SoundEarth	09/29/11	5	<0.08
	O8-EX01-BTM01-08			8	<0.08
Excavation #2					
EX02-K8	K8-EX02-ESW01-0.5	SoundEarth	09/28/11	0.5	1.2
EX02-K6	K6-EX02-WSW03-02.5	SoundEarth	09/29/11	2.5	<0.08
	FD01-20110929				<0.08
EX02-L8	L8-EX02-ESW01-0.5	SoundEarth	09/29/11	0.5	<0.08
Excavation #3					
EX03-E4	EX03-E4-NE-NSW-43	SoundEarth	08/20/12	43	0.19
	EX03-E4-NE-NSW-42.1			42.1	2.1
	E4-NE-EX03-BTM01-41		09/06/12	41	0.86
	EX03-E4-SE-NSW-45		08/13/12	45	<0.1
	EX03-E4-SE-NSW-43			43	5.6
	EX03-E4-SE-NSW-42.1		08/17/12	42.1	38
	E4-SE-EX03-BTM01-41		08/28/12	41	15
	E4-SE-EX03-BTM01-39		08/30/12	39	<0.1
EX03-E5	E5-SW-EX03-BTM01-41	SoundEarth	09/06/12	41	0.40
MTCA Cleanup Level for Soil					2.5⁽²⁾



Table 14
Soil Analytical Results for Semivolatile Phenols
Interim Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Sampled by	Date Sampled	Depth (feet bgs or feet amsl)	Analytical Results ⁽¹⁾ (mg/kg)
					Pentachlorophenol
EX03-F4	EX03-F4-NE-WSW-45	SoundEarth	08/13/12	45	40
	EX03-F4-NE-WSW-43			43	20
	EX03-F4-NE-WSW-42.1		08/17/12	42.1	4.9
	F4-NE-EX03-BTM02-39		09/12/12	39.00	<0.1
	EX03-F4-NE-SSW-45		08/13/12	45	<0.1
	EX03-F4-NE-SSW-43			43	21
	EX03-F4-NE-SSW-42.1		08/17/12	42.1	3.0
	F4-NE-EX03-BTM01-41		09/06/12	41	0.47
	EX03-F4-NW-WSW-43		08/20/12	43	2.9
	EX03-F4-NW-WSW-42.1			42.1	2.0
	F4-NW-EX03-BTM01-41		09/06/12	41.0	3.8
	F4-NW-EX03-BTM01-39			39.0	<0.1
	EX03-F4-SE-SSW-43		08/20/12	43	3.2
	EX03-F4-SE-SSW-42.1			42.1	0.10
	MTCA Cleanup Level for Soil				

NOTES:

Red denotes concentration exceeds MTCA cleanup level.

Sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Analyzed by EPA Method 8270 Modified or 8270C-SIM.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

< = not detected at a concentration exceeding the laboratory reporting limit

amsl = above mean sea level

bgs = below ground surface

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

FW = Foster Wheeler Environmental Corporation

mg/kg = milligrams per kilogram

MTCA = Washington State Model Toxics Control Act

PCP = pentachlorophenol

SoundEarth = SoundEarth Strategies, Inc.

WAC = Washington Administrative Code



Table 15
Soil Analytical Results for VPH and EPH
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Depth (feet bgs)	Date Sampled	Analytical Results (milligrams per kilogram)																			
				VPH								EPH											
				Aliphatics				Aromatics				Total ⁽¹⁾	Aliphatics					Aromatics					
				C5-C6	C6-C8	C8-C10	C10-C12	C8-C10	C10-C12	C13	C8-C10		C10-C12	C12-C16	C16-C21	C21-C34	C8-C10	C10-C12	C12-C16	C16-C21	C21-C34	Total ⁽¹⁾	
Bulk Terminal Property																							
Well 01MW21	01MW21-5	5	12/02/02	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	5.00	<5.00	<5.00	<5.00	<5.00	<5.00	--	<5.00	<5.00	<5.00	<5.00	5.00	
Well 01MW23	01MW23-5	5	12/02/02	<20.0	43.1	89.9	141	87.6	230	289	891	42.9	149	484	330	112	--	42.9	163	260	93.5	1,677	
Well 01MW24	01MW24-5	5	12/03/02	<25.0	46.1	97.7	138	85.9	157	217	754	60.0	168	512	284	63.9	--	42.3	153	178	20.6	1,482	
Well 01MW29	01MW29-5	5	12/03/02	<5.00	<5.00	<5.00	7.99	<5.00	9.35	15.5	42.8	7.55	22.3	49.8	24.3	<5.00	--	5.87	26.4	23.1	<5.00	164	
Boring LR01-5	LR01	5	12/03/02	<50.0	94.9	145	258	123	490	939	2,052	105	400	1,460	924	<50.0	--	165	1,140	1,540	<50.0	5784	
Boring LR03-5	LR03	5	12/04/02	<5.00	<5.00	<5.00	11.3	<5.00	23.4	63.4	108	8.49	42.3	204	134	8.98	--	12.2	127	139	<5.00	678	
Boring LR05-5	LR05	5	12/04/02	<50.0	<50.0	61.7	104	68.4	237	558	1,034	42.0	151	669	480	44.1	--	35.9	224	452	36.3	2,134	
West Commodore Way																							
Utilidor Excavation EX01	EX01F01-08	8	05/01/12	<0.455	<0.455	0.915	4.28	32.1	150	5.68	193	11.9	30	177	153	9.80	12.4	15.7	44.1	115	6.07	575	

NOTES:

Chemical analyses conducted by TestAmerica Laboratories of Bothell, Washington.

Samples analyzed by Washington State Department of Ecology-published VPH and EPH Methods.

⁽¹⁾Total = the sum of analytical results for each range. When analytical result is reported as less than the LRL, half the LRL is used for the calculation.

< = concentration is below the laboratory reporting limit

-- = not analyzed

bgs = below ground surface

EPH = extractable petroleum hydrocarbons

LRL = method reporting limit

VPH = volatile petroleum hydrocarbons



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (nanograms per kilogram)																									
				Total TCDDs		Total PeCDDs		Total HxCDDs		Total HpCDDs		Total TCDFs		Total PeCDFs		Total HxCDFs		Total HpCDFs		2,3,7,8 TCDD		1,2,3,7,8 PeCDD		1,2,3,4,7,8 HxCDD		1,2,3,6,7,8 HxCDD		1,2,3,7,8,9 HxCDD	
				Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Corrected for TEF								
Bulk Terminal Property																													
Borings																													
B121	B121-0.5	12/28/09	46	26.5	2.65E-05	231	2.31E-04	2,660	2.66E-03	25,100	2.51E-02	67.1	6.71E-05	322	3.22E-04	1,020	1.02E-03	9,370	9.37E-03	7.60	7.60	99.7	99.7	210	21.0	561	56.1	431	43.1
	B121-02.5		44	< 0.129	1.29E-07	0.594	5.94E-07	7.39	7.39E-06	90.7	9.07E-05	0.307	3.07E-07	1.14	1.14E-06	6.68	6.68E-06	31.2	3.12E-05	< 0.129	0.0645	0.380	0.380	0.533	0.0533	1.77	0.177	1.48	0.148
	B121-04.5		42	< 0.00774	7.74E-09	< 0.0174	1.74E-08	< 0.0426	4.26E-08	0.720	7.20E-07	0.407	4.07E-07	< 0.0265	2.65E-08	< 0.0326	3.26E-08	0.173	1.73E-07	< 0.00774	0.00387	< 0.0174	0.00870	< 0.0480	0.00240	< 0.0426	0.00213	< 0.0464	0.00232
	B121-07.5		39	< 0.0121	1.21E-08	< 0.03	3.00E-08	0.386	3.86E-07	0.559	5.59E-07	< 0.0232	2.32E-08	< 0.0266	2.66E-08	0.223	2.23E-07	1.26	1.26E-06	< 0.0121	0.00605	< 0.0300	0.0150	< 0.0486	0.00243	0.112	0.0112	< 0.0468	0.00234
B122	B122-0.5	12/28/09	45.7	14.7	1.47E-05	90.9	9.09E-05	1,140	1.14E-03	15,000	1.50E-02	35.7	3.57E-05	120	1.20E-04	444	4.44E-04	4,830	4.83E-03	3.13	3.13	31.2	31.2	74.0	7.40	225	22.5	163	16.3
	B122-02.5		43.7	0.686	6.86E-07	12.1	1.21E-05	179	1.79E-04	2,030	2.03E-03	3.07	3.07E-06	19.3	1.93E-05	145	1.45E-04	708	7.08E-04	0.686	0.686	5.24	5.24	12.4	1.24	34.7	3.47	28.5	2.85
	B122-04.5		41.7	0.0955	9.55E-08	< 0.0338	3.38E-08	2.07	2.07E-06	27.1	2.71E-05	0.657	6.57E-07	0.127	1.27E-07	1.84	1.84E-06	12.1	1.21E-05	< 0.0194	0.00970	< 0.0338	0.0169	0.108	0.0108	0.469	0.0469	0.305	0.0305
	B122-07.5		38.7	< 0.00769	7.69E-09	< 0.0170	1.70E-08	< 0.0386	3.86E-08	1.27	1.27E-06	< 0.108	1.08E-07	< 0.0236	2.36E-08	< 0.0178	1.78E-08	< 0.0548	5.48E-08	< 0.00769	0.00385	< 0.0170	0.00850	< 0.0435	0.00218	< 0.0386	0.00193	< 0.0420	0.00210
B123	B123-0.5	12/28/09	45.3	4.04	4.04E-06	35.7	3.57E-05	309	3.09E-04	3,370	3.37E-03	6.66	6.66E-06	43.9	4.39E-05	256	2.56E-04	1,370	1.37E-03	1.25	1.25	14.4	14.4	24.1	2.41	71.1	7.11	52.7	5.27
	B123-02.5		43.3	< 0.215	2.15E-07	< 0.179	1.79E-07	1.43	1.43E-06	12.8	1.28E-05	< 0.247	2.47E-07	< 0.159	1.59E-07	0.869	8.69E-07	3.89	3.89E-06	< 0.215	0.108	< 0.179	0.0895	< 0.316	0.0158	< 0.286	0.0143	< 0.303	0.0152
	B123-04.5		41.3	< 0.114	1.14E-07	< 0.0841	8.41E-08	22.9	2.29E-05	531	5.31E-04	< 0.0962	9.62E-08	0.946	9.46E-07	32.0	3.20E-05	237	2.37E-04	< 0.114	0.0570	< 0.0841	0.0421	0.630	0.0630	6.49	0.649	1.50	0.150
	B123-07.5		38.3	< 0.147	1.47E-07	< 0.123	1.23E-07	< 0.129	1.29E-07	2.04	2.04E-06	< 0.155	1.55E-07	< 0.152	1.52E-07	< 0.108	1.08E-07	0.549	5.49E-07	< 0.147	0.0735	< 0.123	0.0615	< 0.142	0.00710	< 0.129	0.00645	< 0.136	0.00680
B128	B128-01.5	12/28/09	45.1	10.5	1.05E-05	14.5	1.45E-05	21.4	2.14E-05	34.0	3.40E-05	143	1.43E-04	294	2.94E-04	143	1.43E-04	19.4	1.94E-05	0.298	0.298	1.09	1.09	0.714	0.0714	1.70	0.170	1.41	0.141
	B128-04.5		42.1	< 0.0895	8.95E-08	< 0.07348	7.35E-08	0.652	6.52E-07	2.81	2.81E-06	< 0.108	1.08E-07	0.494	4.94E-07	0.578	5.78E-07	2.60	2.60E-06	< 0.0895	0.0448	< 0.0734	0.0367	< 0.126	0.00630	< 0.114	0.00570	< 0.121	0.00605
	B128-07.5		39.1	< 0.00379	3.79E-09	< 0.00134	1.34E-09	5.14	5.14E-06	116	1.16E-04	0.92	9.20E-07	2.43	2.43E-06	7.34	7.34E-06	43.3	4.33E-05	< 0.00379	0.00190	0.0537	0.0537	0.103	0.0103	1.29	0.129	0.556	0.0556
	B128-12.5		34.1	0.0614	6.14E-08	< 0.034	3.40E-08	6.76	6.76E-06	156	1.56E-04	7.2	7.20E-06	12.1	1.21E-05	12.3	1.23E-05	56.6	5.66E-05	< 0.0170	0.0085	0.132	0.132	0.144	0.0144	1.78	0.178	0.555	0.0555
B138	B138-0.5	03/01/10	45.5	< 0.0854	8.54E-08	< 0.0795	7.95E-08	3.25	3.25E-06	29.8	2.98E-05	< 0.105	1.05E-07	0.410	4.10E-07	2.21	2.21E-06	8.72	8.72E-06	< 0.0854	0.0427	< 0.0795	0.0398	0.258	0.0258	0.695	0.0695	0.660	0.0660
	B138-02.5		43.5	0.0517	5.17E-08	3.95	3.95E-06	49.9	4.99E-05	624	6.24E-04	0.653	6.53E-07	3.14	3.14E-06	38.7	3.87E-05	232	2.32E-04	0.102	0.102	1.73	1.73	3.48	0.348	11.0	1.10	9.09	0.909
	B138-04.5		41.5	0.0975	9.75E-08	0.405	4.05E-07	7.30	7.30E-06	157	1.57E-04	0.369	3.69E-07	0.0908	9.08E-08	8.29	8.29E-06	69.7	6.97E-05	< 0.00799	0.00400	0.133	0.133	0.341	0.0341	2.00	0.200	0.944	0.0944
B139	B139-0.5	03/01/10	45.5	1.29	1.29E-06	27.9	2.79E-05	243	2.43E-04	1,980	1.98E-03	1.32	1.32E-06	19.2	1.92E-05	163	1.63E-04	674	6.74E-04	0.888	0.888	13.3	13.3	20.5	2.05	55.8	5.58	42.2	4.22
	B139-02.5		43.5	< 0.126	1.26E-07	< 0.0898	8.98E-08	0.445	4.45E-07	6.86	6.86E-06	< 0.108	1.08E-07	< 0.0814	8.14E-08	0.248	2.48E-07	2.01	2.01E-06	< 0.126	0.0630	< 0.0898	0.0449	< 0.129	0.00645	0.177	0.0177	< 0.124	0.00620
	B139-04.5		41.5	< 0.287	2.87E-07	8.02	8.02E-06	99.7	9.97E-05	933	9.33E-04	1.29	1.29E-06	6.98	6.98E-06	69.3	6.93E-05	324	3.24E-04	0.402	0.402	5.02	5.02	7.76	0.776	23.3	2.33	16.9	1.69
	B139-06		40	0.117	1.17E-07	< 0.0242	2.42E-08	0.800	8.00E-07	3.75	3.75E-06	0.154	1.54E-07	< 0.0327	3.27E-08	0.133	1.33E-07	0.139	1.39E-07	0.0845	0.0845	< 0.0242	0.0121	< 0.0513	0.00257	0.0638	0.00638	0.125	0.0125
B140	B140-0.5	03/01/10	45.5	0.434	4.34E-07	1.15	1.15E-06	7.05	7.05E-06	49.3	4.93E-05	2.23	2.23E-06	0.950	9.50E-07	2.94	2.94E-06	12.6	1.26E-05	< 0.0387	0.0194	0.351	0.351	0.435	0.0435	1.11	0.111	1.10	0.110
	B140-02.5		43.5	< 0.0146	1.46E-08	< 0.019	1.90E-08	0.135	1.35E-07	3.06	3.06E-06	0.274	2.74E-07	< 0.0173	1.73E-08	0.0828	8.28E-08	0.474	4.74E-07	< 0.0146	0.00730	< 0.0190	0.00950	< 0.0521	0.00261	< 0.0462	0.00231	< 0.0503	0.00252
	B140-04.5		41.5	< 0.0224	2.24E-08	< 0.0181	1.81E-08	0.0602	6.02E-08	2.43	2.43E-06	< 0.0395	3.95E-08	< 0.0202	2.02E-08	< 0.0314	3.14E-08	< 0.0613	6.13E-08	< 0.0224	0.0112	< 0.0181	0.00905	< 0.0679	0.00340	< 0.0602	0.00301	< 0.0655	0.00328
B141	B141-0.5	03/01/10	45.6	1.49	1.49E-06	2.68	2.68E-06	10.2	1.02E-05	88.6	8.86E-05	1.57	1.57E-06	1.61	1.61E-06	6.44	6.44E-06	24.2	2.42E-05	0.0787	0.0787	0.488	0.488	0.761	0.0761	1.71	0.171	1.74	0.174
	B141-02.5		43.6	< 0.0475	4.75E-08	< 0.0101	1.01E-08	1.00	1.00E-06	7.40	7.40E-06	< 0.0219	2.19E-08	< 0.00994	9.94E-09	0.148	1.48E-07	1.00	1.00E-06	< 0.0475	0.00238	< 0.0101	0.00505	< 0.0656	0.00328	0.149	0.0149	0.267	0.0267
	B141-04.5		41.6	0.0968	9.68E-08	< 0.00844	8.44E-09	4.55	4.55E-06	50.4	5.04E-05	< 0.0113	1.13E-08	0.560	5.60E-07	2.69	2.69E-06	13.7	1.37E-05	0.0547	0.0547	0.168	0.168	0.263	0.0263	0.902	0.0902	0.836	0.0836
B142	B142-0.5	03/01/10	45.6	1.22	1.22E-06	8.51	8.51E-06	115	1.15E-04	1,700	1.70E-03	1.37	1.37E-06	12.1	1.21E-05	42.3	4.23E-05	612	6.12E-04	0.405	0.405	3.51	3.51	6.40	0.640	26.9	2.69	15.8	1.58
	B142-02.5		43.6	< 0.00555	5.55E-09	0.182	1.82E-07	10.1	1.01E-05	107	1.07E-04	< 0.0158	1.58E-08	1.1	1.10E-06	6.51	6.51E-06	34.1	3.41E-05	0.0622	0.0622	0.465	0.465	0.714	0.0714	2.16	0.216	1.86	0.186
	B142-04.5		41.6	0.170	1.70E-07	2.22	2.22E-06	34.0	3.40E-05	469	4.69E-04	1.11	1.11E-06	2.71	2.71E-06	29.5	2.95E-05	186	1.86E-04	0.125	0.125	0.999	0.999	1.80	0.180	8.05	0.805	4.69	0.469
B143	B1																												



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (nanograms per kilogram)																								2,3,7,8 TCDD - TEQ ⁽²⁾ (nanograms per kilogram)
			1,2,3,4,6,7,8 HpCDD		OCDD		2,3,7,8 TCDF		1,2,3,7,8 PeCDF		2,3,4,7,8 PeCDF		1,2,3,4,7,8 HxCDF		1,2,3,7,8,9 HxCDF		2,3,4,6,7,8 HxCDF		1,2,3,4,6,7,8 HpCDF		1,2,3,4,7,8,9 HpCDF		OCDF				
			0.01		0.0003		0.1		0.03		0.3		0.1		0.1		0.1		0.1		0.01		0.01		0.0003		
			Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	
Bulk Terminal Property																											
Borings																											
B121	B121-0.5	12/28/09	18,700	187	222,000	66.6	1.21	0.121	3.31	0.0993	5.00	1.50	56.0	5.60	43.0	4.30	2.05	0.205	69.1	6.91	2,900	29.0	163	1.63	16,200	4.86	535
	B121-0.5		52.6	0.526	559	0.168	< 0.0843	0.00422	< 0.0663	0.000995	< 0.0656	0.00984	0.239	0.0239	0.227	0.0227	< 0.162	0.00810	0.204	0.0204	8.01	0.0801	0.720	0.00720	34.1	0.0102	1.70
	B121-0.4.5		0.413	0.00413	6.57	0.00197	< 0.0186	0.000930	< 0.0267	0.000401	< 0.0265	0.00398	< 0.0339	0.00170	< 0.0326	0.00163	< 0.0424	0.00212	< 0.0363	0.00182	0.101	0.00101	< 0.0637	0.000319	0.370	0.000111	0.0395
	B121-0.7.5		2.57	0.0257	24.3	0.00729	< 0.0232	0.00116	< 0.0268	0.000402	< 0.0266	0.00399	< 0.0299	0.00150	< 0.0287	0.00144	< 0.0374	0.00187	< 0.0320	0.00160	0.327	0.00327	< 0.0991	0.000496	1.05	0.000315	0.0860
B122	B122-0.5	12/28/09	6,450	64.5	99,900	30.0	1.59	0.159	1.54	0.0462	2.10	0.630	20.5	2.05	15.4	1.54	< 0.326	0.0163	8.00	0.800	912	9.12	74.6	0.746	5,300	1.59	192
	B122-0.5		1,180	11.8	12,100	3.63	< 0.106	0.00530	0.281	0.00843	0.322	0.0966	3.51	0.351	2.81	0.281	< 0.365	0.0183	1.67	0.167	162	1.62	11.3	0.113	859	0.258	31.8
	B122-0.4.5		16.3	0.163	143	0.0429	< 0.0972	0.00486	< 0.0249	0.000374	< 0.0238	0.00357	0.0603	0.00603	0.0366	0.00366	< 0.0436	0.00218	< 0.0366	0.00183	2.32	0.0232	< 0.129	0.000645	13.1	0.00393	0.371
	B122-0.7.5		0.560	0.00560	3.77	0.00113	< 0.0108	0.000540	< 0.0239	0.000359	< 0.0236	0.00354	< 0.0186	0.000930	< 0.0178	0.000890	< 0.0232	0.00116	< 0.0199	0.00100	< 0.0548	0.000274	< 0.0747	0.000374	< 0.0548	0.0000822	0.0344
B123	B123-0.5	12/28/09	1,990	19.9	25,300	7.59	0.591	0.0591	0.739	0.0222	1.08	0.324	6.12	0.612	5.33	0.533	< 1.42	0.0710	8.33	0.833	275	2.75	67.4	0.674	1,510	0.453	64.3
	B123-0.2.5		6.46	0.0646	74.0	0.0222	< 0.247	0.0124	< 0.161	0.00242	< 0.159	0.00239	< 0.200	0.0100	< 0.191	0.00955	< 0.257	0.0129	< 0.219	0.0110	0.909	0.00909	< 0.713	0.00357	7.78	0.00233	0.426
	B123-0.4.5		313	3.13	3,870	1.16	< 0.0962	0.00481	< 0.0774	0.00116	< 0.0766	0.0115	0.529	0.0529	0.262	0.0262	< 0.201	0.0101	0.697	0.0697	44.0	0.440	1.77	0.0177	285	0.0855	5.97
	B123-0.7.5		1.10	0.0110	11.1	0.00333	< 0.155	0.00775	< 0.154	0.00231	< 0.152	0.00228	< 0.113	0.00565	< 0.108	0.00540	< 0.145	0.00725	< 0.124	0.00620	0.251	0.00251	< 0.228	0.00114	0.826	0.000248	0.231
B128	B128-01.5	12/28/09	19.0	0.190	128	0.0384	1.78	0.178	0.902	0.0271	5.15	1.55	2.25	0.225	2.72	0.272	< 0.201	0.0101	5.42	0.542	6.30	0.0630	0.703	0.00703	8.74	0.00262	4.87
	B128-0.4.5		1.19	0.0119	14.9	0.00447	< 0.103	0.00515	< 0.0874	0.00131	< 0.0864	0.0130	< 0.0834	0.00417	< 0.0797	0.00399	< 0.107	0.00535	< 0.0912	0.00456	< 0.121	0.000605	< 0.168	0.000840	0.403	0.000121	0.155
	B128-0.7.5		65.7	0.657	960	0.288	< 0.107	0.00535	0.0547	0.00164	0.0597	0.0179	0.149	0.0149	0.112	0.0112	< 0.0497	0.00249	0.0713	0.00713	7.92	0.0792	0.682	0.00682	40.5	0.0122	1.35
	B128-12.5		86.7	0.867	1,410	0.423	< 0.119	0.00595	0.168	0.00504	0.315	0.0945	0.299	0.0299	0.236	0.0236	0.146	0.0146	0.224	0.0224	10.2	0.102	0.942	0.00942	55.2	0.0166	2.00
B138	B138-0.5	03/01/10	18.4	0.184	125	0.0375	< 0.105	0.00525	< 0.0884	0.00133	< 0.0874	0.0131	< 0.0922	0.00461	< 0.0882	0.00441	< 0.119	0.00595	< 0.101	0.00505	2.39	0.0239	< 0.139	0.000695	11.4	0.00342	0.533
	B138-0.2.5		394	3.94	3,620	1.09	< 0.0867	0.00434	0.0843	0.00253	< 0.0282	0.00423	0.684	0.0684	0.607	0.0607	< 0.151	0.00755	0.312	0.0312	50.0	0.500	1.87	0.0187	278	0.0834	10.0
	B138-0.4.5		99.7	0.997	1,090	0.327	< 0.0765	0.00383	0.0254	0.000762	< 0.00775	0.0012	0.154	0.0154	0.0935	0.00935	< 0.0563	0.00282	0.0624	0.00624	13.1	0.131	0.683	0.00683	93.4	0.0280	1.99
B139	B139-0.5	03/01/10	1,200	12.0	12,100	3.63	< 0.106	0.00530	0.495	0.0149	0.352	0.106	5.05	0.505	4.59	0.459	< 0.167	0.00835	2.41	0.241	171	1.71	13.2	0.132	739	0.222	45.1
	B139-0.2.5		3.94	0.0394	43.5	0.0131	< 0.108	0.00540	< 0.0822	0.00123	< 0.0814	0.0122	< 0.101	0.00505	< 0.0967	0.00484	< 0.126	0.00630	< 0.108	0.00540	0.605	0.00605	< 0.0872	0.000436	2.83	0.000849	0.238
	B139-0.4.5		574	5.74	5,930	1.78	< 0.0766	0.00383	0.118	0.00354	< 0.0509	0.00764	1.95	0.195	1.71	0.171	< 0.0986	0.00493	1.57	0.157	82.1	0.821	4.55	0.0455	382	0.115	19.3
	B139-0.6		1.73	0.0173	22.7	0.00681	< 0.0359	0.00180	< 0.0331	0.0004965	< 0.0327	0.00491	< 0.0288	0.00144	< 0.0277	0.00139	< 0.0360	0.00180	< 0.0309	0.00155	0.108	0.00108	< 0.0247	0.000124	0.117	0.0000351	0.157
B140	B140-0.5	03/01/10	27.3	0.273	271	0.0813	< 0.121	0.00605	< 0.0328	0.000492	< 0.0324	0.00486	< 0.0814	0.00407	< 0.0782	0.00391	< 0.102	0.00510	< 0.0872	0.00436	3.22	0.0322	0.244	0.00244	14.2	0.00426	1.06
	B140-0.2.5		1.62	0.0162	14.2	0.00426	< 0.0626	0.00313	< 0.0174	0.000261	< 0.0173	0.00260	< 0.0305	0.00153	< 0.0293	0.00147	< 0.0382	0.00191	< 0.0328	0.00164	0.156	0.00156	< 0.0670	0.000335	0.756	0.000227	0.0593
	B140-0.4.5		1.13	0.0113	11.9	0.00357	< 0.0395	0.00198	< 0.0203	0.000305	< 0.0202	0.00303	< 0.0327	0.00164	< 0.0314	0.00157	< 0.0410	0.00205	< 0.0351	0.00176	< 0.0613	0.000307	< 0.0836	0.000418	0.262	0.0000786	0.0579
B141	B141-0.5	03/01/10	49.9	0.499	540	0.162	< 0.112	0.00560	< 0.0340	0.000510	< 0.0337	0.00506	0.193	0.0193	0.208	0.0208	< 0.114	0.00570	0.151	0.0151	5.98	0.0598	0.524	0.00524	28.4	0.00852	1.79
	B141-0.2.5		3.68	0.0368	39.3	0.0118	< 0.0219	0.00110	< 0.0101	0.000152	< 0.00994	0.00149	< 0.0292	0.00146	< 0.0280	0.00140	< 0.0365	0.00183	< 0.0313	0.00157	0.327	0.00327	< 0.0734	0.000367	1.75	0.000525	0.114
	B141-0.4.5		27.9	0.279	481	0.144	< 0.0113	0.000565	< 0.0169	0.000254	< 0.0167	0.00251	0.0957	0.00957	0.0650	0.00650	< 0.0636	0.00318	< 0.0546	0.00273	3.21	0.0321	0.238	0.00238	15.6	0.00468	0.911
B142	B142-0.5	03/01/10	957	9.57	14,400	4.32	< 0.0900	0.00450	0.193	0.00579	0.201	0.0603	2.64	0.264	2.12	0.212	< 0.200	0.0100	1.28	0.128	123	1.23	7.43	0.0743	721	0.216	24.9
	B142-0.2.5		62.5	0.625	794	0.238	< 0.0158	0.000790	< 0.0105	0.000158	< 0.0104	0.00156	0.192	0.0192	0.138	0.0138	< 0.0614	0.00307	0.0913	0.00913	7.89	0.0789	0.534	0.00534	41.0	0.0123	2.01
	B142-0.4.5		281	2.81	3,170	0.951	< 0.221	0.0111	< 0.0229	0.000344	< 0.0227	0.00341	0.708	0.0708	0.470	0.0470	< 0.0997	0.00499	0.301	0.0301	36.0	0.360	2.17	0.0217	230	0.0690	6.96
B143	B143-0.5	03/01/10	40.3	0.403	409	0.123	< 0.0665	0.00333	< 0.0436	0.000654	< 0.0432	0.00648	< 0.0881	0.00441	< 0.0846	0.00423	< 0.111	0.00555	< 0.0945	0.00473	4.62	0.0462	< 0.243	0.00122	19.1	0.00573	1.21
	B143-0.2.5		6.75	0.0675	71.4	0.0214	< 0.0399	0.00200	< 0.0128	0.000192	< 0.0127	0.00191	< 0.0235	0.00118	< 0.0226	0.00113	< 0.0294	0.00147	< 0.0252	0.00126	0.757	0.00757	< 0.0548	0.000274	3.00	0.000900	0.164
	B143-0.4.5		3,040	30.4	35,900	10.8	< 0.0851	0.00426	0.105	0.00315	< 0.0284	0.00426	4.42	0.442	1.66	0.166	< 0.659	0.0330	1.75	0.175	404	4.04	22.8	0.228	3,300	0.990	60.5
	B143-0.6		592	5.92	6,200	1.86	< 0.0343	0.00172	< 0.0286	0.000429	< 0.0284	0.00426	0.893	0.0893	0.331	0.0331	< 0.286	0.0143	0.675	0.0675	70.9	0.709	5.03	0.0503	481	0.144	11.5
B144	B144-0.5	03/01/10	33,300	333	509,000	153	1.58	0.158	9.63	0.289	7.77	2.33	114	11.4	98.2	9.82	< 0.931	0.0466									



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (nanograms per kilogram)																									
				Total TCDDs		Total PeCDDs		Total HxCDDs		Total HpCDDs		Total TCDFs		Total PeCDFs		Total HxCDFs		Total HpCDFs		2,3,7,8 TCDD		1,2,3,7,8 PeCDD		1,2,3,4,7,8 HxCDD		1,2,3,6,7,8 HxCDD		1,2,3,7,8,9 HxCDD	
				Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Corrected for TEF								
Bulk Terminal Property																													
Borings																													
B145	B145-0.5	03/01/10	46	1.06	1.06E-06	7.30	7.30E-06	95.6	9.56E-05	1,240	1.24E-03	3.88	3.88E-06	9.74	9.74E-06	31.4	3.14E-05	520	5.20E-04	0.336	0.336	3.15	3.15	5.95	0.595	23.5	2.35	14.1	1.41
	B145-02.5		44	< 0.0252	2.52E-08	< 0.0159	1.59E-08	11.7	1.17E-05	165	1.65E-04	0.506	5.06E-07	1.77	1.77E-06	10.4	1.04E-05	67.2	6.72E-05	0.0748	0.0748	0.328	0.328	0.762	0.0762	2.79	0.279	1.80	0.180
	B145-04.5		42	0.225	2.25E-07	< 0.0201	2.01E-08	5.66	5.66E-06	72.9	7.29E-05	0.172	1.72E-07	0.689	6.89E-07	4.64	4.64E-06	28.6	2.86E-05	< 0.0285	0.0143	0.177	0.177	0.349	0.0349	1.17	0.117	0.818	0.0818
B146	B146-0.5	03/01/10	46.4	1.13	1.13E-06	0.807	8.07E-07	32.3	3.23E-05	490	4.90E-04	2.13	2.13E-06	4.95	4.95E-06	32.9	3.29E-05	191	1.91E-04	0.117	0.117	0.735	0.735	1.84	0.184	7.30	0.730	4.28	0.428
	B146-02.5		44.4	< 0.0391	3.91E-08	< 0.0261	2.61E-08	0.340	3.40E-07	1.37	1.37E-06	< 0.0243	2.43E-08	< 0.0190	1.90E-08	< 0.0246	2.46E-08	0.265	2.65E-07	< 0.0391	0.0196	< 0.0261	0.0131	< 0.0427	0.00214	< 0.0379	0.00190	< 0.0411	0.00206
	B146-04.5		42.4	0.652	6.52E-07	3.55	3.55E-06	91.9	9.19E-05	1,860	1.86E-03	1.36	1.36E-06	6.59	6.59E-06	112	1.12E-04	779	7.79E-04	0.157	0.157	1.62	1.62	3.36	0.336	26.0	2.60	10.0	1.00
B147	B147-0.5	03/01/10	40.9	< 0.0158	1.58E-08	0.0867	8.67E-08	0.398	3.98E-07	4.91	4.91E-06	< 0.0212	2.12E-08	< 0.0255	2.55E-08	< 0.0151	1.51E-08	0.967	9.67E-07	< 0.0158	0.00790	< 0.0136	0.00680	< 0.0288	0.00144	0.0751	0.00751	< 0.0278	0.00139
	B147-02.5		46.5	< 0.0457	4.57E-08	< 0.0197	1.97E-08	0.261	2.61E-07	4.81	4.81E-06	0.218	2.18E-07	< 0.0253	2.53E-08	< 0.0460	4.60E-08	1.41	1.41E-06	< 0.0457	0.0229	< 0.0197	0.00985	< 0.0712	0.00356	< 0.0631	0.00316	< 0.0687	0.00344
	B147-04.5		44.5	0.366	3.66E-07	< 0.0192	1.92E-08	0.456	4.56E-07	2.97	2.97E-06	1.19	1.19E-06	1.36	1.36E-06	0.779	7.79E-07	1.18	1.18E-06	< 0.0269	0.0135	< 0.0192	0.00960	< 0.0319	0.00160	0.0733	0.00733	0.174	0.0174
B148	B148-0.5	03/01/10	42.5	< 0.0364	3.64E-08	< 0.155	1.55E-07	< 0.282	2.82E-07	0.781	7.81E-07	< 0.373	3.73E-07	< 0.0206	2.06E-08	0.212	2.12E-07	0.498	4.98E-07	< 0.0364	0.0182	< 0.0155	0.00775	< 0.0318	0.00159	< 0.0282	0.00141	0.0807	0.00807
	B148-02.5		46.3	< 0.0438	4.38E-08	0.147	1.47E-07	3.12	3.12E-06	36.4	3.64E-05	1.25	1.25E-06	2.67	2.67E-06	2.98	2.98E-06	12.3	1.23E-05	< 0.0438	0.0219	0.0809	0.0809	0.133	0.0133	0.675	0.0675	0.516	0.0516
	B148-04.5		44.3	< 0.103	1.03E-07	< 0.0358	3.58E-08	< 0.0372	3.72E-08	0.694	6.94E-07	< 0.0569	5.69E-08	< 0.0376	3.76E-08	< 0.0337	3.37E-08	0.236	2.36E-07	< 0.103	0.0515	< 0.0358	0.0179	< 0.0420	0.00210	< 0.0372	0.00186	< 0.0405	0.00203
B149	B149-0.5	03/01/10	42.3	< 0.0485	4.85E-08	< 0.0307	3.07E-08	0.710	7.10E-07	7.07	7.07E-06	0.223	2.23E-07	< 0.227	2.27E-07	0.233	2.33E-07	1.49	1.49E-06	< 0.0485	0.0243	< 0.0307	0.0154	< 0.0403	0.00202	< 0.0357	0.00179	< 0.0388	0.00194
	B149-02.5		45.7	10.8	1.08E-05	176	1.76E-04	1,310	1.31E-03	7,200	7.20E-03	10.7	1.07E-05	98.7	9.87E-05	380	3.80E-04	1,680	1.68E-03	5.12	5.12	73.9	73.9	118	11.8	237	23.7	252	25.2
	B149-04.5		43.7	< 0.0758	7.58E-08	< 0.0967	9.67E-08	3.59	3.59E-06	35.8	3.58E-05	0.320	3.20E-07	0.135	1.35E-07	1.05	1.05E-06	5.78	5.78E-06	< 0.0758	0.0379	< 0.0967	0.0484	0.239	0.0239	0.895	0.0895	0.948	0.0948
	B149-06		41.7	3.66	3.66E-06	42.5	4.25E-05	318	3.18E-04	1,850	1.85E-03	4.02	4.02E-06	21.4	2.14E-05	92.9	9.29E-05	405	4.05E-04	1.67	1.67	19.4	19.4	28.7	2.87	58.6	5.86	64.0	6.40
B150	B150-0.5	03/01/10	40.2	< 0.00920	9.20E-09	< 0.0287	2.87E-08	0.0515	5.15E-08	2.32	2.32E-06	0.418	4.18E-07	< 0.0258	2.58E-08	< 0.0285	2.85E-08	0.120	1.20E-07	< 0.00920	0.00460	< 0.0287	0.0144	0.0515	0.00515	< 0.0374	0.00187	< 0.0406	0.00203
	B150-04.5		45.7	< 0.0113	1.13E-08	1.65	1.65E-06	18.3	1.83E-05	132	1.32E-04	0.297	2.97E-07	1.05	1.05E-06	8.46	8.46E-06	36.5	3.65E-05	< 0.0113	0.00565	0.837	0.837	1.38	0.138	3.44	0.344	3.13	0.313
	B150-02.5		41.7	0.124	1.24E-07	0.236	2.36E-07	20.5	2.05E-05	150	1.50E-04	0.475	4.75E-07	1.26	1.26E-06	9.72	9.72E-06	39.8	3.98E-05	0.105	0.105	0.956	0.956	1.42	0.142	4.26	0.426	3.75	0.375
B151	B151-0.5	03/01/10	46.5	194	1.94E-04	2,790	2.79E-03	22,800	2.28E-02	161,000	1.61E-01	501	5.01E-04	1,730	1.73E-03	6,800	6.80E-03	20,200	2.02E-02	62.9	62.9	525	525	1,110	111	4,510	451	2,350	235
	B151-02.5		44.5	< 0.181	1.81E-07	< 0.135	1.35E-07	8.16	8.16E-06	126	1.26E-04	< 0.176	1.76E-07	< 0.0910	9.10E-08	6.87	6.87E-06	51.7	5.17E-05	< 0.181	0.0905	0.246	0.246	0.415	0.0415	2.64	0.264	0.977	0.0977
	B151-04.5		42.5	130	1.30E-04	1,740	1.74E-03	22,400	2.24E-02	79,100	7.91E-02	95.0	9.50E-05	1,350	1.35E-03	7,460	7.46E-03	34,400	3.44E-02	60.5	60.5	633	633	1,260	126	6,440	644	3,500	350
B152	B152-0.5	03/01/10	41	< 0.0406	4.06E-08	3.65	3.65E-06	56.1	5.61E-05	879	8.79E-04	< 0.0629	6.29E-08	3.10	3.10E-06	57.9	5.79E-05	396	3.96E-04	< 0.0406	0.0203	1.87	1.87	2.86	0.286	17.8	1.78	7.36	0.736
	B152-02.5		46.7	< 0.0523	5.23E-08	1.06	1.06E-06	17.7	1.77E-05	176	1.76E-04	0.318	3.18E-07	1.23	1.23E-06	31.2	3.12E-05	81.0	8.10E-05	< 0.0523	0.0262	0.813	0.813	0.895	0.0895	4.57	0.457	3.21	0.321
	B152-04.5		44.7	< 0.0411	4.11E-08	0.569	5.69E-07	6.46	6.46E-06	55.6	5.56E-05	0.832	8.32E-07	1.38	1.38E-06	2.16	2.16E-06	53.7	5.37E-05	< 0.0411	0.0206	0.271	0.271	0.391	0.0391	1.39	0.139	2.22	0.222
B156	B156-0.5	03/02/10	42.7	< 0.0396	3.96E-08	0.946	9.46E-07	17.1	1.71E-05	242	2.42E-04	1.06	1.06E-06	2.52	2.52E-06	11.6	1.16E-05	62.6	6.26E-05	< 0.0396	0.0198	0.696	0.696	0.690	0.0690	3.80	0.380	3.31	0.331
	B156-02.5		46.3	4.68	4.68E-06	27.6	2.76E-05	148	1.48E-04	1,020	1.02E-03	6.04	6.04E-06	25.8	2.58E-05	86.7	8.67E-05	324	3.24E-04	0.723	0.723	6.78	6.78	10.0	1.00	24.5	2.45	24.4	2.44
	B156-04.5		44.3	< 0.0562	5.62E-08	0.205	2.05E-07	6.07	6.07E-06	89.2	8.92E-05	0.442	4.42E-07	1.68	1.68E-06	6.14	6.14E-06	31.1	3.11E-05	< 0.0562	0.0281	0.201	0.201	0.552	0.0552	1.47	0.147	1.12	0.112
B161	B161-0.5	03/02/10	42.3	< 1.12	1.12E-06	0.599	5.99E-07	11.1	1.11E-05	139	1.39E-04	0.681	6.81E-07	1.58	1.58E-06	8.97	8.97E-06	46.4	4.64E-05	< 0.422	0.211	0.388	0.388	0.635	0.0635	2.32	0.232	1.69	0.169
	B161-02.5		46.5	< 0.0280	2.80E-08	< 0.0343	3.43E-08	0.667	6.67E-07	6.55	6.55E-06	0.468	4.68E-07	< 0.0194	1.94E-08	0.345	3.45E-07	1.27	1.27E-06	< 0.0280	0.0140	< 0.0343	0.0172	< 0.0501	0.002505	0.128	0.0128	0.151	0.0151
	B161-04.5		44.5	< 0.0613	6.13E-08	< 0.0327	3.27E-08	0.953	9.53E-07	6.21	6.21E-06	< 0.0612	6.12E-08	< 0.0161	1.61E-08	0.213	2.13E-07	1.29	1.29E-06	< 0.0613	0.0307	< 0.0327	0.0164	< 0.0414	0.00207	0.104	0.0104	0.129	0.0129
B165	B165-0.5	03/02/10	42.5	< 0.0499	4.99E-08	0.311	3.11E-07	7.66	7.66E-06	70.5	7.05E-05	< 0.0579	5.79E-08	0.713	7.13E-07	4.26	4.26E-06	19.9	1.99E-05	< 0.0499	0.0250	0.268	0.268	0.599	0.0599	1.28	0.128	1.14	0.114</



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (nanograms per kilogram)																								2,3,7,8 TCDD - TEQ ⁽²⁾ (nanograms per kilogram)
			1,2,3,4,6,7,8 HpCDD		OCDD		2,3,7,8 TCDF		1,2,3,7,8 PeCDF		2,3,4,7,8 PeCDF		1,2,3,4,7,8 HxCDF		1,2,3,4,6,7,8 HxCDF		2,3,4,6,7,8 HxCDF		1,2,3,4,6,7,8 HpCDF		1,2,3,4,7,8,9 HpCDF		OCDF				
			Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	
Bulk Terminal Property																											
Borings																											
B145	B145-0.5	03/01/10	757	7.57	7,620	2.29	< 0.0721	0.00361	0.158	0.00474	0.153	0.0459	1.82	0.182	1.20	0.120	< 0.143	0.00715	< 0.123	0.00615	102	1.02	6.78	0.0678	619	0.186	19.3
	B145-02.5		101	1.01	999	0.300	< 0.0980	0.00490	0.0631	0.00189	< 0.0212	0.00318	0.283	0.0283	0.211	0.0211	< 0.0919	0.00460	0.0937	0.00937	13.6	0.136	0.832	0.00832	79.6	0.0239	2.49
	B145-04.5		44.9	0.449	474	0.142	< 0.0244	0.00122	< 0.0156	0.000234	< 0.0154	0.00231	0.139	0.0139	0.115	0.0115	< 0.0409	0.00205	0.0842	0.00842	5.74	0.0574	0.393	0.00393	36.2	0.0109	1.13
B146	B146-0.5	03/01/10	303	3.03	3,580	1.07	< 0.107	0.00535	0.0843	0.00253	0.118	0.0354	0.793	0.0793	0.540	0.0540	< 0.214	0.0107	0.223	0.0223	41.0	0.410	2.65	0.0265	241	0.0723	7.02
	B146-02.5		0.992	0.00992	14.6	0.00438	< 0.0243	0.00122	< 0.0193	0.000290	< 0.0190	0.00285	< 0.0257	0.00129	< 0.0246	0.00123	< 0.0321	0.00161	< 0.0276	0.00138	0.118	0.00118	< 0.0529	0.000265	0.234	0.000702	0.0644
	B146-04.5		1,130	11.3	14,000	4.20	< 0.195	0.00975	0.101	0.00303	0.0944	0.0283	2.10	0.210	1.18	0.118	< 0.127	0.00635	2.90	0.290	160	1.60	7.05	0.0705	997	0.299	23.8
B147	B147-0.5	03/01/10	2.73	0.0273	27.7	0.00831	< 0.0460	0.00230	< 0.0256	0.000384	< 0.0253	0.00380	< 0.0478	0.00239	< 0.0460	0.00230	< 0.0598	0.00299	< 0.0513	0.00257	0.328	0.00328	< 0.0898	0.000449	1.50	0.000450	0.0994
	B147-02.5		1.54	0.0154	13.1	0.00393	< 0.146	0.00730	< 0.0174	0.000261	< 0.0173	0.00260	0.0660	0.00660	0.0602	0.00602	< 0.0567	0.00284	< 0.0487	0.00244	0.506	0.00506	< 0.0566	0.000283	0.869	0.000261	0.102
	B147-04.5		0.781	0.00781	6.04	0.001812	< 0.0373	0.00187	< 0.0208	0.000312	< 0.0206	0.00309	0.0786	0.00786	0.0676	0.00676	< 0.0131	0.000655	0.0662	0.00662	0.253	0.00253	< 0.0284	0.000142	0.536	0.000161	0.0766
B148	B148-0.5	03/01/10	21.1	0.211	284	0.0852	< 0.115	0.00575	< 0.0391	0.000587	< 0.0387	0.00581	0.132	0.0132	0.136	0.0136	< 0.0525	0.00263	0.0740	0.00740	2.90	0.0290	0.190	0.00190	14.9	0.00447	0.616
	B148-02.5		0.772	0.00772	7.12	0.002136	< 0.0569	0.00285	< 0.0380	0.000570	< 0.0376	0.00564	< 0.0351	0.00176	< 0.0337	0.00169	< 0.0439	0.00220	< 0.0376	0.00188	< 0.0541	0.0002705	< 0.0738	0.000369	0.302	9.06E-05	0.103
	B148-04.5		3.88	0.0388	51.6	0.0155	< 0.0756	0.00378	< 0.0229	0.000344	< 0.0227	0.00341	< 0.0357	0.00179	0.0601	0.00601	< 0.0446	0.00223	< 0.0382	0.00191	0.410	0.00410	< 0.0592	0.000296	1.72	0.000516	0.124
B149	B149-0.5	03/01/10	4,110	41.1	38,800	11.64	< 0.111	0.00555	2.38	0.0714	1.85	0.555	20.1	2.01	18.5	1.85	0.495	0.0495	8.56	0.856	513	5.13	32.8	0.328	1,890	0.567	204
	B149-02.5		19.1	0.191	169	0.0507	< 0.0903	0.00452	< 0.0565	0.000848	< 0.0559	0.00839	< 0.0957	0.00479	< 0.0920	0.00460	< 0.120	0.00600	< 0.103	0.00515	2.03	0.0203	< 0.191	0.000955	6.16	0.00185	0.594
	B149-04.5		1,040	10.4	8,950	2.69	< 0.148	0.00740	0.521	0.0156	0.493	0.148	4.75	0.475	4.80	0.480	< 0.138	0.00690	3.04	0.304	127	1.27	8.00	0.0800	397	0.119	52.2
B150	B150-0.5	03/01/10	1.08	0.0108	8.86	0.00266	< 0.0280	0.00140	< 0.0260	0.000390	< 0.0258	0.00387	< 0.0296	0.00148	< 0.0285	0.00143	< 0.0370	0.00185	< 0.0318	0.00159	0.120	0.00120	< 0.0807	0.000404	0.289	0.000867	0.0552
	B150-02.5		77.5	0.775	713	0.214	< 0.0470	0.00235	< 0.0252	0.000378	< 0.0250	0.00375	0.230	0.0230	0.281	0.0281	< 0.0717	0.00359	0.203	0.0203	9.33	0.0933	0.641	0.00641	39.0	0.0117	2.82
	B150-04.5		88.3	0.883	832	0.250	< 0.0235	0.00118	0.0353	0.00106	< 0.0210	0.00315	0.317	0.0317	0.296	0.0296	< 0.205	0.0103	0.238	0.0238	10.9	0.109	0.702	0.00702	43.9	0.0132	3.37
B151	B151-0.5	03/01/10	94,600	946	757,000	227.1	5.55	0.555	33.4	1.00	29.5	8.85	366	36.6	288	28.8	6.91	0.691	197	19.7	13,400	134	814	8.14	113,000	33.9	2,830
	B151-02.5		80.6	0.806	890	0.267	< 0.176	0.00880	< 0.0926	0.001389	< 0.0910	0.0137	< 0.179	0.00895	< 0.187	0.00935	< 0.231	0.0116	< 0.197	0.00985	10.6	0.106	0.410	0.00410	73.5	0.0221	2.01
	B151-04.5		223,000	2,230	3,070,000	921	5.15	0.515	32.1	0.963	25.4	7.62	432	43.2	296	29.6	9.68	0.968	182	18.2	23,800	238	1,110	11.1	401,000	120	5,430
B152	B152-0.5	03/01/10	554	5.54	5,630	1.69	< 0.0629	0.00315	< 0.0715	0.00107	< 0.0706	0.0106	1.08	0.108	0.757	0.0757	< 0.316	0.0158	1.18	0.118	79.1	0.791	4.61	0.0461	483	0.145	13.2
	B152-02.5		114	1.14	743	0.223	< 0.0927	0.00464	< 0.104	0.00156	< 0.103	0.0155	0.353	0.0353	0.304	0.0304	< 0.139	0.00695	0.300	0.0300	14.5	0.145	3.29	0.0329	80.9	0.0243	3.40
	B152-04.5		36.0	0.360	304	0.0912	< 0.0910	0.00455	< 0.0507	0.000761	< 0.0502	0.00753	< 0.580	0.0290	< 0.557	0.0279	< 0.725	0.0363	< 0.622	0.0311	13.5	0.135	< 0.847	0.00424	27.3	0.00819	1.43
B156	B156-0.5	03/02/10	143	1.43	1,800	0.540	< 0.104	0.00520	< 0.0264	0.000396	< 0.0261	0.00392	0.322	0.0322	0.249	0.0249	< 0.208	0.0104	< 0.178	0.00890	10.9	0.109	< 0.698	0.00349	110	0.0330	3.70
	B156-02.5		623	6.23	4,940	1.48	0.485	0.0485	0.591	0.0177	0.498	0.149	2.74	0.274	2.88	0.288	< 0.190	0.00950	1.80	0.180	81.0	0.810	4.05	0.0405	378	0.113	23.0
	B156-04.5		55.7	0.557	464	0.139	< 0.0714	0.00357	< 0.0235	0.0003525	< 0.0232	0.00348	0.137	0.0137	0.126	0.0126	< 0.0831	0.00416	0.102	0.0102	7.07	0.0707	0.528	0.00528	37.8	0.0113	1.37
B161	B161-0.5	03/02/10	82.2	0.822	894	0.268	< 0.0657	0.00329	< 0.0377	0.0005655	< 0.0374	0.00561	0.233	0.0233	0.171	0.0171	< 0.0706	0.00353	0.156	0.0156	10.7	0.107	0.656	0.00656	56.8	0.0170	2.35
	B161-02.5		3.53	0.0353	38.3	0.0115	< 0.0419	0.00210	< 0.0196	0.000294	< 0.0194	0.00291	< 0.0297	0.00149	< 0.0285	0.00143	< 0.0371	0.00186	< 0.0318	0.00159	0.404	0.00404	< 0.0742	0.000371	2.12	0.000636	0.125
	B161-04.5		41.1	0.411	411	0.123	< 0.0579	0.00290	< 0.0260	0.000390	< 0.0258	0.00387	0.108	0.0108	< 0.0253	0.00127	0.0329	0.00329	0.0283	0.00283	4.77	0.0477	< 0.221	0.00111	24.0	0.00720	1.21
B165	B165-0.5	03/02/10	1,290	12.9	18,200	5.46	2.10	0.210	1.04	0.0312	1.51	0.453	4.04	0.404	2.79	0.279	< 0.219	0.0110	1.84	0.184	154	1.54	9.67	0.0967	1,100	0.330	35.2
	B165-02.5		506	5.06	5,590	1.68	0.681	0.0681	0.390	0.0117	0.447	0.134	1.73	0.173	1.25	0.125	< 0.178	0.00890	1.06	0.106	62.6	0.626	4.20	0.0420	362	0.109	14.0
	B165-04.5		21.3	0.213	263	0.0789	< 0.0581	0.00291	< 0.0225	0.0003375	< 0.0222	0.00333	0.0780	0.00780	0.102	0.0102	< 0.0522	0.00261	0.0645	0.00645	2.80	0.0280	< 0.0800	0.000400	16.2	0.00486	0.647
B166	B166-0.5	03/02/10	1,040	10.4	11,600	3.48	1.80	0.180	0.960	0.0288	1.52	0.456	4.54	0.454	2.73	0.273	< 0.276	0.0138	2.48	0.248	126	1.26	9.73	0.0973	780	0.234	30.4
	B166-02.5		34.7	0.347	324	0.0972	< 0.0876	0.00438	< 0.0235	0.000353	< 0.0234	0.00351	0.180	0.0180	0.167</												



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (nanograms per kilogram)																									
				Total TCDDs		Total PeCDDs		Total HxCDDs		Total HpCDDs		Total TCDFs		Total PeCDFs		Total HxCDFs		Total HpCDFs		2,3,7,8 TCDD		1,2,3,7,8 PeCDD		1,2,3,4,7,8 HxCDD		1,2,3,6,7,8 HxCDD		1,2,3,7,8,9 HxCDD	
				Measured Concentration	Corrected for TEF	Measured Concentration (mg/kg)	Corrected for TEF	Measured Concentration	Corrected for TEF																				
Bulk Terminal Property																													
Borings																													
K5IW01	K5IW01-01	05/20/10	44.9	< 0.111	1.11E-07	4.31	4.31E-06	33.4	3.34E-05	239	2.39E-04	0.418	4.18E-07	4.11	4.11E-06	17.2	1.72E-05	58.1	5.81E-05	0.261	0.261	1.93	1.93	2.87	0.287	6.14	0.614	6.36	0.636
	K5IW01-02.5		43.4	1.21	1.21E-06	15.3	1.53E-05	124	1.24E-04	687	6.87E-04	1.11	1.11E-06	7.68	7.68E-06	51.1	5.11E-05	171	1.71E-04	0.715	0.715	7.45	7.45	9.12	0.912	24.9	2.49	25.8	2.58
	K5IW01-04.5		41.4	< 0.0302	3.02E-08	0.201	2.01E-07	1.72	1.72E-06	9.82	9.82E-06	< 0.0198	1.98E-08	0.157	1.57E-07	0.161	1.61E-07	2.13	2.13E-06	< 0.0302	0.0151	0.126	0.126	0.0829	0.00829	0.316	0.0316	0.352	0.0352
K6IW01	K6IW01-01	05/20/10	45.4	1.58	1.58E-06	6.79	6.79E-06	38.3	3.83E-05	347	3.47E-04	6.99	6.99E-06	14.7	1.47E-05	32.8	3.28E-05	100	1.00E-04	0.346	0.346	1.31	1.31	2.19	0.219	5.72	0.572	4.23	0.423
	K6IW01-02.5		43.9	< 0.0795	7.95E-08	< 0.0820	8.20E-08	0.145	1.45E-07	17.6	1.76E-05	< 0.0720	7.20E-08	< 0.0458	4.58E-08	< 0.0344	3.44E-08	0.132	1.32E-07	< 0.0795	0.0398	< 0.0820	0.0410	< 0.0618	0.00309	< 0.0424	0.00212	< 0.0485	0.00243
	K6IW01-04.5		41.9	< 0.0589	5.89E-08	< 0.0540	5.40E-08	0.117	1.17E-07	2.53	2.53E-06	< 0.0550	5.50E-08	< 0.0571	5.71E-08	< 0.0283	2.83E-08	0.403	4.03E-07	< 0.0589	0.0295	< 0.0540	0.0270	< 0.0604	0.00302	< 0.0413	0.00207	< 0.0473	0.00237
O8IW01	O8IW01-01	05/26/10	45.5	3.55	3.55E-06	13.6	1.36E-05	78.6	7.86E-05	990	9.90E-04	12.4	1.24E-05	34.8	3.48E-05	52.3	5.23E-05	209	2.09E-04	0.569	0.569	2.57	2.57	3.84	0.384	13.6	1.36	10.4	1.04
	O8IW01-02.5		44	0.325	3.25E-07	5.78	5.78E-06	109	1.09E-04	1,180	1.18E-03	1.67	1.67E-06	7.24	7.24E-06	65.1	6.51E-05	405	4.05E-04	0.229	0.229	2.41	2.41	5.75	0.575	19.7	1.97	16.7	1.67
	O8IW01-04.5		42	< 0.0562	5.62E-08	< 0.0562	5.62E-08	0.411	4.11E-07	4.52	4.52E-06	< 0.0541	5.41E-08	< 0.0463	4.63E-08	0.151	1.51E-07	0.781	7.81E-07	< 0.0562	0.0281	< 0.0562	0.0281	< 0.0583	0.00292	< 0.0400	0.00200	< 0.0457	0.00229
P6IW01	P6IW01-0.5	06/01/10	45.7	< 0.0548	5.48E-08	< 0.0540	5.40E-08	0.313	3.13E-07	4.39	4.39E-06	< 0.0347	3.47E-08	0.246	2.46E-07	0.958	9.58E-07	1.42	1.42E-06	< 0.0548	0.0274	< 0.0540	0.0270	< 0.0743	0.00372	< 0.0726	0.00363	< 0.0700	0.00350
	P6IW01-02.5		43.7	< 0.0728	7.28E-08	0.157	1.57E-07	2.79	2.79E-06	22.4	2.24E-05	< 0.0628	6.28E-08	< 0.0529	5.29E-08	1.80	1.80E-06	6.85	6.85E-06	< 0.0728	0.0364	0.157	0.157	0.157	0.0157	0.420	0.0420	0.490	0.0490
	Q7IW01-0.5		46.1	< 0.210	2.10E-07	< 0.149	1.49E-07	0.176	1.76E-07	0.924	9.24E-07	< 0.233	2.33E-07	< 0.137	1.37E-07	< 0.0878	8.78E-08	< 0.120	1.20E-07	< 0.210	0.105	< 0.149	0.0745	< 0.131	0.00655	< 0.102	0.00510	< 0.113	0.00565
Q7IW01	Q7IW01-02.5	06/01/10	44.1	< 0.375	3.75E-07	< 0.325	3.25E-07	< 0.180	1.80E-07	< 0.277	2.77E-07	< 0.420	4.20E-07	< 0.234	2.34E-07	< 0.190	1.90E-07	< 0.173	1.73E-07	< 0.375	0.188	< 0.325	0.163	< 0.231	0.0116	< 0.180	0.00900	< 0.199	0.00995
	Q7IW01-04.5		42.1	< 0.196	1.96E-07	< 0.213	2.13E-07	< 0.109	1.09E-07	1.25	1.25E-06	< 0.342	3.42E-07	< 0.155	1.55E-07	< 0.118	1.18E-07	< 0.110	1.10E-07	< 0.196	0.0980	< 0.213	0.107	< 0.140	0.00700	< 0.109	0.00545	< 0.120	0.00600
	Q9IW01-0.5		46	< 0.0695	6.95E-08	< 0.0492	4.92E-08	1.16	1.16E-06	7.91	7.91E-06	0.268	2.68E-07	0.896	8.96E-07	0.320	3.20E-07	2.47	2.47E-06	< 0.0695	0.0348	< 0.0492	0.0246	< 0.0591	0.00296	0.195	0.0195	0.168	0.0168
Q9IW01	Q9IW01-02.5	06/02/10	44	< 0.112	1.12E-07	< 0.0930	9.3E-08	0.299	2.99E-07	2.73	2.73E-06	< 0.0935	9.35E-08	< 0.0683	6.83E-08	< 0.0533	5.33E-08	0.499	4.99E-07	< 0.112	0.0560	< 0.0930	0.0465	< 0.139	0.00695	< 0.103	0.00515	< 0.114	0.00570
	Q9IW01-04.5		42	< 0.0829	8.29E-08	0.474	4.74E-07	1.28	1.28E-06	3.14	3.14E-06	0.840	8.40E-07	1.21	1.21E-06	1.13	1.13E-06	1.65	1.65E-06	< 0.0829	0.0415	< 0.0594	0.0297	< 0.0847	0.00424	< 0.0626	0.00313	0.261	0.0261
	G9IW01-0.5		45.8	< 0.105	1.05E-07	< 0.129	1.29E-07	< 0.243	2.43E-07	< 0.800	8.00E-07	< 0.165	1.65E-07	< 0.204	2.04E-07	< 0.617	6.17E-07	< 0.657	6.57E-07	< 0.105	0.0525	< 0.129	0.0645	< 0.276	0.0138	< 0.243	0.0122	< 0.265	0.0133
G9IW01	G9IW01-2.5	06/09/10	43.8	< 0.0407	4.07E-08	< 0.0618	6.18E-08	< 0.0928	9.28E-08	1.10	1.10E-06	< 0.0712	7.12E-08	< 0.119	1.19E-07	< 0.283	2.83E-07	< 0.523	5.23E-07	< 0.0407	0.0204	< 0.0618	0.0309	< 0.106	0.00530	< 0.0928	0.00464	< 0.102	0.00510
	G9IW01-4.5		41.8	< 0.0384	3.84E-08	< 0.0528	5.28E-08	< 0.0763	7.63E-08	0.162	1.62E-07	< 0.0688	6.88E-08	< 0.0989	9.89E-08	< 0.241	2.41E-07	< 0.381	3.81E-07	< 0.0384	0.0192	< 0.0528	0.0264	< 0.0869	0.00435	< 0.0763	0.00382	< 0.0833	0.00417
	J12B01-0.5		46.3	5.06	5.06E-06	22.5	2.25E-05	280	2.80E-04	3,450	3.45E-03	25.9	2.59E-05	49.0	4.90E-05	241	2.41E-04	1,250	1.25E-03	0.877	0.877	7.96	7.96	19.6	1.96	57.6	5.76	41.2	4.12
J12B01	J12B01-02.5	06/09/10	44.3	0.643	6.43E-07	0.628	6.28E-07	2.35	2.35E-06	24.2	2.42E-05	3.15	3.15E-06	2.39	2.39E-06	1.09	1.09E-06	8.20	8.20E-06	< 0.0932	0.0466	< 0.0798	0.0399	< 0.138	0.00690	0.433	0.0433	0.325	0.0325
	J12B01-04.5		42.3	0.252	2.52E-07	< 0.0735	7.35E-08	3.35	3.35E-06	32.4	3.24E-05	0.373	3.73E-07	0.541	5.41E-07	2.44	2.44E-06	10.9	1.09E-05	< 0.0522	0.0261	< 0.0735	0.0368	0.221	0.0221	0.703	0.0703	0.547	0.0547
	F8IW01-02.5		42.1	< 0.0376	3.76E-08	< 0.0704	7.04E-08	0.537	5.37E-07	7.07	7.07E-06	< 0.0596	5.96E-08	< 0.0445	4.45E-08	0.478	4.78E-07	2.09	2.09E-06	< 0.0376	0.0188	< 0.0704	0.0352	< 0.0717	0.00359	0.267	0.0267	< 0.0688	0.00344
F8IW01	F8IW01-04.5	06/11/10	40.1	< 0.0339	3.39E-08	< 0.0499	4.99E-08	< 0.0693	6.93E-08	0.666	6.66E-07	< 0.0547	5.47E-08	< 0.0511	5.11E-08	< 0.0382	3.82E-08	0.108	1.08E-07	< 0.0339	0.0170	< 0.0499	0.0250	< 0.0790	0.00395	< 0.0693	0.00347	< 0.0757	0.00379
	F8IW01-06		38.6	< 0.0392	3.92E-08	< 0.0431	4.31E-08	< 0.0665	6.65E-08	0.372	3.72E-07	< 0.0324	3.24E-08	< 0.0253	2.53E-08	< 0.0383	3.83E-08	< 0.0408	4.08E-08	< 0.0392	0.0196	< 0.0431	0.0216	< 0.0758	0.00379	< 0.0665	0.00333	< 0.0727	0.00364
	J3IW01-01		46.1	0.774	7.74E-07	4.32	4.32E-06	20.1	2.01E-05	121	1.21E-04	37.0	3.70E-05	65.5	6.55E-05	33.6	3.36E-05	41.0	4.10E-05	0.208	0.208	1.04	1.04	1.43	0.143	3.52	0.352	3.46	0.346
J3IW01	J3IW01-05	06/22/10	42.1	< 0.0296	2.96E-08	< 0.0532	5.32E-08	< 0.0479	4.79E-08	0.884	8.84E-07	< 0.0463	4.63E-08	< 0.0721	7.21E-08	< 0.116	1.16E-07	< 0.125	1.25E-07	< 0.0296	0.0148	< 0.0532	0.0266	< 0.0546	0.00273	< 0.0479	0.00240	< 0.0523	0.00262
	K4IW01-05		46	< 0.0467	4.67E-08	< 0.0508	5.08E-08	< 0.0649	6.49E-08	< 0.0934	9.34E-08	< 0.0731	7.31E-08	< 0.0978	9.78E-08	< 0.242	2.42E-07	< 0.341	3.41E-07	< 0.0467	0.0234	< 0.0508	0.0254	< 0.0740	0.00370	< 0.0649	0.00325	< 0.0709	0.00355
	K4IW01-07		44	< 0.0246	2.46E-08	< 0.0490	4.90E-08	< 0.0623	6.23E-08	< 0.0965	9.65E-08	< 0.0477	4.77E-08	< 0.0716	7.16E-08	< 0.189	1.89E-07	< 0.282	2.82E-07	< 0.0246	0.0123	< 0.0490	0.0245	< 0.0710	0.00355	< 0.0623	0.00312	< 0.0680	0.00340
K4IW01	K4IW01-09	06/21/10	42	< 0.0405	4.05E-08	< 0.0592	5.92E-08	< 0.0573	5.73E-08	0.970	9.70E-07	< 0.0800	8.00E-																



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (nanograms per kilogram)																								2,3,7,8 TCDD - TEQ ⁽²⁾ (nanograms per kilogram)
			1,2,3,4,6,7,8 HpCDD		OCDD		2,3,7,8 TCDF		1,2,3,7,8 PeCDF		2,3,4,7,8 PeCDF		1,2,3,4,7,8 HxCDF		1,2,3,6,7,8 HxCDF		1,2,3,7,8,9 HxCDF		2,3,4,6,7,8 HxCDF		1,2,3,4,6,7,8 HpCDF		1,2,3,4,7,8,9 HpCDF		OCDF		
			Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	
Bulk Terminal Property																											
Borings																											
K5IW01	K5IW01-01	05/20/10	137	1.37	1,270	0.381	< 0.0625	0.00313	0.114	0.00342	< 0.0524	0.00786	0.619	0.0619	0.672	0.0672	< 0.168	0.00840	0.330	0.0330	15.0	0.150	1.24	0.0124	66.6	0.0200	5.85
	K5IW01-02.5		412	4.12	3,550	1.07	< 0.144	0.0072	0.236	0.00708	0.220	0.0660	1.89	0.189	1.83	0.183	< 0.115	0.00575	1.50	0.150	51.4	0.514	3.49	0.0349	176	0.0528	20.5
	K5IW01-04.5		5.32	0.0532	47.0	0.0141	< 0.0198	0.000990	< 0.0199	0.0002985	< 0.0197	0.00296	0.0637	0.00637	0.0543	0.00543	< 0.0218	0.00109	< 0.0188	0.000940	0.658	0.00658	< 0.0396	0.000198	2.29	0.000687	0.309
K6IW01	K6IW01-01	05/20/10	174	1.74	2,010	0.603	0.429	0.0429	0.239	0.00717	0.289	0.0867	1.50	0.150	0.797	0.0797	< 0.133	0.00665	0.700	0.0700	26.5	0.265	1.28	0.0128	97.1	0.0291	5.96
	K6IW01-02.5		6.02	0.0602	10.6	0.00318	< 0.0720	0.00360	< 0.0469	0.0007035	< 0.0458	0.00687	< 0.0436	0.00218	< 0.0344	0.00172	< 0.0512	0.00256	< 0.0404	0.00202	< 0.0685	0.0003425	< 0.0916	0.000458	0.268	0.0000804	0.172
	K6IW01-04.5		1.25	0.0125	30.3	0.00909	< 0.0550	0.00275	< 0.0584	0.000876	< 0.0571	0.00857	< 0.0359	0.00180	< 0.0283	0.00142	< 0.0420	0.00210	< 0.0331	0.00166	0.131	0.00131	< 0.0720	0.000360	0.347	0.000104	0.106
O8IW01	O8IW01-01	05/26/10	525	5.25	10,500	3.15	0.888	0.0888	0.425	0.0128	0.662	0.199	1.55	0.155	1.13	0.113	< 0.0704	0.00352	0.833	0.0833	47.9	0.479	2.58	0.0258	288	0.0864	15.6
	O8IW01-02.5		673	6.73	9,700	2.91	0.204	0.0204	0.171	0.00513	0.158	0.0474	1.45	0.145	0.943	0.094	< 0.112	0.00560	0.654	0.0654	77.7	0.777	4.44	0.0444	557	0.167	17.9
	O8IW01-04.5		2.20	0.0220	27.9	0.00837	< 0.0541	0.00271	< 0.0474	0.000711	< 0.0463	0.00695	< 0.0383	0.00192	< 0.0302	0.00151	< 0.0448	0.00224	< 0.0353	0.00177	0.261	0.00261	< 0.0738	0.000369	1.37	0.000411	0.115
P6IW01	P6IW01-0.5	06/01/10	2.30	0.0230	23.8	0.00714	< 0.0347	0.00174	< 0.0535	0.000803	< 0.0524	0.00786	< 0.0674	0.00337	< 0.0656	0.00328	< 0.0791	0.00396	< 0.0718	0.00359	0.944	0.00944	< 0.174	0.000870	5.06	0.00152	0.132
	P6IW01-02.5		12.4	0.124	132	0.0396	< 0.0628	0.00314	< 0.0539	0.000809	< 0.0529	0.00794	0.129	0.0129	< 0.0570	0.00285	< 0.0686	0.00343	< 0.0624	0.00312	1.96	0.0196	< 0.162	0.000810	10.2	0.00306	0.521
Q7IW01	Q7IW01-0.5	06/01/10	0.564	0.00564	6.24	0.00187	< 0.233	0.0117	< 0.142	0.00213	< 0.137	0.0206	< 0.0969	0.00485	< 0.0878	0.00439	< 0.108	0.00540	< 0.0958	0.00479	< 0.120	0.000600	< 0.146	0.00073	< 0.268	0.0000402	0.259
	Q7IW01-02.5		< 0.277	0.00139	3.34	0.00100	< 0.420	0.0210	< 0.242	0.00363	< 0.234	0.0351	< 0.210	0.0105	< 0.190	0.00950	< 0.233	0.0117	< 0.208	0.0104	< 0.173	0.000865	< 0.211	0.00106	< 0.392	0.0000588	0.487
	Q7IW01-04.5		0.528	0.00528	5.02	0.00151	< 0.342	0.0171	< 0.161	0.00242	< 0.155	0.0233	< 0.130	0.00650	< 0.118	0.00590	< 0.144	0.00720	< 0.129	0.00645	< 0.110	0.000550	< 0.135	0.000675	< 0.201	0.0000302	0.300
Q9IW01	Q9IW01-0.5	06/02/10	4.28	0.0428	45.5	0.0137	< 0.0975	0.00488	< 0.0313	0.000470	< 0.0307	0.00461	< 0.0476	0.00238	< 0.0363	0.00182	< 0.0532	0.00266	< 0.0428	0.00214	0.628	0.00628	< 0.0481	0.0002405	2.96	0.000888	0.181
	Q9IW01-02.5		1.31	0.0131	16.3	0.00489	< 0.0935	0.00468	< 0.0696	0.00104	< 0.0683	0.0102	< 0.0698	0.00349	< 0.0533	0.00267	< 0.0780	0.00390	< 0.0627	0.00314	0.187	0.00187	< 0.0668	0.000334	0.491	0.000147	0.170
	Q9IW01-04.5		1.75	0.0175	10.5	0.00315	< 0.0652	0.00326	< 0.0537	0.0008055	< 0.0527	0.00791	0.141	0.0141	0.112	0.0112	0.150	0.0150	0.132	0.0132	0.465	0.00465	0.216	0.00216	1.77	0.000531	0.198
G9IW01	G9IW01-0.5	06/09/10	< 0.800	0.00400	4.11	0.00123	< 0.165	0.00825	< 0.206	0.00309	< 0.204	0.0306	< 0.648	0.0324	< 0.617	0.0309	< 0.805	0.0403	< 0.691	0.0346	< 0.657	0.00329	< 0.890	0.00445	124	0.0372	0.386
	G9IW01-2.5		0.389	0.00389	3.83	0.00115	< 0.0712	0.00356	< 0.120	0.00180	< 0.119	0.0179	< 0.298	0.0149	< 0.283	0.0142	< 0.370	0.0185	< 0.317	0.0159	< 0.523	0.00262	< 0.709	0.00355	5.38	0.00161	0.166
	G9IW01-4.5		0.162	0.00162	1.14	0.000342	< 0.0688	0.00344	< 0.101	0.00152	< 0.0989	0.0148	< 0.253	0.0127	< 0.241	0.0121	< 0.314	0.0157	< 0.270	0.0135	< 0.381	0.00191	< 0.517	0.00259	1.96	0.000588	0.139
J12B01	J12B01-0.5	06/09/10	2,060	20.6	23,300	6.99	0.990	0.0990	0.776	0.0233	0.919	0.276	5.15	0.515	3.98	0.398	< 0.265	0.0133	2.88	0.288	270	2.70	15.1	0.151	1,710	0.513	53.2
	J12B01-02.5		14.1	0.141	164	0.0492	< 0.118	0.00590	< 0.0742	0.00111	< 0.0733	0.0110	0.153	0.0153	< 0.0671	0.00336	< 0.0876	0.00438	< 0.0753	0.00377	1.99	0.0199	< 0.167	0.000835	11.5	0.00345	0.428
	J12B01-04.5		18.5	0.185	216.0	0.0648	< 0.0373	0.00187	< 0.0601	0.0009015	< 0.0594	0.00891	< 0.0409	0.00205	< 0.0389	0.00195	< 0.0508	0.00254	< 0.0436	0.00218	2.83	0.0283	< 0.132	0.000660	13.9	0.00417	0.513
F8IW01	F8IW01-02.5	06/11/10	4.36	0.0436	33.0	0.00990	< 0.0596	0.00298	< 0.0451	0.0006765	< 0.0445	0.00668	< 0.0333	0.00167	< 0.0317	0.00159	< 0.0414	0.00207	< 0.0355	0.00178	0.630	0.00630	< 0.0621	0.0003105	2.37	0.000711	0.166
	F8IW01-04.5		0.532	0.00532	4.50	0.00135	< 0.0547	0.00274	< 0.0517	0.0007755	< 0.0511	0.00767	< 0.0402	0.00201	< 0.0382	0.00191	< 0.0498	0.00249	< 0.0428	0.00214	0.108	0.00108	< 0.0728	0.000364	0.246	0.0000738	0.0810
	F8IW01-06		0.372	0.00372	3.10	0.000930	< 0.0324	0.00162	< 0.0256	0.000384	< 0.0253	0.00380	< 0.0403	0.00202	< 0.0383	0.00192	< 0.0501	0.002505	< 0.0430	0.00215	< 0.0408	0.000204	< 0.0553	0.0002765	< 0.0558	0.0000837	0.0714
J3IW01	J3IW01-01	06/22/10	71.2	0.712	681	0.204	0.853	0.0853	< 0.201	0.00302	1.19	0.357	1.48	0.148	0.949	0.0949	< 0.370	0.0185	1.03	0.103	11.7	0.117	1.03	0.0103	40.0	0.0120	3.95
	J3IW01-05		0.357	0.00357	3.28	0.000984	< 0.0463	0.00232	< 0.0730	0.00110	< 0.0721	0.0108	< 0.122	0.00610	< 0.116	0.00580	< 0.151	0.00755	< 0.130	0.00650	< 0.125	0.000625	< 0.170	0.000850	< 0.0697	0.0000105	0.0954
K4IW01	K4IW01-05	06/21/10	< 0.0934	0.000467	1.11	0.000333	< 0.0731	0.00366	< 0.0990	0.00149	< 0.0978	0.0147	< 0.255	0.0128	< 0.242	0.0121	< 0.316	0.0158	< 0.272	0.0136	< 0.341	0.00171	< 0.462	0.00231	1.04	0.000312	0.138
	K4IW01-07		< 0.0965	0.000483	1.82	0.000546	< 0.0477	0.00239	< 0.0725	0.00109	< 0.0716	0.0107	< 0.199	0.00995	< 0.189	0.00945	< 0.247	0.0124	< 0.212	0.0106	< 0.282	0.00141	< 0.382	0.00191	0.640	0.000192	0.108
	K4IW01-09		0.367	0.00367	3.77	0.00113	< 0.0800	0.00400	< 0.0694	0.00104	< 0.0686	0.0103	< 0.214	0.0107	< 0.204	0.01020	< 0.266	0.0133	< 0.2280	0.0114	< 0.260	0.00130	< 0.352	0.00176	1.00	0.000300	0.128
B178	B178-0.5	03/25/11	338	3.38	4,050	1.22	0.527	0.0527	< 0.104	0.00156	0.343	0.103	1.16	0.116	0.903	0.0903	< 0.156	0.00780	0.993	0.0993	56.0	0.560	3.07	0.0307	273	0.0819	9.94
B179	B179-0.5	03/25/11	93.6	0.936	1,140	0.342	< 0.0966	0.00483	< 0.0634	0.000951	< 0.0622	0.00933	0.343	0.0343	0.280	0.0280	< 0.111	0.00555	0.540	0.0540	14.9	0.149	1.05	0.0105	72.3	0.0217	2.87
B183	B183-02.5	04/14/11	5.60	0.0560	38.8	0.0116	< 0.148	0.00740	< 0.0316	0.000474	0.133	0.0399	0.131	0.0131	0.132	0.0132	< 0.0476	0.00238	0.350	0.0350	1.12	0.0112	< 0.0640	0.000320	2.93	0.000879	0.480
	B183-04.5		53.3	0.533	666	0.200	< 0.0432	0.00216	< 0.0616	0.000924	< 0.0594	0.00891	< 0.132	0.00660	< 0.120	0.00600	< 0.161	0.00805	< 0.141	0.00705	8.23	0.0823	0.450	0.00450	42.7	0.0128	1.08
	B183-06		597	5.97	10,600	3.18	< 0.0940	0.00470	< 0.0415	0.000623	< 0.0401	0.00602	1.14	0.114	0.												



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (nanograms per kilogram)																											
				Total TCDDs		Total PeCDDs		Total HxCDDs		Total HpCDDs		Total TCDFs		Total PeCDFs		Total HxCDFs		Total HpCDFs		2,3,7,8 TCDD		1,2,3,7,8 PeCDD		1,2,3,4,7,8 HxCDD		1,2,3,6,7,8 HxCDD		1,2,3,7,8,9 HxCDD			
				Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Corrected for TEF										
B209	B209-10	04/05/12	36.1	0.110	1.10E-07	0.0516	5.16E-08	0.510	5.10E-07	15.6	1.56E-05	< 0.0285	2.85E-08	< 0.0379	3.79E-08	0.921	9.21E-07	5.88	5.88E-06	< 0.0360	0.0180	< 0.0437	0.0219	0.0761	0.00761	0.329	0.0329	0.204	0.0204		
	B209-12.5		33.6	< 0.0369	3.69E-08	< 0.0460	4.60E-08	0.506	5.06E-07	3.63	3.63E-06	< 0.0264	2.64E-08	< 0.0272	2.72E-08	0.148	1.48E-07	1.18	1.18E-06	< 0.0369	0.0185	< 0.0460	0.0230	< 0.0283	0.00142	0.0845	0.00845	0.0991	0.00991		
B210	B210-12.5	03/29/12	32.5	< 0.0226	2.26E-08	< 0.0163	1.63E-08	0.137	1.37E-07	0.594	5.94E-07	< 0.0147	1.47E-08	< 0.0168	1.68E-08	< 0.00763	7.63E-09	< 0.0147	1.47E-08	< 0.0226	0.0113	< 0.0163	0.00815	0.0349	0.00349	0.0531	0.00531	0.0554	0.00554		
B211	B211-12.5	03/29/12	33	< 0.0247	2.47E-08	< 0.0233	2.33E-08	0.169	1.69E-07	0.719	7.19E-07	< 0.0118	1.18E-08	< 0.0199	1.99E-08	< 0.00888	8.88E-09	< 0.0204	2.04E-08	< 0.0247	0.0124	< 0.0233	0.0117	< 0.0147	0.000735	< 0.0135	0.000675	0.0671	0.00671		
B212	B212-12.5	03/29/12	32.5	< 0.0596	5.96E-08	< 0.0571	5.71E-08	< 0.0583	5.83E-08	1.11	1.11E-06	< 0.0615	6.15E-08	< 0.0407	4.07E-08	< 0.0298	2.98E-08	0.104	1.04E-07	< 0.0596	0.0298	< 0.0571	0.0286	< 0.0664	0.00332	< 0.0583	0.00292	< 0.0592	0.00296		
B213	B213-0.5	03/29/12	46.5	5.79	5.79E-06	81.8	8.18E-05	4.280	4.28E-03	53,100	5.31E-02	37.2	3.72E-05	199	1.99E-04	914	9.14E-04	9,930	9.93E-03	1.56	1.56	25.5	25.5	48.9	4.89	1.750	175	182	18.2		
B214	B214-04.5	03/30/12	41	0.201	2.01E-07	< 0.0187	1.87E-08	0.449	4.49E-07	3.04	3.04E-06	< 0.0233	2.33E-08	0.195	1.95E-07	< 0.0235	2.35E-08	< 0.0389	3.89E-08	< 0.0299	0.0150	0.0874	0.00874	< 0.0310	0.00155	< 0.0285	0.00143	< 0.0284	0.00142		
B215	B215-06.5	03/30/12	40.1	< 0.0170	1.70E-08	< 0.0227	2.27E-08	0.212	2.12E-07	1.14	1.14E-06	< 0.0207	2.07E-08	0.151	1.51E-07	< 0.0216	2.16E-08	0.354	3.54E-07	< 0.0170	0.00850	< 0.0227	0.0114	< 0.0395	0.00198	0.0899	0.00899	< 0.0360	0.00180		
	B215-08		38.6	< 0.130	1.30E-07	< 0.0640	6.40E-08	< 0.0966	9.66E-08	1.06	1.06E-06	< 0.0952	9.52E-08	< 0.0656	6.56E-08	< 0.0527	5.27E-08	< 0.0596	5.96E-08	< 0.130	0.0650	< 0.0640	0.0320	< 0.110	0.00550	< 0.0966	0.00483	< 0.0982	0.00491		
B216	B216-0.5	03/30/12	45	< 0.177	1.77E-07	8.69	8.69E-06	745	7.45E-04	15,100	1.51E-02	1.18	1.18E-06	20.7	2.07E-05	1,030	1.03E-03	1,560	1.56E-03	< 0.177	0.08850	3.80	3.8000	15.2	1.52000	271	27.1	43.1	4.31		
	B216-02.5		43	0.156	1.56E-07	0.173	1.73E-07	26.4	2.64E-05	582	5.82E-04	2.22	2.22E-06	3.75	3.75E-06	40.0	4.00E-05	319	3.19E-04	< 0.1112	0.00560	0.0521	0.0521	0.279	0.02790	9.84	0.984	1.06	0.106		
B217	B217-06.5	03/30/12	40.1	0.207	2.07E-07	< 0.0354	3.54E-08	6.82	6.82E-06	129	1.29E-04	2.24	2.24E-06	4.05	4.05E-06	11.9	1.19E-05	62.0	6.20E-05	< 0.0202	0.0101	< 0.0354	0.0177	0.135	0.0135	2.32	0.232	0.523	0.0523		
B218	B218-06.5	03/30/12	40.1	< 0.0214	2.14E-08	< 0.0237	2.37E-08	< 0.0306	3.06E-08	0.859	8.59E-07	< 0.0316	3.16E-08	< 0.0279	2.79E-08	< 0.0186	1.86E-08	< 0.0584	5.84E-08	< 0.0214	0.0107	< 0.0237	0.0119	< 0.0332	0.00166	< 0.0306	0.00153	< 0.0304	0.00152		
	B218-08		38.6	< 0.102	1.02E-07	< 0.0562	5.62E-08	< 0.0552	5.52E-08	1.48	1.48E-06	< 0.0766	7.66E-08	< 0.0461	4.61E-08	< 0.0340	3.40E-08	< 0.0624	6.24E-08	< 0.102	0.0510	< 0.0562	0.0281	< 0.0627	0.00314	< 0.0552	0.00276	< 0.0560	0.00280		
B221	B221-08	04/06/12	38.2	0.918	9.18E-07	6.75	6.75E-06	365	3.65E-04	11,100	1.11E-02	5.41	5.41E-06	14.9	1.49E-05	350	3.50E-04	3,220	3.22E-03	0.168	0.168	2.15	2.15	6.95	0.695	10.7	10.7	18.4	1.84		
	B221-12.5		33.7	0.601	6.01E-07	1.55	1.55E-06	27.9	2.79E-05	555	5.55E-04	2.59	2.59E-06	4.49	4.49E-06	34.6	3.46E-05	283	2.83E-04	0.0709	0.0709	0.275	0.275	0.677	0.0677	8.60	0.860	1.88	0.188		
B222	B222-12.5	04/06/12	33.7	< 0.0303	3.03E-08	< 0.0164	1.64E-08	0.0632	6.32E-08	1.24	1.24E-06	< 0.0185	1.85E-08	< 0.0291	2.91E-08	< 0.0151	1.51E-08	< 0.0184	1.84E-08	< 0.0303	0.0152	< 0.0164	0.00820	< 0.0224	0.00112	< 0.0206	0.00103	< 0.0205	0.00103		
B223	B223-12.5	04/06/12	32	< 0.0314	3.14E-08	< 0.027	2.70E-08	< 0.0498	4.98E-08	0.377	3.77E-07	< 0.0116	1.16E-08	< 0.0157	1.57E-08	< 0.024	2.40E-08	< 0.0680	6.80E-08	< 0.0314	0.0157	< 0.0270	0.0135	< 0.0542	0.00271	< 0.0498	0.00249	< 0.0495	0.00248		
B224	B224-12.5	04/06/12	32	< 0.0155	1.55E-08	< 0.00903	9.03E-09	1.27	1.27E-06	29.3	2.93E-05	< 0.00939	9.39E-09	0.0803	8.03E-08	1.51	1.51E-06	13.5	1.35E-05	< 0.0155	0.00775	0.0252	0.0252	0.0475	0.00475	0.480	0.0480	0.136	0.0136		
B225	B225-10	04/11/12	37	< 0.0934	9.34E-08	0.471	4.71E-07	12.7	1.27E-05	135	1.35E-04	< 0.114	1.14E-07	< 0.0838	8.38E-08	8.56	8.56E-06	58.0	5.80E-05	< 0.0934	0.04670	0.471	0.4710	0.646	0.06460	3.40	0.3400	1.58	0.158		
B234	B234-0.5	05/11/12	46.5	11.8	1.18E-05	31.2	3.12E-05	326	3.26E-04	4,100	4.10E-03	37.9	3.79E-05	72.4	7.24E-05	304	3.04E-04	1,740	1.74E-03	1.21	1.21	8.55	8.55	20.4	2.04	78.3	7.83	44.9	4.49		
	B234-02.5		44.5	< 0.104	1.04E-07	< 0.117	1.17E-07	6.55	6.55E-06	68.7	6.87E-05	< 0.0901	9.01E-08	0.684	6.84E-07	2.81	2.81E-06	29.2	2.92E-05	< 0.104	0.0520	< 0.117	0.0585	0.406	0.0406	1.27	0.127	0.952	0.0952		
B235	B235-0.5	05/11/12	46.1	< 0.0443	4.43E-08	0.952	9.52E-07	12.3	1.23E-05	63.4	6.34E-05	1.20	1.20E-06	4.50	4.50E-06	8.84	8.84E-06	15.2	1.52E-05	< 0.0443	0.0222	0.469	0.4690	0.665	0.0665	1.88	0.188	2.00	0.2		
B236	B236-0.5	05/11/12	45.08	0.687	6.87E-07	9.82	9.82E-06	57.6	5.76E-05	287	2.87E-04	1.15	1.15E-06	7.32	7.32E-06	25.5	2.55E-05	74.1	7.41E-05	0.0799	0.0799	4.60	4.6000	4.36	0.436	11.5	1.15	13.1	1.31		
B237	B237-0.5	05/14/12	44.09	1.89	1.89E-06	16.2	1.62E-05	300	3.00E-04	3,510	3.51E-03	3.51	3.51E-06	19.5	1.95E-05	254	2.54E-04	1,390	1.39E-03	0.714	0.7140	7.38	7.3800	16.6	1.66	75.4	7.54	51.7	5.17		
	B237-02.5		42.09	< 0.104	1.04E-07	< 0.0832	8.32E-08	1.81	1.81E-06	22.2	2.22E-05	< 0.0968	9.68E-08	0.0862	8.62E-08	0.999	9.99E-07	8.45	8.45E-06	< 0.104	0.0520	< 0.0832	0.0416	< 0.146	0.0073	0.512	0.0512	0.237	0.0237		
B238	B238-0.5	05/14/12	44.52	2.47	2.47E-06	18.6	1.86E-05	424	4.24E-04	5,750	5.75E-03	7.53	7.53E-06	42.5	4.25E-05	473	4.73E-04	2,440	2.44E-03	0.599	0.5990	7.49	7.4900	21.2	2.12	117	11.7	52.9	5.29		
	B238-02.5		42.52	0.0568	5.68E-08	1.66	1.66E-06	40.1	4.01E-05	579	5.79E-04	0.162	1.62E-07	2.64	2.64E-06	42.8	4.28E-05	228	2.28E-04	< 0.0546	0.0273	0.860	0.8600	2.08	0.208	11.2	1.12	6.13	0.613		
B240	B240-0.5	07/09/12	45.63	18.4	1.84E-05	35.5	3.55E-05	243	2.43E-04	2,260	2.26E-03	58.2	5.82E-05	107	1.07E-04	204	2.04E-04	785	7.85E-04	1.44	1.4400	8.90	8.9000	16.8	1.68	55.3	5.53	35.8	3.58		
	B240-02.5		43.63	0.447	4.47E-07	< 0.0269	2.69E-08	6.69	6.69E-06	58.1	5.81E-05	< 0.0421	4.21E-08	2.22	2.22E-06	4.76	4.76E-06	18.5	1.85E-05	0.0774	0.0774	0.196	0.1960	0.473	0.04730	1.35	0.135	1.05	0.10500		
B241	B241-0.5	07/09/12	45.72	11.5	1.15E-05	22.3	2.23E-05	197	1.97E-04	2,490	2.49E-03	31.2	3.12E-05	56.7	5.67E-05	189	1.89E-04	931	9.31E-04	0.869	0.869	5									



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (nanograms per kilogram)																								2,3,7,8 TCDD - TEQ ⁽²⁾ (nanograms per kilogram)
			1,2,3,4,6,7,8 HpCDD		OCDD		2,3,7,8 TCDF		1,2,3,7,8 PeCDF		2,3,4,7,8 PeCDF		1,2,3,4,7,8 HxCDF		1,2,3,6,7,8 HxCDF		1,2,3,7,8,9 HxCDF		2,3,4,6,7,8 HxCDF		1,2,3,4,6,7,8 HpCDF		1,2,3,4,7,8,9 HpCDF		OCDF		
			0.01		0.0003		0.1		0.03		0.3		0.1		0.1		0.1		0.1		0.01		0.01		0.0003		
			Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	
B209	B209-10	04/05/12	9.41	0.0941	109	0.0327	< 0.0285	0.00143	< 0.0356	0.000534	< 0.0379	0.00569	< 0.0357	0.00179	< 0.0318	0.00159	< 0.0430	0.00215	< 0.0364	0.00182	1.35	0.0135	< 0.0679	0.000340	5.84	0.00175	0.258
	B209-12.5		1.92	0.0192	25.2	0.00756	< 0.0264	0.00132	< 0.0255	0.000383	< 0.0272	0.00408	< 0.0149	0.000745	< 0.0132	0.000660	< 0.0179	0.000895	< 0.0152	0.000760	0.296	0.00296	< 0.0362	0.000181	1.19	0.000357	0.100
B210	B210-12.5	03/29/12	0.325	0.00325	3.42	0.00103	< 0.0147	0.000735	< 0.0161	0.000242	< 0.0168	0.00252	< 0.00834	0.000417	< 0.00763	0.000382	< 0.00942	0.000471	< 0.00870	0.000435	0.0399	0.000399	< 0.0190	0.0000950	0.0840	0.0000252	0.0438
B211	B211-12.5	03/29/12	0.267	0.00267	2.45	0.000735	< 0.0118	0.000590	< 0.0191	0.000287	< 0.0199	0.00299	< 0.00971	0.000486	< 0.00888	0.000444	< 0.0109	0.000545	< 0.0101	0.000505	< 0.0204	0.000102	< 0.0265	0.000133	0.133	0.0000399	0.0416
B212	B212-12.5	03/29/12	0.594	0.00594	5.62	0.00169	< 0.0615	0.00308	< 0.0383	0.000575	< 0.0407	0.00611	< 0.0334	0.00167	< 0.0298	0.00149	< 0.0402	0.00201	< 0.0342	0.00171	0.104	0.00104	< 0.0610	0.000305	0.331	0.0000993	0.0932
B213	B213-0.5	03/29/12	133,000	1,330	3,580,000	1,070	< 0.554	0.0277	1.50	0.0450	2.61	0.783	91.9	9.19	26.0	2.60	< 4.14	0.207	81.5	8.15	14,100	141	460	4.60	241,000	72.3	2,860
B214	B214-04.5	03/30/12	1.40	0.0140	14.8	0.00444	< 0.0233	0.00117	< 0.0150	0.000225	< 0.0156	0.00234	0.0522	0.00522	< 0.0235	0.00118	< 0.0291	0.00146	< 0.0269	0.00135	0.238	0.00238	< 0.0503	0.000252	1.17	0.000351	0.141
B215	B215-06.5	03/30/12	0.521	0.00521	4.17	0.00125	< 0.0207	0.00104	< 0.0128	0.000192	< 0.0133	0.00200	< 0.0236	0.00118	< 0.0216	0.0011	< 0.0266	0.00133	< 0.0246	0.00123	0.172	0.00172	< 0.0614	0.000307	0.716	0.000215	0.0494
	B215-08		0.472	0.00472	3.22	0.000966	< 0.0952	0.00476	< 0.0616	0.000924	< 0.0656	0.00984	< 0.0591	0.00296	< 0.0527	0.00264	< 0.0713	0.00357	< 0.0604	0.00302	< 0.0596	0.000298	< 0.0805	0.000403	< 0.144	0.0000216	0.146
B216	B216-0.5	03/30/12	6,750	67.5	82,900	24.87	< 0.174	0.0087	< 0.169	0.002535	< 0.180	0.0270	17.9	1.79	6.94	0.6940	< 0.864	0.04320	18.8	1.88	1,470	14.7	88.0	0.88	6,920	2.076	151
	B216-02.5		358	3.58	3,870	1.16	< 0.300	0.0150	< 0.0126	0.000189	0.0571	0.0171	0.627	0.0627	0.192	0.0192	< 0.0547	0.00274	0.641	0.0641	56.8	0.568	2.63	0.0263	368	0.110	6.80
B217	B217-06.5	03/30/12	74.8	0.748	890	0.267	< 0.121	0.00605	0.0771	0.00231	0.107	0.0321	0.265	0.0265	0.216	0.0216	< 0.0574	0.00287	0.481	0.0481	13.1	0.131	1.01	0.0101	48.3	0.0145	1.64
B218	B218-06.5	03/30/12	0.382	0.00382	2.90	0.000870	< 0.0316	0.00158	< 0.0268	0.000402	< 0.0279	0.00419	< 0.0203	0.00102	< 0.0186	0.000930	< 0.0229	0.00115	< 0.0213	0.00107	0.141	0.00141	< 0.0754	0.000377	0.721	0.000216	0.0443
	B218-08		0.558	0.00558	5.70	0.00171	< 0.0766	0.00383	< 0.0433	0.000650	< 0.0461	0.00692	< 0.0382	0.00191	< 0.0340	0.00170	< 0.0460	0.00230	< 0.0390	0.00195	< 0.0624	0.000312	< 0.0843	0.000422	0.262	0.0000786	0.115
B221	B221-08	04/06/12	3,870	38.7	99,700	29.9	< 0.0817	0.00409	0.118	0.00354	0.255	0.0765	6.59	0.659	1.26	0.126	< 0.311	0.0156	5.43	0.543	667	6.67	22.4	0.224	3,550	1.07	93.5
	B221-12.5		323	3.23	3,950	1.19	< 0.0903	0.00452	< 0.0453	0.000680	0.0749	0.0225	0.900	0.0900	< 0.201	0.0101	< 0.272	0.0136	0.554	0.0554	48.9	0.489	2.29	0.0229	292	0.0876	6.67
B222	B222-12.5	04/06/12	0.508	0.00508	6.66	0.00200	< 0.0185	0.000925	< 0.0279	0.000419	< 0.0291	0.00437	< 0.0166	0.000830	< 0.0151	0.000755	< 0.0186	0.000930	< 0.0172	0.000860	0.0988	0.000988	< 0.0237	0.000119	0.308	0.0000924	0.0439
B223	B223-12.5	04/06/12	0.377	0.00377	3.05	0.000915	< 0.0116	0.000580	< 0.0151	0.000227	< 0.0157	0.00236	< 0.0263	0.00132	< 0.0240	0.00120	< 0.0296	0.00148	< 0.0275	0.00138	< 0.0680	0.000340	< 0.0880	0.000440	< 0.0480	0.00000720	0.0509
B224	B224-12.5	04/06/12	17.8	0.178	208	0.0624	< 0.00939	0.000470	< 0.0154	0.000231	< 0.0160	0.00240	< 0.0452	0.000452	< 0.0208	0.00208	< 0.0114	0.000570	< 0.0106	0.000530	2.89	0.0289	< 0.172	0.00172	16.8	0.00504	0.386
B225	B225-10	04/11/12	82.7	0.827	855	0.2565	< 0.114	0.005700	< 0.0789	0.0011835	< 0.0838	0.01257	0.284	0.0284	< 0.135	0.00675	< 0.183	0.00915	0.326	0.0326	13.3	0.133	0.552	0.00552	64.1	0.0192	2.42
B234	B234-0.5	05/11/12	2,500	25.0	27,300	8.19	1.39	0.139	0.792	0.0238	1.53	0.459	6.81	0.681	5.05	0.505	< 0.376	0.0188	9.63	0.963	384	3.84	25.8	0.258	2,070	0.621	64.8
	B234-02.5		41.3	0.413	475	0.143	< 0.0901	0.00451	< 0.0780	0.00117	< 0.0829	0.0124	0.139	0.0139	< 0.102	0.00510	< 0.139	0.00695	< 0.117	0.00585	6.73	0.0673	0.373	0.00373	31.2	0.00936	1.06
B235	B235-0.5	05/11/12	35.6	0.356	328	0.098	< 0.0327	0.00164	< 0.0368	0.000552	< 0.0376	0.0056	0.321	0.0321	0.251	0.02510	< 0.0594	0.00297	0.274	0.0274	6.11	0.0611	0.197	0.00197	13.1	0.00393	1.56
B236	B236-0.5	05/11/12	185	1.85	1,420	0.426	< 0.215	0.01075	0.152	0.00456	0.205	0.0615	0.858	0.0858	0.945	0.09450	< 0.0570	0.00285	0.767	0.0767	27.8	0.278	1.07	0.0107	75.3	0.02259	10.5
B237	B237-0.5	05/14/12	2,170	21.7	25,700	7.710	< 0.296	0.01480	0.542	0.01626	< 0.252	0.0378	5.18	0.518	3.38	0.33800	< 0.331	0.01655	1.71	0.171	344	3.44	14.4	0.144	1,970	0.591	57.2
	B237-02.5		13.5	0.135	149	0.045	< 0.0968	0.00484	< 0.0565	0.0008475	< 0.0576	0.0086	< 0.116	0.0058	< 0.109	0.00545	< 0.155	0.00775	< 0.116	0.0058	2.00	0.02	< 0.504	0.00252	10.8	0.00324	0.420
B238	B238-0.5	05/14/12	3,020	30.2	32,700	9.810	< 0.280	0.01400	0.271	0.00813	0.514	0.1542	9.13	0.913	5.88	0.58800	< 0.466	0.0233	2.20	0.22	642	6.42	29.0	0.29	3,490	1.047	76.9
	B238-02.5		365	3.65	3,060	0.918	< 0.0502	0.00251	< 0.0448	0.000672	< 0.0526	0.0079	0.771	0.0771	0.556	0.05560	< 0.505	0.02525	1.36	0.136	58.2	0.582	2.71	0.0271	280	0.084	8.39
B240	B240-0.5	07/09/12	1,370	13.7	16,600	4.980000	2.37	0.237	1.31	0.039300	2.07	0.62100	6.26	0.62600	4.87	0.487000	< 0.287	0.01435	10.1	1.01000	217	2.17	9.98	0.0998	981	0.294300	45.4
	B240-02.5		34.9	0.349	397	0.11910	< 0.0421	0.002105	< 0.0348	0.000522	< 0.0360	0.00540	0.218	0.02180	< 0.129	0.01290	< 0.0669	0.00335	0.279	0.02790	5.34	0.0534	0.267	0.002670	22.6	0.00678	1.17
B241	B241-0.5	07/09/12	1,520	15.2	18,800	5.6	< 0.593	0.02965	0.737	0.02211	1.24	0.3720	4.60	0.46	3.38	0.338	< 0.353	0.0177	2.76	0.276	235	2.35	10.3	0.103	1,190	0.36	39.9
	B241-02.5		1.77	0.0177	20.0	0.01	< 0.0425	0.00213	< 0.0338	0.000507	< 0.0373	0.0056	0.0488	0.0049	0.0478	0.0048	< 0.0451	0.002255	< 0.0381	0.001905	0.335	0.00335	< 0.0356	0.000178	1.11	0.000333	0.120
B242	B242-0.5	07/11/12	3,110	31.1	45,800	13.740	0.816	0.08160	0.785	0.02355	1.48	0.4440	8.18	0.818	5.17	0.51700	< 0.699	0.03495									



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Elevation (feet amsl)	Analytical Results ⁽¹⁾ (nanograms per kilogram)																									
				Total TCDDs		Total PeCDDs		Total HxCDDs		Total HpCDDs		Total TCDFs		Total PeCDFs		Total HxCDFs		Total HpCDFs		2,3,7,8 TCDD		1,2,3,7,8 PeCDD		1,2,3,4,7,8 HxCDD		1,2,3,6,7,8 HxCDD		1,2,3,7,8,9 HxCDD	
				Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Measured Concentration (mg/kg)	Measured Concentration	Corrected for TEF								
Excavation #1																													
EX01-P7	P7-EX01-SSW01-02.5	09/26/11	44.5	< 0.0704	7.04E-08	< 0.0418	4.18E-08	< 0.0476	4.76E-08	0.952	9.52E-07	1.03	1.03E-06	< 0.0281	2.81E-08	< 0.0341	3.41E-08	0.234	2.34E-07	< 0.0704	0.0352	< 0.0418	0.0209	< 0.0541	0.00271	< 0.0476	0.00238	< 0.0483	0.00242
EX01-P8	P8-EX01-SSW01-02.5	09/26/11	44.7	0.443	4.43E-07	7.78	7.78E-06	124	1.24E-04	1,290	1.29E-03	0.356	3.56E-07	6.75	6.75E-06	87.4	8.74E-05	490	4.90E-04	0.443	0.443	4.35	4.35	7.54	0.754	33.1	3.31	19.1	1.91
EX01-N8	N8-EX01-NSW01-05	09/27/11	42	< 0.0262	2.62E-08	< 0.274	2.74E-07	0.104	1.04E-07	0.549	5.49E-07	0.444	4.44E-07	< 0.0242	2.42E-08	0.125	1.25E-07	0.141	1.41E-07	< 0.0262	0.0131	< 0.0274	0.0137	< 0.0399	0.00200	< 0.0351	0.00176	< 0.0356	0.00178
EX01-O8	O8-EX01-BTM01-08	09/27/11	39	< 0.0432	4.32E-08	< 0.0588	5.88E-08	0.275	2.75E-07	2.43	2.43E-06	1.02	1.02E-06	< 0.0404	4.04E-08	0.252	2.52E-07	0.458	4.58E-07	< 0.0432	0.0216	< 0.0588	0.0294	< 0.0588	0.00294	< 0.0517	0.00259	< 0.0524	0.00262
Excavation #2																													
EX02-K8	K8-EX02-ESW01-0.5	09/28/11	46	0.389	3.89E-07	4.40	4.40E-06	76.6	7.66E-05	1,090	1.09E-03	2.38	2.38E-06	5.76	5.76E-06	68.3	6.83E-05	464	4.64E-04	0.234	0.234	2.07	2.07	4.27	0.427	21.0	2.10	9.32	0.932
EX02-K6	K6-EX02-WSW03-02.5	09/29/11	43.7	0.103	1.03E-07	8.16	8.16E-06	71.8	7.18E-05	389	3.89E-04	2.18	2.18E-06	5.14	5.14E-06	31.8	3.18E-05	131	1.31E-04	0.364	0.364	3.84	3.84	6.86	0.686	15.4	1.54	14.1	1.41
	FD01-20110929			< 0.32	3.20E-07	5.9	5.90E-06	56	5.60E-05	330	3.30E-04	< 0.24	2.40E-07	2.2	2.20E-06	23	2.30E-05	110	1.10E-04	< 0.32	0.1600	3.70	3.70	5.50	0.550	13.0	1.30	9.9	0.99
EX02-L8	L8-EX02-ESW01-0.5	09/29/11	46	1.07	1.07E-06	1.30	1.30E-06	2.81	2.81E-06	6.21	6.21E-06	6.27	6.27E-06	8.80	8.80E-06	2.36	2.36E-06	3.33	3.33E-06	< 0.0562	0.0281	0.176	0.176	< 0.0757	0.00379	0.294	0.294	0.285	0.285
EX02-M6	M6-EX02-SSW01-0.5	09/28/11	45.7	2.37	2.37E-06	13.4	1.34E-05	118	1.18E-04	781	7.81E-04	8.94	8.94E-06	23.6	2.36E-05	71.0	7.10E-05	204	2.04E-04	0.688	0.6880	4.23	4.23	6.27	0.627	20.6	2.060	16.0	1.6
	M6-EX02-SSW01-04.5	09/29/11	41.7	< 0.196	1.96E-07	< 0.192	1.92E-07	< 0.137	1.37E-07	1.43	1.43E-06	< 0.197	1.97E-07	< 0.131	1.31E-07	< 0.0876	8.76E-08	< 0.117	1.17E-07	< 0.196	0.0980	< 0.192	0.0960	< 0.156	0.0078	< 0.137	0.007	< 0.140	0.007
Excavation #3																													
EX03-H3	EX03-H3-NE-BTM-37.5	08/10/12	37.5	0.304	3.04E-07	< 0.106	1.06E-07	21.7	2.17E-05	627	6.27E-04	< 0.124	1.24E-07	0.935	9.35E-07	30.6	3.06E-05	208	2.08E-04	< 0.0882	0.0441	< 0.106	0.0530	0.431	0.0431	7.65	0.765	1.66	0.166
EX03-N14	N14-SW-EX03-SSW-45.5	10/05/12	45.5	0.876	8.76E-07	1.06	1.06E-06	9.64	9.64E-06	94.4	9.44E-05	3.31	3.31E-06	6.39	6.39E-06	12.8	1.28E-05	33.3	3.33E-05	< 0.104	0.0520	0.414	0.4140	0.741	0.0741	2.11	0.211	1.48	0.148
EX03-O11	O11-NE-EX03-SSW-45.5	10/05/12	45.5	13.0	1.30E-05	57.8	5.78E-05	570	5.70E-04	5,670	5.67E-03	27.1	2.71E-05	81.4	8.14E-05	371	3.71E-04	1,810	1.81E-03	2.23	2.2300	19.7	19.7000	40.6	4.06	132	13.2	86.1	8.61
EX03-O13	O13-NW-EX03-SSW-45.5	10/05/12	45.5	1.92	1.92E-06	6.61	6.61E-06	86.2	8.62E-05	980	9.80E-04	3.97	3.97E-06	14.8	1.48E-05	63.1	6.31E-05	214	2.14E-04	0.307	0.3070	2.69	2.6900	6.50	0.65	18.0	1.8	12.4	1.24
MTCA Method B Cleanup Level ⁽³⁾																													
Seattle Area Background Level ⁽⁴⁾																													



Table 16
Soil Analytical Results for Dioxins (EDLs)
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Sample Location	Sample ID	Date Sampled	Analytical Results ⁽¹⁾ (nanograms per kilogram)																								2,3,7,8 TCDD - TEQ ⁽²⁾ (nanograms per kilogram)	
			1,2,3,4,6,7,8 HpCDD		OCDD		2,3,7,8 TCDF		1,2,3,7,8 PeCDF		2,3,4,7,8 PeCDF		1,2,3,4,7,8 HxCDF		1,2,3,6,7,8 HxCDF		1,2,3,7,8,9 HxCDF		2,3,4,6,7,8 HxCDF		1,2,3,4,6,7,8 HpCDD		1,2,3,4,7,8,9 HpCDF		OCDF			
			0.01		0.0003		0.1		0.03		0.3		0.1		0.1		0.1		0.1		0.1		0.01		0.01			0.0003
			Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF	Measured Concentration	Corrected for TEF
Excavation #1																												
EX01-P7	P7-EX01-SSW01-02.5	09/26/11	0.898	0.00898	8.08	0.00242	< 0.0498	0.00249	< 0.0264	0.000396	< 0.0281	0.00422	< 0.0384	0.00192	< 0.0341	0.00171	< 0.0462	0.00231	< 0.0392	0.00196	0.117	0.00117	< 0.0902	0.000451	0.396	0.000119	0.0917	
EX01-P8	P8-EX01-SSW01-02.5	09/26/11	753	7.53	9,730	2.92	< 0.141	0.00705	< 0.148	0.00222	< 0.157	0.0236	2.34	0.234	1.38	0.138	< 0.285	0.0143	3.03	0.303	104	1.04	7.41	0.0741	539	0.162	23.2	
EX01-N8	N8-EX01-NSW01-05	09/27/11	0.251	0.00251	1.73	0.000519	< 0.0257	0.00129	< 0.0228	0.000342	< 0.0242	0.00363	< 0.0231	0.00116	< 0.0206	0.00103	< 0.0279	0.00140	< 0.0236	0.00118	0.141	0.00141	< 0.0392	0.000196	0.115	0.0000345	0.0470	
EX01-O8	O8-EX01-BTM01-08	09/27/11	1.21	0.0121	14.2	0.00426	< 0.0334	0.00167	< 0.0381	0.000572	< 0.0404	0.00606	< 0.0349	0.00175	< 0.0311	0.00156	< 0.0420	0.00210	< 0.0356	0.00178	0.300	0.00300	< 0.0649	0.000325	0.758	0.000227	0.0945	
Excavation #1																												
EX02-K8	K8-EX02-ESW01-0.5	09/28/11	638	6.38	8,660	2.60	< 0.0460	0.00230	0.118	0.00354	0.139	0.0417	1.54	0.154	0.808	0.0808	< 0.190	0.00950	2.04	0.204	89.8	0.898	5.84	0.0584	486	0.146	16.3	
EX02-K6	K6-EX02-WSW03-02.5	09/29/11	233	2.33	1,930	0.579	< 0.0587	0.00294	0.145	0.00435	0.165	0.0495	1.28	0.128	0.990	0.0990	< 0.180	0.00900	1.66	0.166	34.9	0.349	2.68	0.0268	130	0.0390	11.6	
	FD01-20110929	09/29/11	200	2.00	1,900	0.570	< 0.210	0.0105	< 0.160	0.00240	< 0.160	0.0240	1.30	0.130	0.820	0.0820	0.180	0.0180	0.480	0.0480	30.0	0.300	2.10	0.0210	130	0.0390	9.94	
EX02-L8	L8-EX02-ESW01-0.5	09/29/11	3.32	0.0332	37.5	0.0113	< 0.187	0.00935	0.283	0.00849	0.314	0.0942	0.485	0.0485	0.255	0.0255	< 0.0424	0.00212	0.395	0.0395	1.56	0.0156	0.207	0.00207	2.35	0.000705	0.556	
EX02-M6	M6-EX02-SSW01-0.5	09/28/11	400	4	4,640	1.392	0.370	0.037	0.430	0.0129	0.580	0.174	2.59	0.259	2.05	0.205	< 0.308	0.0154	2.93	0.293	57.2	0.572	3.68	0.0368	181	0.0543	16.3	
	M6-EX02-SSW01-04.5	09/29/11	0.762	0.00762	6.34	0.002	< 0.197	0.00985	< 0.123	0.001845	< 0.131	0.01965	< 0.0984	0.00492	< 0.0876	0.00438	< 0.119	0.00595	< 0.101	0.00505	< 0.117	0.000585	< 0.157	0.000785	0.826	0.000248	0.278	
Excavation #3																												
EX03-H3	EX03-H3-NE-BTM-37.5	08/10/12	362	3.62	6,890	2.067	< 0.124	0.00620	< 0.0675	0.0010125	< 0.0733	0.0110	0.793	0.0793	0.304	0.03040	< 0.275	0.01375	0.934	0.0934	49.5	0.495	1.69	0.0169	268	0.0804	7.59	
EX03-N14	N14-SW-EX03-SSW-45.5	10/05/12	56.2	0.562	486	0.146	< 0.230	0.01150	< 0.0829	0.0012435	< 0.0915	0.0137	1.13	0.113	1.54	0.15400	< 0.178	0.0089	0.555	0.0555	9.11	0.0911	1.02	0.0102	73.9	0.02217	2.09	
EX03-O11	O11-NE-EX03-SSW-45.5	10/05/12	2,950	29.5	32,800	9.840	1.82	0.18200	1.42	0.0426	1.78	0.5340	11.1	1.11	7.84	0.78400	< 0.443	0.02215	16.4	1.64	438	4.38	21.6	0.216	2,910	0.873	96.9	
EX03-O13	O13-NW-EX03-SSW-45.5	10/05/12	557	5.57	8,180	2.454	0.399	0.03990	0.282	0.00846	0.510	0.1530	2.61	0.261	1.69	0.16900	< 0.924	0.0462	2.97	0.297	58.4	0.584	3.53	0.0353	341	0.1023	16.4	
MTCA Method B Cleanup Level ⁽³⁾																											11	
Seattle Area Background Level ⁽⁴⁾																											46	

NOTES:

Red denotes concentration exceeds MTCA cleanup level.

Sample analyses performed by Columbia Analytical Services, of Houston, Texas.

The TEQ is referred to as the total toxicity equivalent concentration (TTEC) by the Washington State Department of Ecology.

⁽¹⁾Analyzed by EPA Method 8290B.

⁽²⁾2,3,7,8 TCDD TEQ calculated by the sum of each congener concentration multiplied by its TEF. When the reported measured concentration is below the laboratory EDL, the congener concentration is considered to be half the the EDL.

⁽³⁾MTCA Cleanup Regulation, CLARC, Soil, Method B, Carcinogen, Standard Formula Value, Direct Contact (ingestion only), unrestricted land use. CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

⁽⁴⁾Seattle Area Background as shown by Washington State Department of Ecology. 2011. Urban Seattle Area Soil Dioxin and PAH Concentration Initial Summary Report. Pub. No. 11-09-049. <<https://fortress.wa.gov/ecy/publications/publications/1109049.pdf>>. September.

< = not detected at concentration above the laboratory reporting limit

-- = not applicable/not measured

amsl = above mean sea level

bgs = below ground surface

CLARC = Cleanup Levels and Risk Calculations

Dioxins = polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans

EDL = estimated detection limit

EPA = U.S. Environmental Protection Agency

HpCDD = heptachlorodibenzo-p-dioxin

HxCDF = hexachlorodibenzofuran

HxCDD = hexachlorodibenzo-p-dioxin

HxCDF = hexachlorodibenzofuran

LDR = land disposal restrictions

mg/kg = milligrams per kilogram

MTCA = Washington State Model Toxics Control Act

NE = not established

OCDD = octachlorodibenzo-p-dioxin

OCDF = octachlorodibenzofuran

PeCDD = pentachlorodibenzo-p-dioxin

PeCDF = pentachlorodibenzofuran

RCRA = Resource Conservation and Recovery Act

TCDD = tetrachlorodibenzo-p-dioxin

TCDF = tetrachlorodibenzofuran

TEF = Toxicity Equivalency Factor

TEQ = Toxicity Equivalency Quotient



Table 17
Soil Analytical Results for Selected VOCs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																	
					Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,2,4 Trimethyl-benzene	1,3,5 Trimethyl-benzene	Acetone	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	2-Butanone		
					Bulk Terminal Property																	
GP01	GP01-8	SoundEarth	08/31/06	8	<0.00142	<0.00178	<0.00213	<0.00178	<0.00213	<0.00178	<0.00712	<0.00356	<0.0213	<0.00356	<0.00356	<0.00356	<0.00356	<0.00356	<0.00356	<0.0107		
	GP01-11			11	<0.000655	<0.000655	<0.000982	<0.000818	<0.000655	<0.000818	<0.00164	<0.00164	<0.00982	<0.00164	<0.00164	<0.00164	<0.00164	<0.00164	<0.00164	<0.00164	<0.00164	<0.00491
	GP01-15			15	<0.00122	<0.00122	<0.00183	<0.00152	<0.00183	<0.00152	<0.00305	<0.00305	<0.0183	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305
GP02	GP02-8	SoundEarth	08/31/06	8	<0.00133	<0.00166	<0.00200	<0.00166	<0.00133	<0.00166	<0.00333	<0.00333	<0.00200	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00998	
	GP02-11			11	<0.00128	<0.00128	<0.00192	<0.00160	<0.00128	<0.00160	<0.00320	<0.00320	<0.0192	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00320	<0.00960
	GP02-15			15	<0.00138	<0.00172	<0.00206	<0.00172	<0.00206	<0.00172	<0.00344	<0.00344	<0.0206	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344
GP03	GP03-6	SoundEarth	08/31/06	6	<0.00139	<0.00139	<0.00209	<0.00174	<0.00209	<0.00174	<0.00348	<0.00348	<0.0209	<0.00348	<0.00348	<0.00348	<0.00348	<0.00348	<0.00348	<0.00348	<0.0104	
	GP03-12			12	<0.00148	<0.00148	<0.00222	<0.00185	<0.00222	<0.00185	<0.00369	<0.00369	<0.0222	<0.00369	<0.00369	<0.00369	<0.00369	<0.00369	<0.00369	<0.00369	<0.00369	<0.0111
GP04	GP04-8	SoundEarth	08/31/06	8	<0.00126	<0.00126	<0.00315	<0.00158	<0.00315	<0.00158	<0.00315	<0.00315	<0.0189	<0.00315	<0.00315	<0.00315	<0.00315	<0.00315	<0.00315	<0.00315	<0.00946	
	GP04-10			10	<0.00138	<0.00172	<0.00206	<0.00172	<0.00206	<0.00172	<0.00344	<0.00344	<0.0206	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.00344	<0.0103
	GP04-15			15	<0.00137	<0.00137	<0.00206	<0.00171	<0.00206	<0.00171	<0.00343	<0.00343	<0.0206	<0.00343	<0.00343	<0.00343	<0.00343	<0.00343	<0.00343	<0.00343	<0.00343	<0.00343
GP05	GP05-8	SoundEarth	08/31/06	8	<0.00137	<0.00137	<0.00205	<0.00171	<0.00205	<0.00171	<0.00342	<0.00342	<0.0205	<0.00342	<0.00342	<0.00342	<0.00342	<0.00342	<0.00342	<0.00342	<0.0102	
	GP05-12			12	<0.00148	<0.00185	<0.00222	<0.00185	<0.00222	<0.00185	<0.00370	<0.00370	<0.0222	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.0111
	GP05-15			15	<0.00140	<0.00140	<0.00209	<0.00174	<0.00209	<0.00174	<0.00349	<0.00349	<0.0209	<0.00349	<0.00349	<0.00349	<0.00349	<0.00349	<0.00349	<0.00349	<0.00349	<0.00349
GP06	GP06-2	SoundEarth	08/31/06	2	<0.113	<0.113	<0.113	<0.113	<0.113	<0.113	4.22	1.26	<1.13	0.459	1.17	0.816	1.07	0.645	<0.113	<1.13		
	GP06-9.5			9.5	<0.00129	<0.00129	<0.00194	<0.00161	<0.00194	<0.00161	<0.00323	<0.00323	<0.0194	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00969
	GP06-15			15	<0.00133	<0.00166	<0.00200	<0.00166	<0.00200	<0.00166	<0.00333	<0.00333	<0.0200	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
GP07	GP07-5.5	SoundEarth	08/31/06	5.5	<0.00133	<0.00133	<0.00200	<0.00167	<0.00200	<0.00167	<0.00333	<0.00333	<0.0200	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00999	
	GP07-12			12	<0.00126	<0.00157	<0.00189	<0.00157	<0.00189	<0.00157	<0.00314	<0.00314	<0.0189	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00943
GP08	GP08-2.5	SoundEarth	08/31/06	2.5	<0.0989	<0.0989	<0.0989	<0.0989	<0.0989	<0.0989	3.09	1.11	<0.989	0.67	1.19	1.95	0.252	0.507	<0.0989	<0.989		
	GP08-6			6	<0.00140	<0.00140	<0.00210	<0.00175	<0.00210	<0.00175	<0.00350	<0.00350	0.255	<0.00350	<0.00350	<0.00350	<0.00350	<0.00350	<0.00350	<0.00350	<0.00350	<0.0105
	GP08-12			12	<0.00130	<0.00130	<0.00195	<0.00163	<0.00195	<0.00163	<0.00325	<0.00325	<0.0195	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	<0.00325	<0.00976
	GP08-15			15	<0.00118	<0.00118	<0.00148	<0.00148	<0.00148	<0.00148	<0.00296	<0.00296	<0.0177	<0.00296	<0.00296	<0.00296	<0.00296	<0.00296	<0.00296	<0.00296	<0.00296	<0.00887
GP09	GP09-8	SoundEarth	09/01/06	8	<0.00230	<0.00288	<0.00345	<0.00288	<0.00345	<0.00288	<0.00576	<0.00576	<0.0345	<0.00576	<0.00576	<0.00576	<0.00576	<0.00576	<0.00576	<0.00576	<0.0173	
	GP09-12			12	<0.00219	<0.00274	<0.00329	<0.00274	<0.00329	<0.00274	<0.00548	<0.00548	<0.0329	<0.00548	<0.00548	<0.00548	<0.00548	<0.00548	<0.00548	<0.00548	<0.00548	<0.0164
	GP09-15			15	<0.00205	<0.00256	<0.00307	<0.00256	<0.00307	<0.00256	<0.00512	<0.00512	<0.0307	<0.00512	<0.00512	<0.00512	<0.00512	<0.00512	<0.00512	<0.00512	<0.00512	<0.0154
GP10	GP10-4	SoundEarth	09/01/06	4	<0.00126	<0.00157	<0.00189	<0.00157	<0.00189	<0.00157	0.00501	<0.00314	0.0496	<0.00314	<0.00314	0.005	<0.00314	<0.00314	<0.00314	0.0193		
	GP10-7			7	<0.0948	<0.0948	<0.0948	<0.0948	<0.0948	<0.0948	26.7	28.6	10.3	6	6.12	14.3	4.39	3.34	0.262	2.1		
	GP10-15			15	<0.00130	<0.00162	<0.00194	<0.00162	<0.00194	<0.00162	<0.00324	<0.00324	<0.0194	0.00389	<0.00324	<0.00324	<0.00324	<0.00324	<0.00324	<0.00324	<0.00324	<0.00972
GP11	GP11-8	SoundEarth	09/01/06	8	<0.00129	<0.00161	<0.00194	<0.00161	<0.00194	<0.00161	<0.00323	<0.00323	<0.0194	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00969	
	GP11-10			10	<0.00134	<0.00134	<0.00202	<0.00168	<0.00202	<0.00168	<0.00336	<0.00336	<0.0202	<0.00336	<0.00336	<0.00336	<0.00336	<0.00336	<0.00336	<0.00336	<0.00336	<0.0101
	GP11-15			15	<0.00122	<0.00122	<0.00183	<0.00152	<0.00183	<0.00152	<0.00305	<0.00305	<0.0183	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00305	<0.00915
GP12	GP12-12	SoundEarth	09/01/06	12	<0.00134	<0.00167	<0.00201	<0.00167	<0.00201	<0.00167	<0.00335	<0.00335	<0.0201	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.0100	
	GP12-15			15	<0.00133	<0.00133	<0.00199	<0.00166	<0.00199	<0.00166	<0.00332	<0.00332	<0.0199	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	<0.00997
GP13	GP13-8	SoundEarth	09/01/06	8	<0.00150	<0.00150	<0.00226	<0.00188	<0.00226	<0.00188	<0.00376	<0.00376	<0.0226	<0.00376	<0.00376	<0.00376	<0.00376	<0.00376	<0.00376	<0.00376	<0.0113	
	GP13-12			12	<0.00136	<0.00169	<0.00203	<0.00169	<0.00203	<0.00169	<0.00339	<0.00339	<0.0203	<0.00339	<0.00339	<0.00339	<0.00339	<0.00339	<0.00339	<0.00339	<0.00339	<0.0102
	GP13-14			14	<0.00126	<0.00126	<0.00188	<0.00157	<0.00188	<0.00157	<0.00314	<0.00314	<0.0188	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00314	<0.00942
GP14	GP14-7	SoundEarth	09/01/06	7	<0.00153	<0.00153	<0.00230	<0.00192	<0.00230	<0.00192	0.0119	0.0164	0.067	0.0119	0.00627	0.0171	0.00483	0.00556	<0.00383	0.0152		
	GP14-10			10	<0.00126	<0.00157	<0.00189	<0.00157	<0.00189	<0.00157	0.00861	0.00804	0.0328	0.00329	<0.00315	0.00417	<0.00315	<0.00315	<0.00315	<0.00315	0.0162	
	GP14-15			15	<0.00120	<0.00120	<0.00180	<0.00150	<0.00180	<0.00150	<0.00300	<0.00300	<0.0180	<0.00300	<0.00300	<						



Table 17
Soil Analytical Results for Selected VOCs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well/Boring ID	Sample ID	Sampled by	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																
					Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	2-Butanone	
Bulk Terminal Property																					
01MW37/SB-58	SB58-2.5	SoundEarth	09/07/06	2.5	<0.00252	<0.00315	<0.00378	<0.00315	<0.00378	<0.00315	<0.00631	<0.00631	<0.0378	<0.00631	<0.00631	<0.00631	<0.00631	<0.00631	<0.0189		
	SB58-7.5			7.5	<0.00216	<0.00270	<0.00324	<0.00270	<0.00324	<0.00270	<0.00324	<0.00270	<0.00541	<0.00541	<0.0324	<0.00541	<0.00541	<0.00541	<0.00541	<0.00541	<0.0162
	SB58-12.5			12.5	<0.00212	<0.00265	<0.00319	<0.00265	<0.00319	<0.00265	<0.00319	<0.00265	<0.00531	<0.00531	<0.0319	<0.00531	<0.00531	<0.00531	<0.00531	<0.00531	<0.00531
01MW38/SB-59	SB59-2.5'	SoundEarth	09/07/06	2.5	<0.00199	<0.00249	<0.00299	<0.00249	<0.00299	<0.00249	30.6	13	0.461	3.31	3.85	5.27	4.23	0.171	0.0161	<0.0150	
	SB59-7.5'			7.5	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.53	0.112	<1.00	<0.100	0.414	<0.100	0.388	0.310	<0.100	<1.00
	SB59-12.5			12.5	<0.00215	<0.00268	<0.00322	<0.00268	<0.00322	<0.00268	<0.00322	<0.00268	<0.00537	<0.00537	<0.0322	<0.00537	<0.00537	<0.00537	<0.00537	<0.00537	<0.0161
01MW39/SB-60	SB60-2.5	SoundEarth	09/07/06	2.5	<0.00242	<0.00303	<0.00363	<0.00303	<0.00363	<0.00303	<0.00606	<0.00606	<0.0363	<0.00606	<0.00606	<0.00606	<0.00606	<0.00606	<0.00606	<0.0182	
	SB60-7.5			7.5	<0.00212	<0.00264	<0.00317	<0.00264	<0.00317	<0.00264	<0.00317	<0.00529	<0.00529	<0.0317	<0.00529	<0.00529	<0.00529	<0.00529	<0.00529	<0.0159	
	SB60-12.5			12.5	<0.00211	<0.00264	<0.00317	<0.00264	<0.00317	<0.00264	<0.00317	<0.00528	<0.00528	<0.0317	<0.00528	<0.00528	<0.00528	<0.00528	<0.00528	<0.00528	<0.0158
01MW40/SB-61	SB61-2.5	SoundEarth	09/07/06	2.5	<0.00220	<0.00275	<0.00329	<0.00275	<0.00329	<0.00275	<0.00549	<0.00549	<0.0329	<0.00549	<0.00549	<0.00549	<0.00549	<0.00549	<0.00549	<0.0165	
	SB61-7.5			7.5	<0.00191	<0.00238	<0.00286	<0.00238	<0.00286	<0.00238	<0.00286	<0.00476	<0.00476	<0.0286	<0.00476	<0.00476	<0.00476	<0.00476	<0.00476	<0.0143	
	SB61-12.5			12.5	<0.00172	<0.00215	<0.00258	<0.00215	<0.00258	<0.00215	<0.00258	<0.00430	<0.00430	<0.0258	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.00430	<0.0129
01MW41/SB-62	SB62-2.5	SoundEarth	09/08/06	2.5	<0.00192	<0.00241	<0.00289	<0.00241	<0.00289	<0.00241	0.00534	<0.00481	0.0433	<0.00481	<0.00481	<0.00481	<0.00481	<0.00481	<0.00481	<0.0144	
	SB62-7.5			7.5	<0.00203	<0.00253	<0.00304	<0.00253	<0.00304	<0.00253	<0.00304	<0.00507	<0.00507	<0.0304	<0.00507	<0.00507	<0.00507	<0.00507	<0.00507	<0.0152	
	SB62-12.5			12.5	<0.00221	<0.00276	<0.00331	<0.00276	<0.00331	<0.00276	<0.00331	<0.00552	<0.00552	<0.0331	<0.00552	<0.00552	<0.00552	<0.00552	<0.00552	<0.00552	<0.0165
01MW42/SB-63	SB63-2.5	SoundEarth	09/08/06	2.5	<0.00186	<0.00232	<0.00279	<0.00232	<0.00279	<0.00232	<0.00465	<0.00465	<0.0279	<0.00465	<0.00465	<0.00465	<0.00465	<0.00465	<0.00465	<0.0139	
	SB63-7.5			7.5	<0.00202	<0.00252	<0.00303	<0.00252	<0.00303	<0.00252	<0.00303	<0.00505	<0.00505	<0.0303	<0.00505	<0.00505	<0.00505	<0.00505	<0.00505	<0.00505	<0.0151
	SB63-12.5			12.5	<0.00200	<0.00250	<0.00300	<0.00250	<0.00300	<0.00250	<0.00300	<0.00500	<0.00500	<0.0300	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.0150
01MW43/SB-64	SB64-7.5	SoundEarth	09/08/06	7.5	<0.00201	<0.00251	<0.00301	<0.00251	<0.00301	<0.00251	<0.00502	<0.00502	0.0412	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.0151	
	SB64-12.5			12.5	<0.00179	<0.00224	<0.00269	<0.00224	<0.00269	<0.00224	<0.00448	<0.00448	<0.0269	<0.00448	<0.00448	<0.00448	<0.00448	<0.00448	<0.00448	<0.00448	<0.0135
	SB64-17.5			17.5	<0.00206	<0.00258	<0.00309	<0.00258	<0.00309	<0.00258	<0.00309	<0.00516	<0.00516	<0.0309	<0.00516	<0.00516	<0.00516	<0.00516	<0.00516	<0.00516	<0.0155
01MW59/B082	B082-2.5	SoundEarth	11/17/08	2.5	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	
	B082-05			5	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--
	B082-10			10	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--
West Commodore Way																					
01MW31	01MW31-10	SoundEarth	07/06/06	10	<0.00180	<0.00226	<0.00271	<0.00226	<0.00271	<0.00226	0.163	0.00911	<0.0271	0.00760	0.00663	0.0279	<0.00451	0.00474	<0.00451	<0.0135	
01MW32	01MW32-25	SoundEarth	07/06/06	25	<0.00199	<0.00248	<0.00298	<0.00248	<0.00298	<0.00248	<0.00497	<0.00497	<0.0298	<0.00497	<0.00497	<0.00497	<0.00497	<0.00497	<0.00497	<0.0149	
01MW33	01MW33-8.5	SoundEarth	07/07/06	8.5	<0.121	<0.121	<0.121	<0.121	<0.121	<0.121	<0.121	<0.121	<1.21	1.08	1.72	2.83	<0.121	0.830	<0.121	<1.21	
01MW35	01MW35-16	SoundEarth	07/07/06	16	<0.00907	<0.0113	<0.136	<0.0113	<0.136	<0.0113	<0.0227	<0.0227	<0.136	<0.0227	0.131	<0.0227	<0.0227	0.199	<0.0227	<0.00681	
01MW36	01MW36-21	SoundEarth	07/07/06	21	<0.00183	<0.00228	<0.00274	<0.00228	<0.00274	<0.00228	<0.00457	<0.00457	<0.274	<0.00457	<0.00457	<0.00457	<0.00457	<0.00457	<0.00457	<0.0137	
01MW48/B69	B69-28	SoundEarth	11/30/06	28	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.5	
01MW50/B71	B71-18	SoundEarth	12/21/06	18	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.5	
MTCA Cleanup Level for Soil					0.05⁽²⁾	0.03⁽²⁾	160⁽³⁾	1,600⁽³⁾	4,000⁽³⁾	0.67⁽⁴⁾	NE	800⁽³⁾	72,000⁽³⁾	8,000⁽³⁾	NE	NE	NE	NE	NE	48,000⁽³⁾	

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for soil; the detection limit has been raised due to high concentrations of associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Data prior to April 2006 from previous consultants. All other sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington, Libby Environmental Inc., of Olympia, Washington, or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Samples analyzed by EPA Method 8260B.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

⁽⁴⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

bgs = below ground surface

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

NE = not established

SoundEarth = SoundEarth Strategies, Inc.

VOC = volatile organic compound

WAC = Washington Administrative Code



Table 18
Reconnaissance Groundwater Analytical Results for Selected VOCs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Boring ID	Sample ID	Sampled By	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)										
				Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Isopropylbenzene	Naphthalene
Bulk Terminal Property														
GP01	GP01	SoundEarth	08/31/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	<0.500	<0.500	<20.0	<0.500	<5.00
GP03	GP03	SoundEarth	08/31/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	<0.500	<0.500	<20.0	<0.500	<5.00
GP05	GP05	SoundEarth	08/31/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	<0.500	<0.500	<20.0	<0.500	<5.00
GP07	GP07	SoundEarth	08/31/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	<0.500	<0.500	<20.0	<0.500	<5.00
GP09	GP09	SoundEarth	09/01/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	<0.500	<0.500	<20.0	<0.500	<5.00
GP11	GP11	SoundEarth	09/01/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	10.40	1.35	<20.0	1.15	<5.00
GP14	GP14	SoundEarth	09/01/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.200	5.40	4.08	73.8	21.20	6.89
MTCA Cleanup Level for Groundwater				5⁽²⁾	5⁽²⁾	16⁽³⁾	160⁽³⁾	400⁽³⁾	0.2⁽²⁾	NE	80⁽³⁾	7,200⁽³⁾	800⁽³⁾	160⁽²⁾

NOTES:

Sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington, Libby Environmental, Inc., of Olympia, Washington, or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Samples analyzed by EPA Method 8260B.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Groundwater, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

-- = not analyzed/not applicable

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

NE = not established

SoundEarth = SoundEarth Strategies, Inc.

VOC = volatile organic compound

WAC = Washington Administrative Code



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
Bulk Terminal Property																				
Shallow Water-Bearing Zone																				
01MW01	01MW01-20090128	01/28/09	--	0.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW01-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW01-20100126	01/26/10	YSI	1.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW01-20100712	07/12/10	YSI	0.25	--	--	--	0.2	--	--	--	0.0	--	--	--	<50	--	0.017	<0.005	<0.005
	01MW01-20100922	09/22/10	Hach HQ20	0.21	--	--	--	0.2	--	0.6	--	0.0	--	0.6	--	<50	--	--	--	--
	01MW01-20110106	01/06/11	Hach HQ20	0.611	1.38	0.004	--	0.0	0.256	1.0	--	0.0	0.3	1.0	9,130	200	<0.05	<0.005	<0.005	<0.005
	01MW01-20110413	04/13/11	Hach HQ20	0.13	0.410	0.027	--	1.9	<0.020	0.2	--	0.0	<0.020	0.2	11,500	400	<0.05	0.0120	<0.00500	<0.00500
	01MW01-20111212	12/12/11	YSI	0.40	0.099	<0.002	--	0.0	<0.020	0.2	--	0.0	<0.020	0.2	985	1,200	0.14	0.00537	<0.00500	<0.00500
	01MW01-20120409	04/09/12	YSI	0.85	0.097	0.002	--	0.75	0.318	0.5	--	0.6	0	0.0	956	1,200	0.18	0.00380 ⁷	<0.00500	<0.00500
01MW01-20121015	10/15/12	YSI	0.20	0.012	<0.002	3.65	--	0.807	--	0.62	--	0.19	--	919	--	0.30	0.0259	<0.00500	<0.00500	
01MW01-20130131	01/31/13	YSI	0.64	0.093	0.014	--	0.60	0.509	0.9	0.35	0.7	0.16	0.2	717	--	0.08	<0.005	<0.005	<0.005	
01MW04	01MW04-20090129	01/29/09	--	0.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW04-20100125	01/25/10	Horiba	5.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW04-20110111	01/11/11	Hach HQ20	0.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW04-20130130	01/30/13	YSI	8.67	0.320	0.002	--	0.0	0.119	0.0	0.02	0.0	0.10	0.0	8.14	--	<0.05	--	--	--
01MW06	01MW06-20090128	01/28/09	--	0.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW06-20090407	04/07/09	--	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW06-20100125	01/25/10	YSI	5.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW06-20110110	01/10/11	Hach HQ20	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW08	01MW08-20090129	01/29/09	--	8.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW12	01MW12-20090128	01/28/09	--	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW12-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW12-20100714	07/14/10	YSI	0.19	--	--	0.9	--	3.2	--	2.5	--	0.7	--	<50	--	--	--	--	--
	01MW12-20100922	09/22/10	YSI	0.86	--	--	1.2	--	2.2	--	0.1	--	2.1	--	<50	--	--	--	--	--
	01MW12-20110107	01/07/11	YSI	0.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW13	01MW13-20090127	01/27/09	--	4.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW13-20090408	04/08/09	--	0.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW13-20100707	07/07/10	Quanta	0.38	<0.1	<0.1	--	0.6	5.9	4.0	--	0.6	5.3	3.4	2.8	--	<0.5	--	--	--
	01MW13-20100922	09/22/10	Quanta	0.23	<0.010	<0.002	--	0.7	--	2.4	--	0.0	--	2.4	11.10	<50	--	0.173	--	--
	01MW13-20110107	01/07/11	YSI	0.59	<0.010	0.006	--	0.0	3.91	4.2	--	2.5	1.4	1.7	29.50	125	<0.05	0.151	<0.005	<0.005
	01MW13-20110411	04/11/11	Hach HQ20	0.24	<0.010	0.007	--	0.05	3.98	4.2	--	4.2	0	0.0	28.1	27	<0.05	0.157	0.00575	<0.00500
	01MW13-20111209	12/09/11	YSI	0.70	--	--	0.0	4.91	0.4	--	0.4	4.5	0.0	19.9	3.0	0.16	3.15	<0.00500	<0.00500	
	01MW13-20111212	12/12/11	YSI	0.43	0.025	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW13-20120411	04/11/12	Quanta	0.56	<0.010	0.010	--	0.0	5.23	7.0	--	1.6	3.6	5.4	24.5	27	0.32	0.571	0.000475 ⁷	<0.00500
01MW13-20121015	10/15/12	YSI	0.46	<0.010	0.006	0.499	--	4.42	--	5.51	--	0	--	14.4	--	0.20	0.817	<0.00500	<0.00500	
01MW17	01MW17-20090127	01/27/09	--	4.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW17-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW17-20100125	01/25/10	YSI	0.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW17-20100707	07/07/10	YSI	--	--	--	0.0	--	--	0.2	--	0.2	--	0.0	--	<50	--	--	--	--
	01MW17-20110106	01/06/11	YSI	0.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
Bulk Terminal Property																				
Shallow Water-Bearing Zone																				
01MW18	01MW18-20090129	01/29/09	--	0.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW18-20090408	04/08/09	--	2.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW19	01MW19-20090129	01/29/09	--	0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW19-20090408	04/08/09	--	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW19-20100128	01/28/10	YSI	2.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW19-20110111	01/11/11	HQ20	3.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW20	01MW20-20090129	01/29/09	--	0.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW20-20090408	04/08/09	--	0.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW20-20100128	01/28/10	YSI	0.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW21	01MW21-20090128	01/28/09	--	0.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW21-20090408	04/08/09	--	0.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW21-20100126	01/26/10	YSI	0.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW21-20100707	07/07/10	YSI	0.49	<0.1	<0.1	--	0.6	26	3.4	--	2.2	24	1.2	1.4	<50	<0.5	--	--	--
	01MW21-20100922	09/22/10	YSI	1.19	<0.010	0.003	--	1.6	--	>10	--	3.6	--	>7	4.22	<50	--	0.123	--	--
	01MW21-20110107	01/07/11	--	--	2.05	0.018	--	0.0	55.3	1.4	--	0.6	54.7	0.8	19,600	800	<0.05	0.00974	<0.005	<0.005
01MW21-20110412	04/12/11	Hach HQ20	0.44	<0.010	0.005	--	0.6	60.6	18	--	3.2	57.4	14.8	448	300	<0.05	0.371	0.0128	0.0150	
01MW22	01MW22-20110107	01/07/11	Quanta	0.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW24	01MW24-20100922	09/22/10	Hach HQ20	--	--	--	--	0.3	--	5.0	--	0.0	--	5.0	--	<50	--	--	--	--
01MW26	01MW26-20090127	01/27/09	--	0.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW26-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW26-20100712	07/12/10	YSI	0.47	--	--	--	0.2	4.28	--	--	1.8	2.5	--	<50	--	--	--	--	--
	01MW26-20100922	09/22/10	Hach HQ20	0.1	--	--	--	0.4	--	2.8	--	0.1	--	2.7	--	<50	--	--	--	--
	01MW26-20110107	01/07/11	Hach HQ20	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW27	01MW27-20090127	01/27/09	--	1.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW27-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW27-20100127	01/27/10	YSI	0.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW27-20100712	07/12/10	YSI	0.36	--	--	--	0.8	8.41	--	--	2.8	5.6	--	<50	--	--	--	--	--
	01MW27-20100922	09/22/10	Hach HQ20	0.35	--	--	--	1.1	--	3.0	--	0.0	--	3.0	--	<50	--	--	--	--
	01MW27-20110611	01/06/11	--	--	--	--	--	--	--	--	--	--	--	--	10,870	--	--	--	--	--
	01MW27-20110414	04/14/11	--	--	--	--	--	--	--	--	--	--	--	--	37,500	--	--	--	--	--
	01MW27-20111220	12/20/11	--	--	--	--	--	--	--	--	--	--	--	--	12,010	--	--	--	--	--
	01MW27-20120410	04/10/12	--	--	--	--	--	--	--	--	--	--	--	--	4,540	--	--	--	--	--
	01MW27-20121016	10/16/12	Quanta	0.29	--	--	--	--	--	--	--	--	--	--	7,450	--	--	--	--	--
01MW27-20130131	01/31/13	YSI	8.53	--	--	--	--	--	--	--	--	--	--	14.2	--	--	--	--	--	
01MW28	01MW28-20100922	09/22/10	Quanta	0.54	--	--	--	1.7	--	5.6	--	0.8	--	4.8	--	<50	--	--	--	--
01MW37	01MW37-20090127	01/27/09	--	4.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW37-20090408	04/08/09	--	1.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW37-20100125	01/25/10	YSI	0.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW37-20100707	07/07/10	Quanta	0.30	--	--	--	0.0	--	1.0	--	0.0	--	1.0	--	125	--	--	--	--
	01MW37-20100922	09/22/10	YSI	0.70	--	--	--	0.0	--	0.2	--	0.1	--	0.1	--	75	--	--	--	--
	01MW37-20110106	01/06/11	YSI	0.63	--	--	--	--	--	--	--	--	--	--	58	--	--	--	--	--
	01MW37-20110411	04/11/11	Hach HQ20	0.21	--	--	--	--	--	--	--	--	--	--	79.8	--	--	--	--	--
	01MW37-20111209	12/09/11	YSI	0.34	--	--	--	--	--	--	--	--	--	--	64.9	--	--	--	--	--
	01MW37-20120409	04/09/12	YSI	0.29	--	--	--	--	--	--	--	--	--	--	60.1	--	--	--	--	--
	01MW37-20121012	10/12/12	YSI	0.30	--	--	--	--	--	--	--	--	--	--	66.1	--	--	--	--	--



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
Bulk Terminal Property																				
Shallow Water-Bearing Zone																				
01MW38	01MW38-20090127	01/27/09	--	4.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW38-20090408	04/08/09	--	1.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW38-20100707	07/07/10	Quanta	0.46	--	--	0.2	--	3.0	--	1.7	--	1.3	--	100	--	--	--	--	
	01MW38-20100922	09/22/10	YSI	0.59	--	--	0.2	--	1.8	--	0.0	--	1.8	--	80	--	--	--	--	
01MW39	01MW38-20110107	01/07/11	YSI	0.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW39-20090127	01/27/09	--	4.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW39-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW40	01MW40-20090128	01/28/09	--	0.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW40-20090408	04/08/09	--	0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW40-20100126	01/26/10	YSI	0.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW40-20100707	07/07/10	YSI	0.24	<0.1	<0.1	0.0	5.1	2.6	--	2.4	2.7	0.2	110	150	<0.5	--	--	--	
	01MW40-20100922	09/22/10	YSI	0.89	--	--	0.5	--	2.9	--	0.0	--	2.9	--	200	--	--	--	--	
	01MW40-20110107	01/07/11	Quanta	1.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW41	01MW41-20100922	09/22/10	Hach HQ20	0.3	--	--	0.0	--	3.4	--	0.0	--	3.4	--	<50	--	--	--	--	
01MW42	01MW42-20090128	01/28/09	--	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW42-20090408	04/08/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW42-20100126	01/26/10	YSI	2.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW42-20100922	09/22/10	YSI	0.48	--	--	1.4	--	0.2	--	0.2	--	0.0	--	<50	--	--	--	--	
	01MW42-20110107	01/07/11	YSI	0.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW42-20110412	04/12/11	Hach HQ20	0.19	--	--	--	--	--	--	--	--	--	20.2	--	--	--	--	--	
	01MW42-20111209	12/09/11	YSI	0.50	--	--	--	--	--	--	--	--	--	22.0	--	--	--	--	--	
	01MW42-20120410	04/10/12	YSI	0.26	--	--	--	--	--	--	--	--	--	32.6	--	--	--	--	--	
01MW43	01MW42-20121015	10/15/12	Quanta	0.75	--	--	--	--	--	--	--	--	--	31.1	--	--	--	--	--	
	01MW43-20100715	07/15/10	--	--	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW43-20100922	09/22/10	Quanta	0.60	--	--	1.3	--	>10	--	0.1	--	>10	--	<50	--	--	--	--	
	01MW43-20110106	01/06/11	--	--	--	--	--	--	--	--	--	--	--	23.1	--	--	--	--	--	
	01MW43-20110303	03/03/11	--	--	--	--	--	--	--	--	--	--	--	74.0	--	--	--	--	--	
	01MW43-20110414	04/14/11	--	--	--	--	--	--	--	--	--	--	--	23.4	--	--	--	--	--	
01MW59	01MW43-20111220	12/20/11	--	--	--	--	--	--	--	--	--	--	--	537	--	--	--	--	--	
	01MW43-20120412	04/12/12	--	--	--	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--	
	01MW59-20090129	01/29/09	--	0.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW59-20090408	04/08/09	--	0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW59-20100125	01/25/10	YSI	8.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW59-20110111	01/11/11	Hach HQ20	0.3	--	--	--	--	--	--	--	--	--	2.78	--	--	--	--	--	
	01MW59-20110415	04/14/11	Quanta	2.22	--	--	--	--	--	--	--	--	--	3.10	--	--	--	--	--	
01MW59-20111207	12/07/11	YSI	0.43	--	--	--	--	--	--	--	--	--	11.3	--	--	--	--	--		
01MW59-20120409	04/09/12	YSI	0.2	--	--	--	--	--	--	--	--	--	4.72	--	--	--	--	--		
01MW59-20121012	10/12/12	Hach HQ20	0.28	--	--	--	--	--	--	--	--	--	1.04	--	--	--	--	--		



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
Bulk Terminal Property																				
Shallow Water-Bearing Zone																				
01MW66	01MW66-20100126	01/26/10	YSI	0.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW66-20100712	07/12/10	YSI	0.36	--	--	--	0.2	0.942	--	--	1.0	--	--	--	90	--	--	--	--
	01MW66-20100922	09/22/10	Hach HQ20	--	<0.010	0.002	--	0.4	--	0.6	--	0.0	--	0.6	39.4	50	--	0.018	--	--
	01MW66-20110106	01/06/11	Hach HQ20	0.366	4.02	0.006	--	0.0	0.863	1.3	--	0.0	0.9	1.3	14,200	>200	<0.05	0.00828	<0.005	<0.005
	01MW66-20110413	04/13/11	Hach HQ20	4.83	1.34	<0.002	--	2.4	0.076	0.0	--	0.0	0.1	0.0	14,900	400	<0.05	0.00542	<0.00500	<0.00500
	01MW66-20111212	12/12/11	YSI	0.36	0.866	0.013	--	0.0	0.395	7.6	--	0.0	0.4	7.6	11,960	800	0.10	0.0151	<0.00500	<0.00500
	01MW66-20120405	04/05/12	Quanta	0.36	0.192	0.008	--	3.0	1.21	0.8	--	0.0	1.2	0.8	3,180	77	0.18	0.00416 ^f	0.000148 ^f	<0.00500
01MW66-20121016	10/16/12	Quanta	0.34	<0.010	0.008	15.7	--	2.51	--	0.45	--	2.06	--	6,610	--	0.16	<0.00500	<0.00500	<0.00500	
01MW66-20130128	01/28/13	YSI	1.74	0.036	0.008	--	0.7	0.637	0.3	0.02	0.0	0.62	0.3	163	--	0.12	<0.005	<0.005	<0.005	
01MW67	01MW67-20100126	01/26/10	YSI	0.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW67-20100712	07/12/10	Quanta	0.22	--	--	--	0.4	--	--	--	1.0	--	--	<50	--	--	--	--	--
	01MW67-20100922	09/22/10	Quanta	0.26	--	--	--	1.1	--	1.0	--	0.0	--	1.0	--	<50	--	--	--	--
	01MW67-20110106	01/06/11	Hach HQ20	3.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01MW68	01MW68-20110107	01/07/11	--	--	--	--	--	--	--	--	--	--	--	49,300	--	--	--	--	--	--
	01MW68-20110303	03/03/11	--	--	--	--	--	--	--	--	--	--	--	43,100	--	--	--	--	--	--
	01MW68-20110413	04/13/11	--	--	--	--	--	--	--	--	--	--	--	53,100	--	--	--	--	--	--
	01MW68-20111220	12/20/11	--	--	--	--	--	--	--	--	--	--	--	60,200	--	--	--	--	--	--
	01MW68-20120412	04/12/12	--	--	--	--	--	--	--	--	--	--	--	9,830	--	--	--	--	--	--
01MW68-20120711	07/11/12	--	--	--	--	--	--	--	--	--	--	--	21,400	--	--	--	--	--	--	
01MW69	01MW69-20100127	01/27/10	YSI	0.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW69-20100713	07/13/10	YSI	0.32	--	--	--	0.5	0.39	--	--	0.8	--	--	<50	--	--	--	--	--
	01MW69-20100922	09/22/10	Quanta	0.24	--	--	--	1.5	--	0.8	--	0.8	--	0.0	--	<50	--	--	--	--
	01MW69-20110107	01/07/11	YSI	1.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW69-20130129	01/29/13	YSI	1.14	<0.010	0.005	--	0.3	8.17	5.0	2.73	3.6	5.44	1.4	192	--	0.22	--	--	--
01MW72	01MW72-20100922	09/22/10	Quanta	0.84	--	--	--	0.0	--	1.0	--	0.0	--	1.0	--	200	--	--	--	--
01MW74	01MW74-20100707	07/07/10	YSI	0.61	<0.1	<0.1	--	0.5	6.3	4.2	--	2.4	3.9	1.8	1.1	--	<0.5	--	--	--
	01MW74-20100922	09/22/10	YSI	0.70	--	--	--	1.5	--	2.5	--	0.0	--	2.5	--	<50	--	--	--	--
	01MW74-20110107	01/07/11	YSI	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	01MW74-20130131	01/31/13	YSI	4.41	0.011	0.005	--	0.0	1.23	1.6	0.15	1.2	1.08	0.4	12.2	--	0.20	<0.005	<0.005	<0.005
01MW75	01MW75-20100707	07/07/10	YSI	0.27	--	--	--	0.2	0.63	1.2	--	0.5	0.1	0.7	39	65	<0.5	0.185	<0.005	<0.005
	01MW75-20100922	09/22/10	YSI	0.55	0.036	0.004	--	1.3	--	2.0	--	0.2	--	1.8	37.2	50	--	0.066	--	--
	01MW75-20110107	01/07/11	YSI	0.49	<0.010	0.002	--	0.5	1.25	1.0	--	0.8	0.5	0.2	46.6	70	<0.05	0.13	<0.005	<0.005
	01MW75-20110411	04/11/11	Hach HQ20	0.06	<0.010	<0.002	--	0.7	0.915	1.2	--	1.1	0	0.1	27.9	<25	<0.05	0.0731	<0.00500	<0.00500
	01MW75-20111208	12/08/11	Quanta	0.38	<0.010	0.002	--	0.8	2.72	0.8	--	0.2	2.5	0.6	28.7	35	0.34	1.51	0.00546	<0.00500
	01MW75-20120410	04/10/12	Quanta	0.24	<0.010	0.004	--	0.6	2.24	2.2	--	2.0	0.2	0.2	67.1	76	0.22	0.18	0.000299 ^f	<0.00500
01MW75-20121015	10/15/12	YSI	0.27	<0.010	0.004	1.08	--	2.66	--	--	3.26	--	0	53.5	--	0.40	0.0273	<0.00500	<0.00500	
C3IW01	C3-20100714	07/14/10	YSI	1.50	0.11	<0.1	--	0.0	--	1.4	--	1.0	--	0.4	--	<50	--	--	--	--



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
Bulk Terminal Property																				
Shallow Water-Bearing Zone																				
E9IW01	E9-20100714	07/14/10	Quanta	4.55	0.13	<0.1	--	0.0	--	0.8	--	0.4	--	0.4	--	<50	--	--	--	
	E9IW01-20100922	09/22/10	YSI	2.6	--	--	--	2.5	--	2.6	--	0.0	--	2.6	--	<50	--	--	--	
	E9-20110411	01/11/11	HQ2O	0.54	--	--	--	--	--	--	--	--	--	300	--	--	--	--	--	
	E9-20110412	04/12/11	HQ2O	0.13	--	--	--	--	--	--	--	--	--	25.2	--	--	--	--	--	
	E9-20111209	12/09/11	Quanta	0.28	--	--	--	--	--	--	--	--	--	48.7	--	--	--	--	--	
	E9-20120410	04/10/12	YSI	0.43	--	--	--	--	--	--	--	--	--	33.5	--	--	--	--	--	
F4IW01	F4-20100715	07/15/10	Quanta	1.37	<0.1	<0.1	--	0.2	--	1.0	--	0.6	--	0.4	--	<50	--	--	--	
G10IW01	G10-20130130	01/30/13	YSI	1.24	--	--	--	--	--	--	--	--	--	41.5	--	--	--	--	--	
J10IW01	J10-20100714	07/14/10	YSI	2.93	--	--	--	0.2	--	0.4	--	0.0	--	0.4	--	55	--	--	--	
	J10IW01-20100922	09/22/10	Hach HQ2O	-1.0	0.037	0.002	--	0.6	--	6.0	--	0.0	--	6.0	--	<50	--	0.432	--	
	J10-20110110	01/10/11	Hach HQ2O	1.95	4.38	0.004	--	0.0	55.8	4.5	--	0.0	55.8	4.5	17,930	800	<0.05	<0.005	<0.005	<0.005
	J10-20110412	04/12/11	Hach HQ2O	0.21	0.460	0.015	--	0.0	0.801	1.0	--	0.0	0.8	1.0	5,300	600	<0.05	0.0131	<0.00500	<0.00500
	J10-20120412	04/12/12	Quanta	0.31	<0.010	0.002	--	1.5	3.59	4.0	--	3.0	0.6	1.0	2,280	800	0.14	0.153	<0.00500	<0.00500
K3IW01	J10-20120710	07/10/12	YSI	4.84	0.057	0.003	--	2.0	0.544	0.8	--	0.0	0.5	0.8	2,640	750	0.24	<0.00500	<0.00500	<0.00500
	K3-20100715	07/15/10	YSI	6.80	--	--	--	0.1	--	0.0	--	0.0	--	0.0	--	<50	--	--	--	
	K3IW01-20100922	09/22/10	Hach HQ2O	--	<0.010	0.004	--	0.9	--	1.2	--	0.1	--	1.1	77.9	125	--	0.018	--	--
	K3-20110110	01/10/11	Hach HQ2O	14	4.45	0.005	--	0.0	20.2	1.4	--	0.0	20.2	1.4	10,610	800	<0.05	0.00376 ¹	<0.005	<0.005
	K3-20110412	04/12/11	Hach HQ2O	16.1	2.89	0.017	--	0.0	4.61	4.4	--	0.0	4.6	4.4	19,000	350	<0.05	<0.00500	<0.00500	<0.00500
	K3-20111206	12/06/11	Quanta	1.74	1.03	0.003	--	0.0	0.645	0.8	--	0.0	0.6	0.8	222	>200	<0.05	0.0559	<0.00500	<0.00500
	K3-20120409	04/09/12	YSI	1.43	0.264	0.005	--	0.0	0.304	0.0	--	0.0	0.3	0.0	38.7	55	0.20	<0.00500	<0.00500	<0.00500
	K3-20120710	07/10/12	YSI	0.51	0.115	0.003	--	0.0	0.412	0.6	--	0.0	0.4	0.6	50.3	80	0.20	0.0134	<0.00500	<0.00500
L2IW01	L2-20120727	07/27/12	YSI	0.66	--	0.003	--	--	0.485	--	--	--	--	--	30.5	--	0.30	0.0126	<0.00500	<0.00500
M5IW01	L2-20110110	01/10/11	Hach HQ2O	10.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	M5-20100714	07/14/10	Quanta	4.41	--	--	--	0.2	--	0.0	--	0.0	--	0.0	--	<50	--	--	--	
	M5IW01-20100922	09/22/10	Quanta	0.29	<0.010	0.004	--	0.7	--	0.1	--	0.0	--	0.1	62.4	<50	--	0.046	--	--
	M5IW01-20110107	01/07/11	YSI	9.5	23.2	0.025	--	0.0	64.5	2.3	--	0.0	64.5	2.3	71,500	205	<0.05	<0.005	<0.005	<0.005
	M5-20110412	04/12/11	Hach HQ2O	14.1	2.53	0.003	--	0.0	0.209	20	--	0.0	0.2	20	25,900	300	<0.05	0.00549	<0.00500	<0.00500
	M5-20111220	12/20/11	--	--	--	--	--	--	--	--	--	--	--	--	22,100	--	--	--	--	
	M5-20120409	04/09/12	Quanta	0.55	<0.010	0.003	--	1.2	0.433	0.4	--	0.0	0.4	0.4	1,880	1,400	0.18	0.00805	0.000233 ¹	<0.00500
M5-20120711	07/11/12	--	--	0.053	0.002	--	1.3	5.38	7.0	--	4.8	0.6	2.2	2,510	750	0.24	0.0682	<0.00500	<0.00500	
N7IW01	M5-20121015	10/15/12	Quanta	0.52	<0.010	0.003	12.7	--	25.5	--	34.0	--	0	--	3,023	--	0.34	0.0466	<0.00500	<0.00500
	N7-20120410	04/10/12	Quanta	0.32	<0.010	0.004	--	0.6	0.985	0.6	--	0.0	1.0	0.6	623	360	0.18	0.00152 ¹	<0.00500	<0.00500
	N7-20120710	07/10/12	YSI	1.42	<0.010	<0.002	--	0.3	0.131	0.1	--	0.0	0.1	0.1	243	375	0.24	<0.00500	<0.00500	<0.00500
N10IW01	N7-20130129	01/29/13	YSI	1.10	<0.010	0.002	--	0.1	0.278	0.3	0.01	0.2	0.27	0.1	107	--	0.12	<0.005	<0.005	<0.005
	N10-20100714	07/14/10	YSI	0.31	--	--	--	0.1	--	--	--	2.6	--	--	--	125	--	--	--	
	N10IW01-20100922	09/22/10	Hach HQ2O	0.5	--	--	--	0.2	--	2.4	--	0.1	--	2.3	--	125	--	--	--	
	N10-20110110	01/10/11	YSI	0.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
Bulk Terminal Property																				
Shallow Water-Bearing Zone																				
O5IW01	O5-20110110	01/10/11	YSI	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Q9IW01	Q9-20100714	07/14/10	Quanta	0.25	--	--	--	0.0	--	2.2	--	2.4	--	0.0	--	55	--	--	--	
	Q9IW01-20100922	09/22/10	Quanta	0.23	--	--	--	0.0	--	2.0	--	0.0	--	2.0	--	175	--	--	--	
	Q9-20110110	01/10/11	YSI	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
IW03	Q9-20130128	01/28/13	YSI	1.55	0.950	0.002	--	0.0	3.79	3.0	0.10	2.7	3.69	0.3	20.0	--	0.78	--	--	
	IW03-20111213	12/13/11	YSI	1.70	2.28	0.014	--	0.8	2.58	2.0	--	1.6	1.0	0.4	2,253	2,000	0.08	0.128	<0.00500	
	IW03-20120409	04/09/12	Quanta	0.34	<0.010	0.004	--	0.45	4.16	3.6	--	3.0	1.2	0.6	305	77	0.22	0.388	0.000596	
	IW03-20121016	10/16/12	YSI	0.49	<0.010	0.005	0.418	--	2.35	--	2.80	--	0	--	161	--	0.16	0.0410	<0.00500	
West Commodore Way																				
Shallow Water-Bearing Zone																				
01MW02	01MW02-20090129	01/29/09	--	0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW02-20090407	04/07/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW02-20100128	01/28/10	YSI	0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW02-20110112	01/12/11	HQ20	0.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW03	01MW03-20090128	01/28/09	--	0.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW03-20090407	04/07/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW03-20110113	01/13/11	YSI	0.18	--	--	--	--	--	--	--	--	--	--	6.84	--	--	--	--	
	01MW03-20110414	04/14/11	HQ20	0.15	--	--	--	--	--	--	--	--	--	--	5.14	--	--	--	--	
	01MW03-20111206	12/06/11	YSI	0.43	--	--	--	--	--	--	--	--	--	--	137	--	--	--	--	
	01MW03-20120405	04/05/12	YSI	0.45	--	--	--	--	--	--	--	--	--	--	22.8	--	--	--	--	
	01MW03-20121012	10/12/12	YSI	0.50	--	--	--	--	--	--	--	--	--	--	2,320	--	--	--	--	
01MW09	01MW09-20090408	04/08/09	--	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW10	01MW10-20110414	04/14/11	--	--	--	--	--	--	--	--	--	--	--	--	2,140	--	--	--	--	
	01MW10-20120412	04/12/12	--	--	--	--	--	--	--	--	--	--	--	--	1,090	--	--	--	--	
	01MW10-20120710	07/10/12	--	--	--	--	--	--	--	--	--	--	--	--	121	--	--	--	--	
01MW11	01MW11-20090129	01/29/09	--	0.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW11-20090407	04/07/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW11-20100128	01/28/10	YSI	0.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW11-20110112	01/12/11	Horiba	0.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW30	01MW30-20090128	01/28/09	--	0.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW30-20090408	04/08/09	--	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW30-20100126	01/26/10	YSI	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW30-20110111	01/11/11	HQ20	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW32	01MW32-20090126	01/26/09	--	5.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW32-20090408	04/08/09	--	2.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW32-20100204	02/04/10	YSI	2.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW32-20110111	01/11/11	HQ20	1.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW33	01MW33-20110414	04/14/11	--	--	--	--	--	--	--	--	--	--	--	--	4.59	--	--	--	--	
	01MW33-20120412	04/12/12	--	--	--	--	--	--	--	--	--	--	--	--	3.61	--	--	--	--	



Table 19
Natural Attenuation Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	Water Quality Meter	Analytical Results (milligrams per liter)																
				Dissolved Oxygen ⁽¹⁾	Nitrate ⁽²⁾	Nitrite ⁽²⁾	Total Manganese		Total Iron		Ferrous Iron		Ferric Iron ⁽⁸⁾		Sulfate		Sulfide ⁽¹⁰⁾	Methane ⁽¹¹⁾	Ethane ⁽¹¹⁾	Ethene ⁽¹¹⁾
							Lab ⁽³⁾	Field ⁽⁴⁾	Lab ⁽³⁾	Field ⁽⁵⁾	Lab ⁽⁶⁾	Field ⁽⁷⁾	Lab	Field	Lab ⁽²⁾	Field ⁽⁹⁾				
West Commodore Way																				
Shallow Water-Bearing Zone																				
01MW34	01MW34-20090126	01/26/09	--	5.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW34-20090406	04/06/09	--	5.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW34-20100125	01/25/10	YSI	8.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW34-20110113	01/13/11	YSI	--	--	--	--	--	--	--	--	--	--	18.4	--	--	--	--	--	
	01MW34-20110413	04/13/11	HQ20	3.94	--	--	--	--	--	--	--	--	--	15.0	--	--	--	--	--	
	01MW34-20111207	12/07/11	YSI	3.67	--	--	--	--	--	--	--	--	--	13.5	--	--	--	--	--	
01MW36	01MW34-20120410	04/10/12	YSI	3.94	--	--	--	--	--	--	--	--	--	12.5	--	--	--	--	--	
	01MW36-20090128	01/28/09	YSI	1.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW36-20090408	04/08/09	--	1.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW36-20100128	01/28/10	YSI	2.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW47	01MW36-20110112	01/12/11	YSI	1.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW47-20090126	01/26/09	--	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW49	01MW47-20090406	04/06/09	Horiba	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW49-20090126	01/26/09	--	0.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW50	01MW50-20090126	01/26/09	--	4.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW50-20100405	04/05/10	YSI	1.92	--	--	--	0.6	--	5.0	--	3.5	--	1.5	--	--	--	--	--	
	01MW50-20100125	01/25/10	YSI	7.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW50-20110113	01/13/11	YSI	0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW87	01MW87-20111207	12/07/11	YSI	1.24	--	--	--	--	--	--	--	--	--	14.3	--	--	--	--	--	
	01MW87-20120410	04/10/12	YSI	0.83	--	--	--	--	--	--	--	--	--	9.88	--	--	--	--	--	
	01MW87-20121016	10/16/12	YSI	1.06	--	--	--	--	--	--	--	--	--	8.15	--	--	--	--	--	
West Commodore Way																				
Intermediate Water-Bearing Zone																				
01MW48	01MW48-20090126	01/26/09	--	5.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW48-20090406	04/06/09	--	0.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
01MW51	01MW51-20090126	01/26/09	--	4.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	01MW51-20090406	04/06/09	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

NOTES:

Analyses performed by Friedman and Bruya, Inc., Fremont Analytical Inc., or Aquatic Research Inc., of Seattle, Washington; or Amtest Inc. of Kirkland, Washington.

⁽¹⁾Parameter is measured in the field using water quality meter with flow-through cell. The reported value is the last reading prior to sampling groundwater.

⁽²⁾Analyzed by EPA Methods 300.0, 353.2, 375.4, or Standard Method 1845.

⁽³⁾Analyzed by EPA Method 200.7 or 200.8.

⁽⁴⁾Analyzed in the field by SoundEarth personnel using a Hach® Manganese kit, EPA Periodate Oxidation Method 8034.

⁽⁵⁾Analyzed in the field by SoundEarth personnel using Hach® Total Iron Kit, FerroVer Method 8008.

⁽⁶⁾Analyzed by Standard Method 3500FeD.

⁽⁷⁾Analyzed in the field by SoundEarth personnel using Hach® Ferrous Iron Kit, 1-10 Phenanthroline Method 8146.

⁽⁸⁾Ferric iron concentration = total iron concentration - ferrous iron concentration

⁽⁹⁾Analyzed in the field by SoundEarth personnel using Hach® Sulfate Kit, Extinction Method.

⁽¹⁰⁾Analyzed by Standard Method 4500-S² F.

⁽¹¹⁾Analyzed by method RSK-175.

Laboratory Note:

¹Analyte detected below quantitation limits. Value is estimated.

-- not measured/ not applicable

< not detected at a concentration exceeding the laboratory reporting limit

EPA = U. S. Environmental Protection Agency

SoundEarth = SoundEarth Strategies, Inc.



Table 20
Geochemical and Water Quality Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	pH ⁽¹⁾	Specific Conductivity ⁽¹⁾ (mS/cm)	Turbidity ⁽¹⁾ (NTU)	Temperature ⁽¹⁾ (°C)	ORP ⁽¹⁾ (mV)	TKN ⁽²⁾ (mg/L)	Total Phosphorous ⁽³⁾ (mg/L)	Alkalinity ⁽⁴⁾ (mg/L CaCO ₃)	Hardness ⁽⁵⁾ (mg equivalent CaCO ₃ /L)
Bulk Terminal Property											
Shallow Water-Bearing Zone											
01MW01	01MW01-20090128	01/28/09	7.25	0.388	0.0	12.20	31	--	--	--	--
	01MW01-20090408	04/08/09	7.10	0.478	11.4	12.71	-65.0	--	--	--	--
	01MW01-20100126	01/26/10	7.74	0.332	0.40	12.36	-2.2	--	--	--	--
	01MW01-20100712	07/12/10	4.46	0.343	--	14.70	-17.5	--	--	--	--
	01MW01-20100922	09/22/10	6.34	0.0741	0.92	34.8	-35.9	--	--	--	--
	01MW01-20110106	01/06/11	3.77	11.25	10.2	29	438	1.47	0.015	<1.00	5,910
	01MW01-20110413	04/13/11	4.54	13.18	1.2	25.10	441	0.615	0.027	78.8	1,954
	01MW01-20111212	12/12/11	5.66	1.873	0.9	21.3	180	2.41	0.006	207	588
	01MW01-20120409	04/09/12	5.61	1.059	0.4	23.04	166.8	0.477	0.012	191	528
01MW01-20121015	10/15/12	4.72	1.152	8.40	18.79	21.3	0.403	0.010	88.9	352	
01MW01-20130131	01/31/13	6.26	1.047	0.5	14.07	68.7	0.276	0.017	50.0	315	
01MW04	01MW04-20090129	1/29/2009	6.63	0.179	2	10	-11	--	--	--	--
	01MW04-20100125	01/25/10	6.29	0.160	1.90	10.88	180	--	--	--	--
	01MW04-20130130	01/30/13	7.59	0.132	6.9	8.56	38.0	0.354	0.072	70.0	66.4
01MW06	01MW06-20090128	01/28/09	7.15	0.788	5.8	13.01	-177	--	--	--	--
	01MW06-20090407	04/07/09	7.51	0.936	8.8	14.66	-169	--	--	--	--
	01MW06-20100125	01/25/10	7.39	1.000	1.61	14.48	121.7	--	--	--	--
01MW08	01MW08-20090129	01/29/09	7.21	0.818	44.3	14.20	-108	--	--	--	--
01MW12	01MW12-20090128	01/28/09	6.72	0.833	18.7	11.07	-140	--	--	--	--
	01MW12-20090408	04/08/09	6.96	0.679	0.06	11.70	-101	--	--	--	--
	01MW12-20100714	07/14/10	6.45	0.951	0.84	18.55	-89.4	--	--	--	--
	01MW12-20100922	09/22/10	7.06	0.808	4.5	15.65	-135.9	--	--	--	--
01MW13	01MW13-20090127	01/27/09	6.24	0.904	20.2	7.32	-7	--	--	--	--
	01MW13-20090408	04/08/09	6.44	0.797	10.4	11.70	-27	--	--	--	--
	01MW13-20100707	07/07/10	6.33	0.905	36.4	14.94	-82	--	0.38	444	400
	01MW13-20100922	09/22/10	6.72	0.853	2.3	15.55	-123	0.278	0.244	529	456
	01MW13-20110107	01/07/11	6.78	0.854	0.30	11.50	-68	0.307	0.126	476	450
	01MW13-20110411	04/11/11	--	0.86	4.20	12.50	-59.50	0.279	0.100	498	408
	01MW13-20111209	12/09/11	5.01	0.956	3.45	9.71	-61.5	0.791	0.155	550	434
	01MW13-20111212	12/12/11	7.00	0.98	0.50	10.5	-68.7	--	--	--	--
01MW13-20120411	04/11/12	6.99	0.780	1.6	11.16	-90	0.470	0.095	505	469	
01MW13-20121015	10/15/12	6.78	0.87	0.8	14.7	-83.4	0.311	0.170	514	469	
01MW17	01MW17-20090127	01/27/09	6.07	0.113	6.7	9.66	15	--	--	--	--
	01MW17-20090408	04/08/09	6.87	0.103	0.0	12.90	-30	--	--	--	--
	01MW17-20100125	01/25/10	8.24	0.771	--	12.06	-44	--	--	--	--
	01MW17-20100707	07/07/10	6.48	1.934	7.22	14.89	-46.0	--	--	--	--
01MW18	01MW18-20090129	01/29/09	6.68	0.550	0.5	14.40	-99	--	--	--	--
	01MW18-20090408	04/08/09	6.61	0.584	1.9	15.30	-101	--	--	--	--
01MW19	01MW19-20090129	01/29/09	6.73	0.696	14.2	13.50	-111	--	--	--	--
	01MW19-20090408	04/08/09	6.83	0.721	3.8	13.33	-152	--	--	--	--
	01MW19-20100128	01/28/10	8.10	0.625	7.06	12.46	26.3	--	--	--	--
01MW20	01MW20-20090129	01/29/09	6.63	0.320	0.7	15.00	-74	--	--	--	--
	01MW20-20090408	04/08/09	6.68	0.344	0.34	14.89	-125	--	--	--	--
	01MW20-20100128	01/28/10	7.69	0.329	1.69	15.26	-82.5	--	--	--	--



Table 20
Geochemical and Water Quality Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	pH ⁽¹⁾	Specific Conductivity ⁽¹⁾ (mS/cm)	Turbidity ⁽¹⁾ (NTU)	Temperature ⁽¹⁾ (°C)	ORP ⁽¹⁾ (mV)	TKN ⁽²⁾ (mg/L)	Total Phosphorous ⁽³⁾ (mg/L)	Alkalinity ⁽⁴⁾ (mg/L CaCO ₃)	Hardness ⁽⁵⁾ (mg equivalent CaCO ₃ /L)
Bulk Terminal Property											
Shallow Water-Bearing Zone											
01MW21	01MW21-20090128	01/28/09	6.51	0.575	29.7	10.58	-131	--	--	--	--
	01MW21-20090408	04/08/09	6.81	0.647	7.0	11.46	-125	--	--	--	--
	01MW21-20100126	01/26/10	6.44	0.425	2.87	10.12	-63.3	--	--	--	--
	01MW21-20100707	07/07/10	7.29	0.537	3.96	16.35	-40.9	--	0.58	244	190
	01MW21-20100922	09/22/10	6.33	0.548	2.03	23.56	-182.6	0.902	1.05	294	142
	01MW21-20110107	01/07/11	--	--	--	--	--	8.66	0.061	<1.00	7,430
01MW21-20110412	04/12/11	5.98	1.596	0.8	22.3	-64.5	0.922	0.993	502	542	
01MW24	01MW24-20100922	09/22/10	6.27	0.625	1.9	41.6	-171.3	--	--	--	--
01MW26	01MW26-20090127	01/27/09	7.06	0.578	3.1	10.40	-94	--	--	--	--
	01MW26-20090408	04/08/09	6.99	0.617	1.2	13.19	-190.6	--	--	--	--
	01MW26-20100712	07/12/10	7.76	1.569	1.52	15.31	-3.3	--	--	--	--
	01MW26-20100922	09/22/10	6.01	0.526	30.1	55.30	-129.2	--	--	--	--
01MW27	01MW27-20090127	01/27/09	7.06	0.830	0.7	11.10	-90	--	--	--	--
	01MW27-20090408	04/08/09	6.94	0.795	0.0	13.44	-134.8	--	--	--	--
	01MW27-20100127	01/27/10	7.96	0.682	1.01	13.30	-82.7	--	--	--	--
	01MW27-20100712	07/12/10	7.83	1.816	1.05	15.87	-40.9	--	--	--	--
	01MW27-20100922	09/22/10	6.26	0.1865	0.76	47.3	-189.3	--	--	--	--
	01MW27-20121016	10/16/12	4.02	8.59	6.7	20.18	243	--	--	--	--
01MW27-20130131	01/31/13	6.98	0.136	5.4	7.53	85.0	--	--	--	--	
01MW28	01MW28-20100922	09/22/10	6.26	0.779	5.1	33.43	-139	--	--	--	--
01MW37	01MW37-20090127	01/27/09	6.15	0.970	28.8	8.17	-9	--	--	--	--
	01MW37-20090408	04/08/09	6.35	0.885	1.0	11.41	-411.9	--	--	--	--
	01MW37-20100125	01/25/10	9.05	0.733	--	12.40	1.4	--	--	--	--
	01MW37-20100707	07/07/10	6.62	0.873	0.70	17.76	228	--	--	--	--
	01MW37-20100922	09/22/10	7.15	0.857	0.8	18.44	-89	--	--	--	--
	01MW37-20111209	12/09/11	7.08	0.79	0.36	10.5	18.9	--	--	--	--
01MW37-20121012	10/12/12	6.91	0.057	1.7	15.2	11.4	--	--	--	--	
01MW38	01MW38-20090127	01/27/09	6.50	0.101	20.3	8.52	-42	--	--	--	--
	01MW38-20090408	04/08/09	6.47	0.942	3.7	11.65	-396.9	--	--	--	--
	01MW38-20100707	07/07/10	6.83	0.910	138	16.07	-95	--	--	--	--
	01MW38-20100922	09/22/10	7.58	0.849	1.6	17.61	-172	--	--	--	--
01MW39	01MW39-20090127	01/27/09	6.95	0.095	27.0	8.46	-61	--	--	--	--
	01MW39-20090408	04/08/09	7.05	0.842	0.0	12.30	-87	--	--	--	--
01MW40	01MW40-20090128	01/28/09	7.18	1.080	4.6	11.37	-146	--	--	--	--
	01MW40-20090408	04/08/09	7.52	1.069	21.3	12.49	-156	--	--	--	--
	01MW40-20100126	01/26/10	6.65	0.895	1.49	12.55	11.3	--	--	--	--
	01MW40-20100707	07/07/10	7.19	1.125	1.77	14.74	-114.9	--	0.59	444	470
01MW40-20100922	09/22/10	7.05	1.220	--	15.25	-131.3	--	--	--	--	
01MW41	01MW41-20100922	09/22/10	6.08	0.861	5.10	52.3	-143.70	--	--	--	--
01MW42	01MW42-20090128	01/28/09	6.72	0.391	0.56	9.94	16	--	--	--	--
	01MW42-20090408	04/08/09	7.04	0.359	5.08	12.30	-2.3	--	--	--	--
	01MW42-20100126	01/26/10	7.08	0.283	7.31	11.67	11.1	--	--	--	--
	01MW42-20100922	09/22/10	7.22	0.294	1.2	17.68	-117	--	--	--	--
	01MW42-20111209	12/09/11	6.85	0.286	1.06	10.26	-9.5	--	--	--	--
01MW42-20121015	10/15/12	6.13	0.275	2.6	15.34	75	--	--	--	--	



Table 20
Geochemical and Water Quality Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	pH ⁽¹⁾	Specific Conductivity ⁽¹⁾ (mS/cm)	Turbidity ⁽¹⁾ (NTU)	Temperature ⁽¹⁾ (°C)	ORP ⁽¹⁾ (mV)	TKN ⁽²⁾ (mg/L)	Total Phosphorous ⁽³⁾ (mg/L)	Alkalinity ⁽⁴⁾ (mg/L CaCO ₃)	Hardness ⁽⁵⁾ (mg equivalent CaCO ₃ /L)
Bulk Terminal Property											
Shallow Water-Bearing Zone											
01MW43	01MW43-20100715	07/15/10	--	--	--	--	--	--	1.4	--	--
	01MW43-20100922	09/22/10	6.52	0.391	0.9	18.49	-116	--	--	--	--
01MW59	01MW59-20090129	01/29/09	8.04	0.601	0.0	13.70	-50	--	--	--	--
	01MW59-20090408	04/08/09	6.79	0.540	1.7	13.80	-93	--	--	--	--
	01MW59-20100125	01/25/10	6.80	0.558	2.38	15.10	133.1	--	--	--	--
	01MW59-20110111	01/11/11	6.46	0.400	1.23	13.70	-36	--	--	--	--
	01MW59-20111207	12/07/11	6.68	0.404	1.62	14.36	-20.4	--	--	--	--
	01MW59-20121012	10/12/12	5.05	0.44	0.7	16.2	-73.1	--	--	--	--
01MW66	01MW66-20100126	01/26/10	7.82	0.688	1.41	14.00	7.6	--	--	--	--
	01MW66-20100712	07/12/10	7.00	1.680	131	15.83	15.2	--	--	--	--
	01MW66-20100922	09/22/10	6.48	0.1564	8.6	37.6	-45.6	0.368	0.156	304	270
	01MW66-20110106	01/06/11	4.16	18.2	20.9	28.2	460	1.44	0.205	<1.00	5,960
	01MW66-20110413	04/13/11	5.81	7.61	4.3	22.1	242	1.02	0.005	209	977
	01MW66-20111212	12/12/11	4.13	9.85	19.0	19.1	306	3.26	0.036	<1.00	4,143
	01MW66-20120405	04/05/12	5.05	4.48	36.5	16.48	259	0.864	0.059	104	2,040
	01MW66-20121016	10/16/12	4.82	5.55	73	19.23	361	1.10	0.061	136	2,394
01MW67	01MW66-20130128	01/28/13	5.53	0.652	55.8	13.19	129.7	0.478	0.057	186	199
	01MW67-20100126	01/26/10	8.45	0.521	2.10	14.02	-6.4	--	--	--	--
	01MW67-20100712	07/12/10	4.21	0.610	2.22	16.61	-43	--	--	--	--
	01MW67-20100922	09/22/10	6.87	0.605	4.9	17.76	-118	--	--	--	--
	01MW69-20100127	01/27/10	8.16	0.440	2.40	15.70	-12	--	--	--	--
	01MW69-20100713	07/13/10	6.46	0.435	1.8	16.86	-36.1	--	--	--	--
	01MW69-20100922	09/22/10	6.65	0.392	1.9	23.55	-135	--	--	--	--
	01MW69-20130129	01/29/13	6.66	0.871	4.2	15.87	-51.2	0.338	1.06	189	301
01MW72	01MW72-20100922	09/22/10	7.05	1.159	61.3	16.03	-118	--	--	--	--
01MW74	01MW74-20100707	07/07/10	7.22	0.709	2.30	14.04	74.3	--	0.48	380	300
	01MW74-20100922	09/22/10	6.86	0.662	3.3	14.24	-114	--	--	--	--
	01MW74-20130131	01/31/13	5.10	0.176	6.2	10.04	-15.2	0.475	0.061	115	107
01MW75	01MW75-20100707	07/07/10	7.14	0.961	5.35	15.30	36.2	--	--	462	380
	01MW75-20100922	09/22/10	7.02	1.211	4.8	15.79	-103	0.293	0.066	787	586
	01MW75-20110107	01/07/11	6.68	1.141	2.8	11.27	-25	0.536	0.055	769	603
	01MW75-20110411	04/11/11	6.66	1.14	0.5	11.4	18.1	0.834	0.040	566	548
	01MW75-20111208	12/08/11	6.26	0.874	11.5	12.03	1	0.653	0.061	610	484
	01MW75-20120410	04/10/12	7.07	0.877	1.7	13.54	-71	0.594	0.053	525	498
C3IW01	01MW75-20121015	10/15/12	6.57	0.058	1.8	15.1	-46.0	0.387	0.050	444	440
	C3-20100714	07/14/10	6.59	0.992	2.5	15.57	-1.2	--	1.5	--	--
E9IW01	E9-20100714	07/14/10	6.94	0.543	6.90	16.14	183	--	0.84	--	--
	E9IW01-20100922	09/22/10	6.46	0.647	7.17	37.3	-69.61	--	--	--	--
	E9-20111209	12/09/11	5.74	0.631	10.9	17.52	-33	--	--	--	--
F4IW01	F4-20100715	07/15/10	6.98	0.845	23.8	14.18	-27	--	1.5	--	--
G10IW01	G10-20130130	01/30/13	5.70	0.703	18.9	12.13	29.1	--	--	--	--



Table 20
Geochemical and Water Quality Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	pH ⁽¹⁾	Specific Conductivity ⁽¹⁾ (mS/cm)	Turbidity ⁽¹⁾ (NTU)	Temperature ⁽¹⁾ (°C)	ORP ⁽¹⁾ (mV)	TKN ⁽²⁾ (mg/L)	Total Phosphorous ⁽³⁾ (mg/L)	Alkalinity ⁽⁴⁾ (mg/L CaCO ₃)	Hardness ⁽⁵⁾ (mg equivalent CaCO ₃ /L)
Bulk Terminal Property											
Shallow Water-Bearing Zone											
J10IW01	J10-20100714	07/14/10	6.74	0.901	6.52	14.31	54.2	--	--	--	--
	J10IW01-20100922	09/22/10	--	0.736	1.86	53.3	48.4	1.33	0.302	385	247
	J10-20110110	01/10/11	2.59	23.9	18.2	31.2	634	3.09	0.456	<1.00	4,202
	J10-20110412	04/12/11	3.73	8.07	1.2	23.8	536	1.05	0.038	<1.00	756
	J10-20120412	04/12/12	4.37	2.87	3.9	15.14	257	0.91	0.097	<1.00	557
	J10-20120710	07/10/12	4.07	4.00	2.0	18.9	184.8	0.750	0.04	<1.00	1,230
K3IW01	K3-20100715	07/15/10	6.87	0.434	5.89	13.48	242.3	--	--	--	--
	K3IW01-20100922	09/22/10	6.21		6.6	56.6	-216.5	0.860	0.526	123	146
	K3-20110110	01/10/11	2.55	31.1	8.9	32.6	696	8.06	0.049	<1.00	3,225
	K3-20110412	04/12/11	3.48	17.9	6.9	28.0	634	<0.200	1.76	<1.00	2,668
	K3-20111206	12/06/11	3.61	23.1	30.2	20.10	308	0.481	1.56	56.5	57.4
	K3-20120409	04/09/12	5.80	0.228	4.1	21.81	169.7	0.353	1.40	61.5	3.74
	K3-20120710	07/10/12	5.80	0.174	8.8	18.9	161.9	0.304	1.15	43.3	10.9
	K3-20120727	07/27/12	5.55	0.134	10.8	18.6	184.1	0.485	1.15	44.2	4.69
M5IW01	M5-20100714	07/14/10	7.08	0.665	15.35	15.26	191	--	--	--	--
	M5IW01-20100922	09/22/10	6.48	0.562	11.5	38.93	-19	0.948	0.092	341	200
	M5IW01-20110107	01/07/11	2.27	53.97	7.2	39.64	742	1.18	3.19	<1.00	9,090
	M5-20110412	04/12/11	3.86	21.5	2.8	31.2	492	0.819	0.057	<1.00	7,182
	M5-20120409	04/09/12	5.71	2.63	1.9	18.12	152	0.688	0.093	176	870
	M5-20120711	07/11/12	--	--	--	--	--	0.534	0.067	50.5	1,290
	M5-20121015	10/15/12	4.99	5.50	6.7	17.59	127	1.03	0.085	105	2,365
N7IW01	N7-20120410	04/10/12	4.18	0.698	1.2	13.97	402	0.677	0.014	<1.00	362
	N7-20120710	07/10/12	4.28	0.055	1.9	19.5	139.4	0.444	0.007	<1.00	132
	N7-20130129	01/29/13	5.64	0.257	0.4	9.78	82.8	0.311	0.015	23.5	82.1
N10IW01	N10-20100714	07/14/10	6.52	0.893	5.83	14.40	-83.8	--	--	--	--
	N10IW01-20100922	09/22/10	6.58	0.943	4.93	44.6	-129.8	--	--	--	--
Q9IW01	Q9-20100714	07/14/10	7.36	1.131	9.8	16.21	-113	--	--	--	--
	Q9IW01-20100922	09/22/10	6.84	0.835	4.8	22.68	-148	--	--	--	--
	Q9-20130128	01/28/13	7.07	0.530	8.1	8.98	-139.9	0.889	0.232	318	268
IW03	IW03-20111213	12/13/11	4.53	1.71	3.06	17.6	187.3	3.06	0.008	<1.00	848
	IW03-20120409	04/09/12	5.52	0.815	7.0	14.46	147	0.889	0.020	116	303
	IW03-20121016	10/16/12	4.38	0.361	6.63	18.78	93.4	0.538	0.021	27.5	106
West Commodore Way											
Shallow Water-Bearing Zone											
01MW02	01MW02-20090129	01/29/09	6.95	0.358	2.4	12.00	-107	--	--	--	--
	01MW02-20090407	04/07/09	6.99	0.347	8.0	14.88	-187.8	--	--	--	--
	01MW02-20100128	01/28/10	7.36	0.237	1.52	12.65	144.7	--	--	--	--
01MW03	01MW03-20090128	01/28/09	6.79	0.335	3.1	10.49	-148	--	--	--	--
	01MW03-20090407	04/07/09	6.96	0.346	1.25	14.46	-181.6	--	--	--	--
	01MW03-20111206	12/06/11	6.92	0.533	1.79	12.3	-123.5	--	--	--	--
	01MW03-20120405	04/05/12	6.87	0.402	0.6	15.96	-130.1	--	--	--	--
	01MW03-20121012	10/12/12	6.37	2.504	2.55	15.97	-84.2	--	--	--	--
01MW09	01MW09-20090408	04/08/09	7.11	0.586	34.7	15.03	-156	--	--	--	--



Table 20
Geochemical and Water Quality Parameters
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Sample Date	pH ⁽¹⁾	Specific Conductivity ⁽¹⁾ (mS/cm)	Turbidity ⁽¹⁾ (NTU)	Temperature ⁽¹⁾ (°C)	ORP ⁽¹⁾ (mV)	TKN ⁽²⁾ (mg/L)	Total Phosphorous ⁽³⁾ (mg/L)	Alkalinity ⁽⁴⁾ (mg/L CaCO ₃)	Hardness ⁽⁵⁾ (mg equivalent CaCO ₃ /L)
West Commodore Way											
Shallow Water-Bearing Zone											
01MW11	01MW11-20090129	01/29/09	7.10	0.663	0.0	12.50	-119	--	--	--	--
	01MW11-20090407	04/07/09	6.49	0.347	17.6	13.91	15.4	--	--	--	--
	01MW11-20100128	01/28/10	7.32	0.683	0.54	13.52	148.3	--	--	--	--
01MW30	01MW30-20090128	01/28/09	6.49	0.841	1.5	14.25	-108.0	--	--	--	--
	01MW30-20090408	04/08/09	6.68	0.854	1.9	14.24	-76	--	--	--	--
	01MW30-20100126	01/26/10	6.82	0.959	--	15.19	194.8	--	--	--	--
01MW32	01MW32-20090126	01/26/09	5.50	0.259	59.1	11.61	60	--	--	--	--
	01MW32-20090408	04/08/09	5.76	0.244	2.1	13.51	-254.4	--	--	--	--
	01MW32-20100204	02/04/10	6.70	0.234	0.45	14.03	148.0	--	--	--	--
01MW34	01MW34-20090126	01/26/09	6.25	0.302	28.0	12.00	202	--	--	--	--
	01MW34-20090406	04/06/09	6.03	0.351	0.0	18.00	199	--	--	--	--
	01MW34-20100125	01/25/10	6.48	0.332	3.68	13.89	139.1	--	--	--	--
	01MW34-20111207	12/07/11	6.38	0.241	1.2	11.97	146.1	--	--	--	--
01MW36	01MW36-20090128	01/28/09	6.63	0.484	--	14.24	115.5	--	--	--	--
	01MW36-20090408	04/08/09	5.95	0.392	1.1	13.50	-356.5	--	--	--	--
	01MW36-20100128	01/28/10	6.87	0.347	2.25	14.36	172.6	--	--	--	--
01MW47	01MW47-20090126	01/26/09	7.86	0.533	1.9	15.29	-218	--	--	--	--
	01MW47-20090406	04/06/09	6.44	0.775	4.7	15.90	-132	--	--	--	--
01MW49	01MW49-20090126	01/26/09	6.97	0.579	82.7	13.35	-137	--	--	--	--
01MW50	01MW50-20090126	01/26/09	6.71	0.769	268	13.01	-44	--	--	--	--
	01MW50-20100405	04/05/10	6.69	0.829	2.94	15.41	-50.3	--	--	--	--
	01MW50-20100125	01/25/10	6.82	0.763	2.26	15.75	114.5	--	--	--	--
01MW87	01MW87-20111207	12/07/11	5.38	0.26	9.5	10.46	286.6	--	--	--	--
	01MW87-20121016	10/16/12	6.19	0.279	7.5	14.6	143.6	--	--	--	--
West Commodore Way											
Intermediate Water-Bearing Zone											
01MW48	01MW48-20090126	01/26/09	10.31	0.099	1.1	13.10	-105	--	--	--	--
	01MW48-20090406	04/06/09	6.39	0.100	10.5	16.40	-97	--	--	--	--
01MW51	01MW51-20090126	01/26/09	10.19	0.681	0.0	13.40	-80	--	--	--	--
	01MW51-20090406	04/06/09	6.51	0.649	0.0	16.00	-125	--	--	--	--

NOTES:
 Analyses performed by Friedman and Bruya, Inc., Fremont Analytical Inc., or Aquatic Research Inc., of Seattle, Washington; or Amtest Inc. of Kirkland, Washington.
⁽¹⁾Parameter is measured in the field using water quality meter with flow-through cell. The reported value is the last reading prior to sampling groundwater.
⁽²⁾Analyzed by EPA Method 351.1.
⁽³⁾Analyzed by EPA Method 365.1 or 365.3.
⁽⁴⁾Analyzed by Standard Method 2320B.
⁽⁵⁾Analyzed by EPA Method 200.7 or 351.1.

°C = degrees Celsius
 CaCO₃/L = calcium carbonate per liter
 EPA = U. S. Environmental Protection Agency
 mg/L = milligrams per liter
 mS/cm = millisiemens per centimeter
 mV = millivolts
 NTU = nephelometric turbidity units
 ORP = oxidation-reduction potential
 TKN = Total Kjeldahl Nitrogen



Table 21
Groundwater Analytical Results for Chlorinated VOCs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)					
			Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride
Bulk Terminal Property								
Shallow Water-Bearing Zone								
01MW01	01-MW-01-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW04	01-MW-04-20060621	06/21/06	<0.200	0.460	0.400	<0.200	<0.200	<0.200
	01MW04-20061213	12/13/06	<1	<1	<1	<1	<1	<0.2
01MW06	01-MW-06-20060620	06/20/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
	01MW06-20061212	12/12/06	<1	<1	<1	<1	<1	<0.2
	01MW06-20090128	01/28/09	<1	<1	<1	<1	<1	<0.2
	01MW06-20090407	04/07/09	<1	<1	<1	<1	<1	<0.2
	01MW06-20090706	07/06/09	<1	<1	<1	<1	<1	<0.2
	01MW06-20100125	01/25/10	<1	<1	<1	<1	<1	<0.2
	01MW06-20100407	04/07/10	<1	<1	<1	<1	<1	0.40
	01MW06-20100713	07/13/10	<1	<1	<1	<1	<1	<0.2
	01MW06-20110110	01/10/11	<1	<1	<1	<1	<1	<0.2
	01MW06-20110413	04/13/11	<1	<1 ^j	<1	<1	<1	<0.2
	01MW06-20111206	12/06/11	<1	<1	<1	<1	<1	<0.2
01MW06-20120405	04/05/12	<1	<1	<1	<1	<1	<0.2	
01MW06-20121012	10/12/12	<1	<1	<1	<1	<1	<0.2	
01MW08	01-MW-08-20060620	06/20/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW12	01-MW-12-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW13	01-MW-13-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW17	01-MW-17-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW18	01-MW-18-20060620	06/20/06	<0.200	<0.200	1.16	<0.200	<0.200	<0.200
01MW19	01-MW-19-20060620	06/20/06	<0.200	0.660	0.720	<0.200	<0.200	<0.200
	01MW19-20061213	12/13/06	<100	<100	<100	<100	<100	<20
	01MW19-20090129	01/29/09	<1	<1	<1	<1	<1	<0.2
	01MW19-20090408	04/08/09	<1	<1	<1	<1	<1	<0.2
	01MW19-20090706	07/06/09	<1	<1	<1	<1	<1	<0.2
	01MW19-20100128	01/28/10	<1	<1	<1	<1	<1	<0.2
	01MW19-20100407	04/07/10	<1	<1	<1	<1	<1	<0.2
	01MW19-20100713	07/13/10	<1	<1	<1	<1	<1	<0.2
	01MW19-20110111	01/11/11	<1	<1	<1	<1	<1	<0.2
	01MW19-20110413	04/13/11	<1	<1	<1	<1	<1	<0.2
	01MW19-20111207	12/07/11	<1	<1	<1	<1	<1	<0.2
01MW19-20120409	04/09/12	<1	<1	<1	<1	<1	<0.2	
01MW19-20121015	10/15/12	<1	<1	<1	<1	<1	<0.2	
01MW20	01-MW-20-20060620	06/20/06	<0.200	1.62	1.04	<0.200	<0.200	<0.200
	01MW20-20061213	12/13/06	<1	8.6	2.0	<1	<1	<0.2
	01MW20-20090129	01/29/09	<1	2.0	<1	<1	<1	<0.2
	01MW20-20090408	04/08/09	<1	1.4	<1	<1	<1	<0.2
01MW21	01-MW-21-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	
01MW26	01-MW-26-20060621	06/21/06	<0.200	<0.200	1.03	<0.200	<0.200	
01MW27	01-MW-27-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	
01MW37	01MW37-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	
01MW38	01MW38-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	
01MW39	01MW39-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	
01MW40	01MW40-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	
MTCA Cleanup Level for Groundwater			5⁽²⁾	5⁽²⁾	16⁽³⁾	160⁽³⁾	400⁽³⁾	0.2⁽²⁾



Table 21
Groundwater Analytical Results for Chlorinated VOCs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)					
			Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride
Bulk Terminal Property								
Shallow Water-Bearing Zone								
01MW41	01MW41-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW42	01MW42-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW43	01MW43-20060927	09/27/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW59	01MW59-20081125	11/25/08	<1	<1	1.1	<1	<1	<0.2
	01MW59-20090129	01/29/09	<1	<1	<1	<1	<1	<0.2
	01MW59-20090706	07/06/09	<1	<1	<1	<1	<1	<0.2
	01MW59-20100125	01/25/10	<1	<1	<1	<1	<1	<0.2
	01MW59-20100407	04/07/10	<1	<1	<1	<1	<1	<0.2
	01MW59-20100713	07/13/10	<1	<1	<1	<1	<1	<0.2
	01MW59-20110111	01/11/11	<1	<1	<1	<1	<1	<0.2
	01MW59-20110414	04/14/11	<1	<1	<1	<1	<1	<0.2
	01MW59-20111207	12/07/11	<1	<1	<1	<1	<1	<0.2
01MW59-20120409	04/09/12	<1	<1	<1	<1	<1	<0.2	
01MW59-20121012	10/12/12	<1	<1	<1	<1	<1	<0.2	
West Commodore Way								
Shallow Water-Bearing Zone								
01MW03	01-MW-03-20060621	06/21/06	<0.200	<0.200	0.390	<0.200	<0.200	<0.200
01MW11	01-MW-11-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW30	01-MW-30-20060621	06/21/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
	01MW30-20061212	12/12/06	<1	<1	<1	<1	<1	<0.2
	01MW30-20090128	01/28/09	<1	<1	<1	<1	<1	<0.2
	01MW30-20090408	04/08/09	<1	<1	<1	<1	<1	<0.2
	01MW30-20090707	07/07/09	<1	<1	<1	<1	<1	<0.2
	01MW30-20100126	01/26/10	<1	<1	<1	<1	<1	<0.2
	01MW30-20100407	04/07/10	<1	<1	<1	<1	<1	<0.2
	01MW30-20100713	07/13/10	<1	<1	<1	<1	<1	<0.2
	01MW30-20110111	01/11/11	<1	<1	<1	<1	<1	<0.2
	01MW30-20110414	04/14/11	<1	<1	<1	<1	<1	<0.2
	01MW30-20111206	12/06/11	<1	<1	<1	<1	<1	<0.2
01MW30-20120405	04/05/12	<1	<1	<1	<1	<1	<0.2	
01MW30-20121012	10/12/12	<1	<1	<1	<1	<1	<0.2	
01MW32	01MW32-20060713	07/13/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW33	01MW33-20060713	07/13/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW36	01MW36-20060713	07/13/06	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
01MW47	01MW47-20061222	12/22/06	<1	<1	<1	<1	<1	<0.2
01MW49	01MW49-20061222	12/22/06	<1	<1	<1	<1	<1	<0.2
01MW50	01MW50-20061222	12/22/06	<1	<1	<1	<1	<1	<0.2
MTCA Cleanup Level for Groundwater			5⁽²⁾	5⁽²⁾	16⁽³⁾	160⁽³⁾	400⁽³⁾	0.2⁽²⁾



Table 21
Groundwater Analytical Results for Chlorinated VOCs
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well Identification	Sample Identification	Date Sampled	Analytical Results ⁽¹⁾ (micrograms per liter)					
			Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride
West Commodore Way								
Intermediate Water-Bearing Zone								
01MW48	01MW48-20061222	12/22/06	<1	<1	<1	<1	<1	<0.2
01MW51	01MW51-20061222	12/22/06	<1	<1	<1	<1	<1	<0.2
MTCA Cleanup Level for Groundwater			5⁽²⁾	5⁽²⁾	16⁽³⁾	160⁽³⁾	400⁽³⁾	0.2⁽²⁾

NOTES:

Red denotes concentration exceeds MTCA cleanup level for groundwater.

Black denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater; The detection limit has been raised due to associated analytes requiring dilution and/or historical cleanup levels that historical detection limits were based upon.

Sample analyses conducted by TestAmerica Laboratories, Inc. of Bothell, Washington, or Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾Samples analyzed by U. S. Environmental Protection Agency Method 8260B or C.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Groundwater, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

Laboratory Note:

[¶]The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

MTCA = Washington State Model Toxics Control Act

VOCs = volatile organic compounds

WAC = Washington Administrative Code



Table 22
LNAPL Analytical Results - VPH and EPH
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Well ID	Sample ID	Date Sampled	Unit	Analytical Results																		
				VPH								EPH										
				Aliphatics				Aromatics				Aliphatics					Aromatics					Total ⁽¹⁾
				C5-C6	C6-C8	C8-C10	C10-C12	C8-C10	C10-C12	C12-C13	Total ⁽¹⁾	C8-C10	C10-C12	C12-C16	C16-C21	C21-C34	C8-C10	C10-C12	C12-C16	C16-C21	C21-C34	
Bulk Terminal Property																						
01MW23	01MW23-20100708	07/08/10	mg/L	<500	160	1,900	7,100	5,100	560	2,300	17,370	<800	37,000	250,000	650,000	120,000	<800	<800	3,100	80,000	3,700	1,145,000
	01MW29-20100712	07/12/10	mg/L	<500	2,000	15,000	4,500	34,000	82,000	13,000	150,750	<800	<800	37,000	360,000	21,000	<800	5,100	20,000	110,000	5,400	559,700
01MW29	01MW29-20100922	09/22/10	mg/L	2,200	10,000	21,000	140,000	50,000	260,000	79,000	562,200	<500	3,600	40,000	35,000	6,500	1,200	2,600	65,000	120,000	14,000	288,150
	01MW29-20110110-LNAPL	01/10/11	mg/kg	920	5,370	50,900	27,300	16,700	24,800	15,000	140,990	23,400	43,400	206,000	182,000	7,080	1,730	2,310	22,700	77,400	2,020	568,040
01MW41	01MW41-20100715	07/15/10	mg/L	<500	690	3,700	11,000	7,100	930	3,700	27,370	<800	12,000	140,000	130,000	17,000	<800	2,800	8,700	15,000	1,200	327,500
	01MW41-20100922	09/22/10	mg/L	100	530	1,600	4,900	2,100	12,000	3,700	24,930	<5,000	27,000	45,000	34,000	29,000	<5,000	26,000	180,000	160,000	50,000	556,000
01MW73	01MW73-20100708	07/08/10	mg/L	<500	15,000	72,000	86,000	78,000	9,300	14,000	274,550	<800	100,000	210,000	190,000	24,000	<800	2,500	5,000	16,000	2,000	550,300
	01MW73-20100922	09/22/10	mg/L	7,400	28,000	48,000	62,000	76,000	280,000	53,000	554,400	3,100	5,100	6,500	11,000	4,800	34,000	47,000	160,000	83,000	13,000	367,500
	01MW73-20110107-LNAPL	01/07/11	mg/kg	6,100	14,200	96,000	61,400	42,400	42,000	19,600	281,700	10,800	62,000	163,000	98,000	11,200	2,170	3,680	16,100	40,500	1,960	409,423
C3IW01	C3-20100922	09/22/10	mg/L	3,000	33,000	70,000	270,000	220,000	650,000	93,000	1,339,000	82,000	100,000	220,000	140,000	30,000	9,000	21,000	360,000	410,000	87,000	1,459,000
	C3-20110110-LNAPL	01/10/11	mg/kg	2.75	14.6	2,990	13,400	5,400	6,190	261	28,258	6.22	<5.00	<5.00	5.58	<5.00	5.92	5.58	<5.00	<5.00	<5.00	36
G7IW01	IG7IW01-20100922	09/22/10	mg/L	<50	480	710	2,400	2,400	13,000	4,100	23,115	<5,000	14,000	93,000	80,000	57,000	<5,000	85,000	140,000	140,000	21,000	635,000
	G7-20110107-LNAPL	01/07/11	mg/kg	310	1,250	18,800	22,500	11,700	32,500	24,900	111,960	17,500	41,800	109,000	78,100	15,800	2,540	2,860	15,400	39,500	7,240	329,740

NOTES:

Samples collected by SoundEarth Strategies, Inc.

Chemical analyses conducted by Fremont Analytical, Inc. of Seattle, Washington.

Samples analyzed by Washington State Department of Ecology-published VPH and EPH Methods.

⁽¹⁾Total = the sum of analytical results for each range. When analytical result is reported as less than the MRL, half the MRL is used for the calculation.

< = concentration is below the laboratory reporting limit

EPH = extractable petroleum hydrocarbons

LNAPL = light nonaqueous-phase liquid

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

MRL = method reporting limit

VPH = volatile petroleum hydrocarbons



Table 23
Summary of Stormwater Analytical Results for PCP
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Sample Date	Rainfall ⁽¹⁾ (inches)	Sample Type	Comments	Analytical Results ⁽²⁾
					Concentration of PCP in Water (µg/L)
DAILY SAMPLING RESULTS AND DAILY RAINFALL					
GAC0-20061111	11/11/06	0.91	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.16 ⁽³⁾
GAC1-20061111			Primary Effluent		2.3 ⁽⁴⁾
GAC2-20061111			Secondary Effluent		0.044
GAC0-20061112	11/12/06	0.23	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	4.5
GAC1-20061112			Primary Effluent		0.11
GAC2-20061112			Secondary Effluent		0.027
GAC0-20061113	11/13/06	0.02	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.11 ⁽³⁾
GAC1-20061113			Primary Effluent		0.92 ⁽⁴⁾
GAC2-20061113			Secondary Effluent		0.029
GAC0-20061114	11/14/06	0.44	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	3.5
GAC1-20061114			Primary Effluent		0.1
GAC2-20061114			Secondary Effluent		0.088
GAC0-20061115	11/15/06	T	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	1.4
GAC1-20061115			Primary Effluent		<0.0048
GAC2-20061115			Secondary Effluent		<0.0048
GAC0-20061116	11/16/06	0.00	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	16 ⁽⁵⁾
GAC1-20061116			Primary Effluent		0.14
GAC2-20061116			Secondary Effluent		0.11
--	11/17/06	0.00	--	No sample collected. Insufficient rainfall.	--
--	11/18/06	0.46	--	No sample collected. Insufficient rainfall.	--
GAC0-20061119	11/19/06	0.51	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.95
GAC1-20061119			Primary Effluent		<0.0049
GAC2-20061119			Secondary Effluent		<0.0050
GAC0-20061120	11/20/06	0.51	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	1.5
GAC1-20061120			Primary Effluent		<0.0053
GAC2-20061120			Secondary Effluent		<0.0051
GAC0-20061121	11/21/06	0.54	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.036
GAC1-20061121			Primary Effluent		0.6
GAC2-20061121			Secondary Effluent		0.0076
GAC0-20061122	11/22/06	0.64	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.53
GAC1-20061122			Primary Effluent		0.0091
GAC2-20061122			Secondary Effluent		0.021
GAC0-20061123	11/23/06	T	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.4
GAC1-20061123			Primary Effluent		<0.0049
GAC2-20061123			Secondary Effluent		0.0080
GAC0-20061124	11/24/06	0.00	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	2.6
GAC1-20061124			Primary Effluent		0.0057
GAC2-20061124			Secondary Effluent		<0.0051
GAC0-20061125	11/25/06	0.75	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	3.7
GAC1-20061125			Primary Effluent		<0.0053
GAC2-20061125			Secondary Effluent		0.034
GAC0-20061126	11/26/06	0.11	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.75
GAC1-20061126			Primary Effluent		0.059
GAC2-20061126			Secondary Effluent		0.026
GAC0-20061127	11/27/06	0.00	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.82
GAC1-20061127			Primary Effluent		<0.0053
GAC2-20061127			Secondary Effluent		0.078
--	11/28/06	0.03	--	No sample collected. Insufficient rainfall, freezing.	--
--	11/29/06	0.07	--	No sample collected. Insufficient rainfall, freezing.	--
GAC0-20061130	11/30/06	0.05	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	2.5
GAC1-20061130			Primary Effluent		0.007
GAC2-20061130			Secondary Effluent		0.014
GAC0-20061201	12/01/06	0.00	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.49
GAC1-20061201			Primary Effluent		0.0075
GAC2-20061201			Secondary Effluent		0.030
MTCA Method B Cleanup Levels for Surface Water⁽⁶⁾					1.5
King County Industrial Allocation (Through January 2007)					0.5
King County Discharge Criteria⁽⁷⁾					5.3



Table 23
Summary of Stormwater Analytical Results for PCP
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Sample Date	Rainfall ⁽¹⁾ (inches)	Sample Type	Comments	Analytical Results ⁽²⁾
					Concentration of PCP in Water (µg/L)
WEEKLY SAMPLING RESULTS AND WEEKLY RAINFALL					
GAC0-20061205	12/05/06	0.15	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	3.0
GAC1-20061205			Primary Effluent		0.0095
GAC2-20061205			Secondary Effluent		0.0069
GAC0-20061212	12/12/06	3.77	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.5
GAC1-20061212			Primary Effluent		0.071
GAC2-20061212			Secondary Effluent		0.050
GAC0-20061219	12/19/06	1.34	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	3.0
GAC1-20061219			Primary Effluent		0.031
GAC2-20061219			Secondary Effluent		0.023
GAC0-20061229	12/29/06	2.45	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	25
GAC1-20061229			Primary Effluent		0.28
GAC2-20061229			Secondary Effluent		0.053
GAC0-20060102	01/02/06	1.95	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	36
GAC1-20060102			Primary Effluent		0.48
GAC2-20060102			Secondary Effluent		0.015
GAC0-20070109	01/09/07	0.89	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	3.3
GAC1-20070109			Primary Effluent		<0.0051
GAC2-20070109			Secondary Effluent		<0.0060
--	--	0.35	--	Treatment system off-line from 01.10.07 to 01.19.07	--
GAC0-20070124	01/24/07	T	Untreated Influent	Interim GAC treatment system on-line (OWS Bypass)	0.68
GAC1-20070124			Primary Effluent		0.12
GAC2-20070124			Secondary Effluent		0.24
--	--	0.11	--	Insufficient rainfall / treatment system inactive	--
--	--	0.29	--	Insufficient rainfall / treatment system inactive	--
GAC0-20070215	02/15/07	0.49	Untreated Influent	Interim GAC treatment system on-line (System Startup)	3.0
GAC1-20070215			Primary Effluent		<0.0049
GAC2-20070215			Secondary Effluent		<0.0050
--	--	0.75	--	Insufficient rainfall / treatment system inactive	--
GAC0-20070226	02/26/07	0.70	Untreated Influent	Interim GAC treatment system on-line (System Startup)	4.6
GAC1-20070226			Primary Effluent		0.083
GAC2-20070226			Secondary Effluent		0.043
MONTHLY SAMPLING RESULTS AND MONTHLY RAINFALL					
GAC0-20070306	03/06/07	2.97	Untreated Influent	GAC pre-treatment system on-line	6.3
GAC1-20070306			Primary Effluent		<0.10
GAC2-20070306			Secondary Effluent		<0.10
GAC0-20070411	04/11/07	1.89	Untreated Influent	GAC pre-treatment system on-line	0.74
GAC1-20070411			Primary Effluent		0.12
GAC2-20070411			Secondary Effluent		0.095
GAC0-20070509	05/09/07	1.39	Untreated Influent	GAC pre-treatment system on-line	<0.10
GAC1-20070509			Primary Effluent		<0.10
GAC2-20070509			Secondary Effluent		0.12
GAC0-20070628	06/28/07	1.03	Untreated Influent	GAC pre-treatment system on-line	<0.10
GAC1-20070628			Primary Effluent		<0.10
GAC2-20070628			Secondary Effluent		<0.10
GAC0-20070710	07/10/07	1.52	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20070710			Primary Effluent		<0.11
GAC2-20070710			Secondary Effluent		<0.10
GAC0-20070806	08/06/07	0.76	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20070806			Primary Effluent		0.13
GAC2-20070806			Secondary Effluent		0.11
GAC0-20070904	09/04/07	3.16	Untreated Influent	GAC pre-treatment system off-line for repairs	--
GAC1-20070904			Primary Effluent		0.28
GAC2-20070904			Secondary Effluent		0.11
MTCA Method B Cleanup Levels for Surface Water⁽⁶⁾					1.5
King County Industrial Allocation (Through January 2007)					0.5
King County Discharge Criteria⁽⁷⁾					5.3



Table 23
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TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Sample Date	Rainfall ⁽¹⁾ (inches)	Sample Type	Comments	Analytical Results ⁽²⁾
					Concentration of PCP in Water (µg/L)
GAC0-20070904	09/04/07	3.16	Untreated Influent	GAC pre-treatment system off-line for repairs	--
GAC1-20070904			Primary Effluent		<0.25
GAC2-20070904			Secondary Effluent		<0.24
GAC0-20071023	10/23/07	2.52	Untreated Influent	GAC pre-treatment system off-line for repairs	--
GAC1-20071023			Primary Effluent		<0.24
GAC2-20071023			Secondary Effluent		<0.24
GAC0-20071101	11/01/07	1.85	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20071101			Primary Effluent		<0.25
GAC2-20071101			Secondary Effluent		<0.24
GAC0-20071211	12/11/07	9.10	Untreated Influent	GAC pre-treatment system on-line	2.9
GAC1-20071211			Primary Effluent		<0.24
GAC2-20071211			Secondary Effluent		<0.24
GAC0-20080115	01/15/08	4.17	Untreated Influent	GAC pre-treatment system on-line	1.4
GAC1-20080115			Primary Effluent		<0.5
GAC2-20080115			Secondary Effluent		<0.5
GAC0-20080207	02/07/08	1.59	Untreated Influent	GAC pre-treatment system on-line	0.7
GAC1-20080207			Primary Effluent		<0.5
GAC2-20080207			Secondary Effluent		<0.5
GAC0-20080331	03/31/08	3.59	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20080331			Primary Effluent		<0.5
GAC2-20080331			Secondary Effluent		<0.5
GAC0-20080418	04/18/08	2.33	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20080418			Primary Effluent		<0.5
GAC2-20080418			Secondary Effluent		<0.5
GAC0-20080516	05/16/08	0.87	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20080516			Primary Effluent		<0.5
GAC2-20080516			Secondary Effluent		<0.5
GAC0-20080623	06/23/08	2.07	Untreated Influent	GAC pre-treatment system off-line for dry season	--
GAC1-20080623			Primary Effluent		<0.5
GAC2-20080623			Secondary Effluent		<0.5
GAC0-20080718	07/18/08	0.58	Untreated Influent	GAC pre-treatment system off-line for dry season	--
GAC1-20080718			Primary Effluent		<0.5
GAC2-20080718			Secondary Effluent		<0.5
GAC0-20080828	08/28/08	2.64	Untreated Influent	GAC pre-treatment system off-line for dry season	--
GAC1-20080828			Primary Effluent		<0.5
GAC2-20080828			Secondary Effluent		<0.5
GAC0-20080930	09/30/08	0.79	Untreated Influent	GAC pre-treatment system off-line for dry season	--
GAC1-20080930			Primary Effluent		<0.5
GAC2-20080930			Secondary Effluent		<0.5
GAC0-20081027	10/27/08	2.34	Untreated Influent	GAC pre-treatment system off-line for repairs	--
GAC1-20081027			Primary Effluent		<0.5
GAC2-20081027			Secondary Effluent		<0.5
GAC0-20081119	11/19/08	4.91	Untreated Influent	GAC pre-treatment system on-line	--
GAC1-20081119			Primary Effluent		<1
GAC2-20081119			Secondary Effluent		<1
GAC0-20081211	12/11/08	4.58	Untreated Influent	GAC pre-treatment system on-line	1.3 ^f
GAC1-20081211			Primary Effluent		<0.5
GAC2-20081211			Secondary Effluent		<0.5
GAC0-20090109	01/09/09	3.42	Untreated Influent	GAC pre-treatment system on-line	2.8
GAC1-20090109			Primary Effluent		<0.5
GAC2-20090109			Secondary Effluent		<0.5
GAC0-20090213	02/13/09	1.74	Untreated Influent	GAC pre-treatment system on-line	0.95
GAC1-20090213			Primary Effluent		<0.5
GAC2-20090213			Secondary Effluent		<0.5
MTCA Method B Cleanup Levels for Surface Water⁽⁶⁾					1.5
King County Industrial Allocation (Through January 2007)					0.5
King County Discharge Criteria⁽⁷⁾					5.3



Table 23
Summary of Stormwater Analytical Results for PCP
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Sample Date	Rainfall ⁽¹⁾ (inches)	Sample Type	Comments	Analytical Results ⁽²⁾
					Concentration of PCP in Water (µg/L)
GAC0-20090312	03/12/09	3.87	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20090312			Primary Effluent		<0.5
GAC2-20090312			Secondary Effluent		<0.5
GAC0-20090409	04/09/09	2.94	Untreated Influent	GAC pre-treatment system on-line	0.71
GAC1-20090409			Primary Effluent		<0.5
GAC2-20090409			Secondary Effluent		<0.5
GAC0-20090507	05/07/09	3.79	Untreated Influent	GAC pre-treatment system on-line	<2.5
GAC1-20090507			Primary Effluent		<2.5
GAC2-20090507			Secondary Effluent		<2.5
GAC0-20090605	06/05/09	0.27	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20090605			Primary Effluent		0.73
GAC2-20090605			Secondary Effluent		<0.5
GAC0-20090717	07/17/09	0.16	Untreated Influent	GAC pre-treatment system offline for dry season	--
GAC1-20090717			Primary Effluent		<2.5
GAC2-20090717			Secondary Effluent		<2.5
GAC0-20090817	08/17/09	0.79	Untreated Influent	GAC pre-treatment system offline for dry season	--
GAC1-20090817			Primary Effluent		<0.5
GAC2-20090817			Secondary Effluent		<0.5
GAC0-20090923	09/23/09	2.35	Untreated Influent	GAC pre-treatment system offline for dry season	<2.5
GAC1-20090923			Primary Effluent		<2.5
GAC2-20090923			Secondary Effluent		<2.5
GAC0-20091013	10/13/09	5.60	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20091013			Primary Effluent		<0.5
GAC2-20091013			Secondary Effluent		<0.5
GAC0-20091112	11/12/09	8.96	Untreated Influent	GAC pre-treatment system on-line	<2.5
GAC1-20091112			Primary Effluent		<2.5
GAC2-20091112			Secondary Effluent		<2.5
GAC0-20091215	12/15/09	2.29	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20091215			Primary Effluent		<0.5
GAC2-20091215			Secondary Effluent		<0.5
GAC0-20100114	01/14/10	6.28	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20100114			Primary Effluent		<0.5
GAC2-20100114			Secondary Effluent		<0.5
GAC0-20100216	02/16/10	2.79	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20100216			Primary Effluent		<0.5
GAC2-20100216			Secondary Effluent		<0.5
GAC0-20100315	03/15/10	3.16	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20100315			Primary Effluent		<0.5
GAC2-20100315			Secondary Effluent		<0.5
GAC0-20100414	04/14/10	2.75	Untreated Influent	GAC pre-treatment system on-line	0.83
GAC1-20100414			Primary Effluent		<0.5
GAC2-20100414			Secondary Effluent		<0.5
GAC0-20100512	05/12/10	3.66	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20100512			Primary Effluent		<0.5
GAC2-20100512			Secondary Effluent		<0.5
GAC0-20100614	06/14/10	2.34	Untreated Influent	GAC pre-treatment system on-line through 6/14/2010	2.9
GAC1-20100614			Primary Effluent		<0.5
GAC2-20100614			Secondary Effluent		<0.5
GAC0-20100712	07/12/10	0.13	Untreated Influent	GAC pre-treatment system on-line	0.78
GAC1-20100712			Primary Effluent		<0.5
GAC2-20100712			Secondary Effluent		<0.5
GAC0-20100811	08/11/10	0.93	Untreated Influent	GAC pre-treatment system on-line	0.91
GAC1-20100811			Primary Effluent		<0.5
GAC2-20100811			Secondary Effluent		<0.5
GAC0-20100913	09/13/10	3.90	Untreated Influent	GAC pre-treatment system on-line	2.5
GAC1-20100913			Primary Effluent		<0.5
GAC2-20100913			Secondary Effluent		<0.5
MTCA Method B Cleanup Levels for Surface Water⁽⁶⁾					1.5
King County Industrial Allocation (Through January 2007)					0.5
King County Discharge Criteria⁽⁷⁾					5.3



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TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Sample Date	Rainfall ⁽¹⁾ (inches)	Sample Type	Comments	Analytical Results ⁽²⁾
					Concentration of PCP in Water (µg/L)
GAC0-20101014	10/14/10	3.82	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20101014			Primary Effluent		<0.5
GAC2-20101014			Secondary Effluent		<0.5
GAC0-20101111	11/11/10	4.87	Untreated Influent	GAC pre-treatment system on-line	0.78
GAC1-20101111			Primary Effluent		<0.5
GAC2-20101111			Secondary Effluent		<0.5
GAC0-20101213	12/13/10	7.94	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC1-20101213			Primary Effluent		<0.5
GAC2-20101213			Secondary Effluent		<0.5
GAC0-20110111	01/11/11	4.85	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110111			Primary Effluent		<0.5
GAC4-20110111			Secondary Effluent		<0.5
GAC0-20110211	02/11/11	3.33	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110211			Primary Effluent		<0.5
GAC4-20110211			Secondary Effluent		<0.5
GAC0-20110315	03/15/11	6.00	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110315			Primary Effluent		<0.5
GAC4-20110315			Secondary Effluent		<0.5
GAC0-20110415	04/15/11	3.36	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110415			Primary Effluent		<0.5
GAC4-20110415			Secondary Effluent		<0.5
GAC0-20110512	05/12/11	3.20	Untreated Influent	GAC pre-treatment system on-line	1.3 ^h
GAC3-20110512			Primary Effluent		<0.5
GAC4-20110512			Secondary Effluent		<0.5
GAC0-20110613	06/13/11	1.42	Untreated Influent	GAC pre-treatment system on-line	0.67
GAC3-20110613			Primary Effluent		<0.5
GAC4-20110613			Secondary Effluent		<0.5
GAC0-20110712	07/12/11	0.61	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110712			Primary Effluent		<0.5
GAC4-20110712			Secondary Effluent		<0.5
GAC0-20110816	08/16/11	0.11	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110816			Primary Effluent		<0.5
GAC4-20110816			Secondary Effluent		<0.5
GAC0-20110912	09/12/11	0.91	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20110912			Primary Effluent		<0.5
GAC4-20110912			Secondary Effluent		<0.5
GAC0-20111013	10/13/11	2.97	Untreated Influent	GAC pre-treatment system on-line	0.59
GAC3-20111013			Primary Effluent		<0.5
GAC4-20111013			Secondary Effluent		<0.5
GAC0-20111115	11/15/11	6.14	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20111115			Primary Effluent		<0.5
GAC4-20111115			Secondary Effluent		<0.5
GAC0-20111216	12/16/11	1.49	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20111216			Primary Effluent		<0.5
GAC4-20111216			Secondary Effluent		<0.5
GAC0-20120117	01/17/12	5.26	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20120117			Primary Effluent		<0.5
GAC4-20120117			Secondary Effluent		<0.5
GAC0-20120221	02/21/12	3.21	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20120221			Primary Effluent		<0.5
GAC4-20120221			Secondary Effluent		<0.5
MTCA Method B Cleanup Levels for Surface Water⁽⁶⁾					1.5
King County Industrial Allocation (Through January 2007)					0.5
King County Discharge Criteria⁽⁷⁾					5.3



Table 23
Summary of Stormwater Analytical Results for PCP
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Sample Date	Rainfall ⁽¹⁾ (inches)	Sample Type	Comments	Analytical Results ⁽²⁾
					Concentration of PCP in Water (µg/L)
GAC0-20120313	03/13/12	5.96	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20120313			Primary Effluent		<0.5
GAC4-20120313			Secondary Effluent		<0.5
GAC0-20120423	04/23/12	2.31	Untreated Influent	GAC pre-treatment system on-line	0.20
GAC3-20120423			Primary Effluent		<0.2
GAC4-20120423			Secondary Effluent		<0.2
GAC0-20120514	05/14/12	2.87	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20120514			Primary Effluent		<0.5
GAC4-20120514			Secondary Effluent		<0.5
GAC0-20120611	06/11/12	3.39	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20120611			Primary Effluent		<0.5
GAC4-20120611			Secondary Effluent		<0.5
GAC0-20120719	07/19/12	1.70	Untreated Influent	Stormwater pretreatment system inactive. Groundwater pretreatment system on-line and reported	0.68
GAC2-20120719			Primary Effluent		<0.2
GAC3-20120719			Secondary Effluent		<0.2
GAC0-20120821	08/21/12	0.00	Untreated Influent	Stormwater pretreatment system inactive. Groundwater pretreatment system on-line and reported	<0.5
GAC2-20120821			Primary Effluent		<0.5
GAC3-20120821			Secondary Effluent		<0.5
GAC0-20120924	09/24/12	0.24	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20120924			Primary Effluent		<0.5
GAC4-20120924			Secondary Effluent		<0.5
GAC0-20121025	10/25/12	5.77	Untreated Influent	GAC pre-treatment system on-line	3.0
GAC3-20121025			Primary Effluent		<0.5
GAC4-20121025			Secondary Effluent		<0.5
GAC0-20121114	11/14/12	9.17	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20121114			Primary Effluent		<0.5
GAC4-20121114			Secondary Effluent		<0.5
GAC0-20121210	12/10/12	7.03	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20121210			Primary Effluent		<0.5
GAC4-20121210			Secondary Effluent		<0.5
GAC0-20130128	01/28/13	5.27	Untreated Influent	GAC pre-treatment system on-line	<0.5
GAC3-20130128			Primary Effluent		<0.5
GAC4-20130128			Secondary Effluent		<0.5
MTCA Method B Cleanup Levels for Surface Water⁽⁶⁾					1.5
King County Industrial Allocation (Through January 2007)					0.5
King County Discharge Criteria⁽⁷⁾					5.3

NOTES:

Sample analyses conducted by Friedman & Bruya, Inc. of Seattle, Washington; Severn Trent Laboratories of Fife, Washington; TestAmerica, Inc. of Bothell, Washington; or Pace Analytical Services, Inc., of Minneapolis, Minnesota.

Carbon replaced on September 17, 2008 in carbon vessels GAC1, GAC2, GAC3, and GAC4.

⁽¹⁾From Daily Climate Reports for National Weather Service Seattle Weather Forecast Office at <http://www.weather.gov/climate/index.php?wfo=sew>.

⁽²⁾Analyzed by EPA Method 8270C-SIM, 8270D-SIM, or 8151A.

⁽³⁾Laboratory reportedly misidentified GAC0 influent sample with GAC1 treated sample. Data likely not representative of untreated water.

⁽⁴⁾Laboratory reportedly misidentified GAC1 treated sample with GAC0 influent sample. Data likely not representative of treated water.

⁽⁵⁾Sample turbid, attributed to lack of rainfall.

⁽⁶⁾MTCA Cleanup Regulation, Chapter 173-340 of Washington Administrative Code, CLARC, Surface Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁷⁾King County Discharge Criteria Instantaneous Maximum in accordance with Waste Discharge Permit No. 7689.

Laboratory Notes:

[#]The relative percent difference result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

[†]The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

-- = not applicable

< = not detected at a concentration exceeding the laboratory reporting limit

µg/L = micrograms per liter

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

GAC = granular-activated carbon

MTCA = Washington State Model Toxics Control Act

OWS = oil/water separator

PCP = pentachlorophenol

T = No rainfall data



Table 24
Summary of Analytical Results for Oil-Water Separator Effluent Samples
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Date Sampled	Analytical Results							
		PCP ⁽¹⁾ (µg/L)	2,3,7,8 - TCDD ⁽²⁾ (pg/L)	FOG ⁽³⁾ (µg/L)	Benzene ⁽⁴⁾ (µg/L)	Toluene ⁽⁴⁾ (µg/L)	Ethylbenzene ⁽⁴⁾ (µg/L)	Total Xylenes ⁽⁴⁾ (µg/L)	pH ⁽⁵⁾
OWS-20060327	03/27/06	1.84	--	<4,850	<0.500	0.610	<0.500	<3.00	7.25
OWS-20060404	04/04/06	3.46	--	--	--	--	--	--	--
OWS-20060404	04/04/06	3	--	--	--	--	--	--	--
OWS-20060810	08/10/06	<0.476	<11.0	--	--	--	--	--	--
OWS-20061229	12/29/06	0.053	--	<5,000	<1	<1	<1	<3	7.3
OWS-20070226	02/26/07	0.043	--	--	--	--	--	--	--
OWS-20070319	03/19/07	<0.10	--	<4,800	<1.0	<1.0	0.15	1.59	6.56
GAC4-20070628	06/28/07	<0.10	--	--	--	--	--	--	--
OWS-20070710	07/10/07	<0.10	--	<5,000	<1	<1	<1	<3	6.40
OWS-20070731	07/31/07	--	--	<4,900	--	--	--	--	--
OWS-20070806	08/06/07	--	--	<4,800	<1	<1	<1	<3	6.73
OWS-20070904	09/04/07	--	--	5,200	1.7	<1.0	<1.0	<3.0	6.55
OWS-20071211	12/11/07	--	--	<4,800	<1.0	<1.0	<1.0	<3.0	7.28
GAC4-20080207	02/07/08	<0.5	0.2	--	--	--	--	--	--
OWS-20080331	03/31/08	--	--	<2,000	<1.0	<1.0	<1.0	<3.0	6.59
OWS-20080623	06/23/08	--	--	<2,000	1.0	<1.0	<1.0	<3.0	6.80
OWS-20080930	09/30/08	--	--	<2,000	<1	<1	<1	<3	9.29
GAC2-20080930	09/30/08	<0.5	--	--	--	--	--	--	--
OWS-20081211	12/11/08	--	--	<2,000	<1	<1	<1	<3	7.32
OWS-20090312	03/12/09	--	--	<2,000	<1	<1	<1	<3	7.46
OWS-20090605	06/05/09	--	--	<2,000	<1	<1	<1	<3	7.32
OWS-20090923	09/23/09	--	--	<2,000	<1	<1	<1	<3	6.75
OWS-20091215	12/15/09	--	--	<2,000	<1	<1	<1	<3	6.86
OWS-20100315	03/15/10	--	--	<2,000	<1	<1	<1	<3	6.90
OWS-20100614	06/14/10	--	--	<3,000	<1	<1	<1	<3	7.11
OWS-20100913	09/13/10	--	--	<3,000	<1	<1	<1	<3	5.88
OWS-20101213	12/13/10	--	--	<3,000	<1	<1	<1	<3	6.27
OWS-20110315	03/15/11	--	--	<3,000	<1	<1	<1	<3	6.76
OWS-20110613	06/13/11	--	--	<3,000	<1	<1	<1	<3	6.01
OWS-20110912	09/12/11	--	--	<3,000	<1	<1	<1	<3	5.68
OWS-20111216	12/16/11	--	--	<3,000	<1	<1	<1	<3	5.30
OWS-20120313	03/13/12	--	--	<3,000	<1	<1	<1	<3	6.43
OWS-20120611	06/11/12	--	--	<3,000	<1	<1	<1	<3	6.38
Discharge-20121010	10/10/12	<0.5	--	<3,000	<1	<1	<1	<3	6.15
Discharge-20121210	12/10/12	<0.5	--	<3,000	<1	<1	<1	<3	7.15
MTCA Method B Cleanup Level for Groundwater		0.22⁽⁶⁾	NE	NE	0.8⁽⁶⁾	640⁽⁷⁾	800⁽⁷⁾	16,000⁽⁷⁾	NE
MTCA Method B Cleanup Level for Surface Water		1.5⁽⁸⁾	NE	NE	23⁽⁸⁾	19,000⁽⁹⁾	6,900⁽⁹⁾	NE	NE
King County Discharge Criteria⁽¹⁰⁾		5.3⁽¹¹⁾	NE	100,000⁽¹²⁾	70⁽¹¹⁾	1,400⁽¹¹⁾	1,700⁽¹¹⁾	2,200	5 < pH < 10

NOTES:

Sample analyses conducted by Friedman & Bruya, Inc. of Seattle, Washington; Severn Trent Laboratories of Fife, Washington; TestAmerica, Inc. of Bothell, Washington; or Pace Analytical Services, Inc., of Minneapolis, Minnesota.

⁽¹⁾Analyzed by EPA Method 8270C-SIM or 8270D-SIM.

⁽²⁾Analyzed by EPA Method 1613B.

⁽³⁾Analyzed by EPA Method 1664A or 1664.

⁽⁴⁾Analyzed by EPA Method 8260B or 8021B.

⁽⁵⁾Analyzed by EPA Method 150.1 or 9040C.

⁽⁶⁾MTCA Cleanup Regulation, CLARC, Ground Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁷⁾MTCA Cleanup Regulation, CLARC, Ground Water, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁸⁾MTCA Cleanup Regulation, CLARC, Surface Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁹⁾MTCA Cleanup Regulation, CLARC, Surface Water, Method B, Non-Carcinogen (d), Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽¹⁰⁾King County Discharge Criteria in accordance with Waste Discharge Permit No. 7689.

⁽¹¹⁾Instantaneous maximum limit.

⁽¹²⁾Daily average limit.

-- = not analyzed

< = not detected at concentration exceeding the laboratory reporting limit

µg/L = micrograms per liter

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

FOG = fats, oils, and greases

MTCA = Washington State Model Toxics Control Act

NE = not established

PCP = pentachlorophenol

pg/L = picograms per liter

TCDD = tetrachlorodibenzo-p-dioxin



Table 25
Summary of Stormwater Analytical Results
for Dioxin and Furan Congeners
Pre-Treatment System
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Dioxin and Furan Congener(s) ⁽¹⁾	TEF ⁽²⁾	Stormwater Sample Identification Numbers					
		INFL-20080207		GAC0-20080207		GAC4-20080207	
		Influent, Pre-Oil-Water Separator		Post Bag Filtration and Pre-GAC		Following 2nd GAC (Effluent)	
		Reported (pg/L)	Corrected for TEF (pg/L)	Reported (pg/L)	Corrected for TEF (pg/L)	Reported (pg/L)	Corrected for TEF (pg/L)
2,3,7,8 TCDD	1	<10	--	<10	--	<10	--
Total TCDD	--	<10	--	<10	--	<10	--
2,3,7,8 TCDF	0.1	<10	--	<10	--	<10	--
Total TCDF	--	27	--	<10	--	<10	--
1,2,3,7,8 PeCDD	1	88	88	<50	--	<50	--
Total PeCDD	--	140	--	<50	--	<50	--
1,2,3,7,8 PeCDF	0.03	<50	--	<50	--	<50	--
2,3,4,7,8 PeCDF	0.3	<50	--	<50	--	<50	--
Total PeCDF	--	210	--	<50	--	<50	--
1,2,3,4,7,8 HxCDD	0.1	170	17	<50	--	<50	--
1,2,3,6,7,8 HxCDD	0.1	430	43	<50	--	<50	--
1,2,3,7,8,9 HxCDD	0.1	350	35	<50	--	<50	--
Total HxCDD	--	2300	--	<50	--	<50	--
1,2,3,4,7,8 HxCDF	0.1	<50	--	<50	--	<50	--
1,2,3,6,7,8 HxCDF	0.1	<50	--	<50	--	<50	--
1,2,3,7,8,9 HxCDF	0.1	69.0	6.9	<50	--	<50	--
2,3,4,6,7,8 HxCDF	0.1	<50	--	<50	--	<50	--
Total HxCDF	--	1,400	--	<50	--	<50	--
1,2,3,4,6,7,8 HpCDD	0.01	13,000	130	77	0.77	<50	--
Total HpCDD	--	22,000	--	140	--	<50	--
1,2,3,4,6,7,8 HpCDF	0.01	2,000	20	<50	--	<50	--
1,2,3,4,7,8,9 HpCDF	0.01	100	1	<50	--	<50	--
Total HpCDF	--	7,300	--	<50	--	<50	--
OCDD	0.0003	12,000	3.6	750	0.225	210	0.063
OCDF	0.0003	180,000	54	<100	--	<100	--
Total 2,3,7,8 TCDD Equivalence (pg/L)		398.5		0.995		0.063	
Pentachlorophenol⁽³⁾(micrograms per liter)		--		0.74		<0.5	

NOTES:

Sample analyses performed by Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾ Analyzed by EPA Method 1613B.

⁽²⁾ Washington State Model Toxics Control Act Cleanup Regulation, Chapter 173-340-900 of the Washington Administrative Code, Table 708-1, *Toxicity Equivalency Factors for Chlorinated dibenzo-p-dioxins and Chlorinated Dibenzofurans Congeners*.

⁽³⁾ Analyzed by EPA Method 8270C SIM.

-- = not measured / not analyzed

< = not detected at concentration above the laboratory reporting limit
 pg/L = picograms per liter

EPA = U.S. Environmental Protection Agency

GAC = granular-activated carbon

HpCDD = heptachlorodibenzo-p-dioxin

HpCDF = heptachlorodibenzofuran

HxCDD = hexachlorodibenzo-p-dioxin

HxCDF = hexachlorodibenzofuran

OCDD = octachlorodibenzo-p-dioxin

OCDF = octachlorodibenzofuran

PeCDD = pentachlorodibenzo-p-dioxin

PeCDF = pentachlorodibenzofuran

TCDD = tetrachlorodibenzo-p-dioxin

TCDF = tetrachlorodibenzofuran

TEF = Toxicity Equivalency Factor



Table 26
Groundwater Analytical Results for the Pretreatment System
TOC Holdings Co. Facility No. 01-600
Seattle Terminal Properties
Seattle, Washington

Sample ID	Date Sampled	Analytical Results (micrograms per liter)										
		PCP ⁽¹⁾	TCE ⁽²⁾	FOG ⁽³⁾ (mg/L)	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	GRPH ⁽⁵⁾	DRPH ⁽⁶⁾	ORPH ⁽⁶⁾	pH ⁽⁷⁾
T2-EFF-GRAB-20101202	12/02/10	<0.5	--	<3 ^{vo}	<1	<1	<1	<3	--	--	--	7.77
T2-EFF-GRAB-20110118	01/18/11	<0.5	--	<3 ^{vo}	<1	<1	<1	<3	<100	--	--	7.38
T2-EFF-GRAB-20110126	01/26/11	<0.5	<1	<3	<1	<1	<1	<3	<100	--	--	7.57
T2-EFF-GRAB-20110131	01/31/11	<0.5	<1	<3	<1	<1	<1	<3	--	--	--	7.58
T2-EFF-GRAB-20110207	02/07/11	<0.5 ^{vo}	<1	<3	<1	<1	<1	<3	<100	<50	<250	7.73
T2-EFF-GRAB-20110211	02/11/11	<0.5 ^{vo}	<1	<3	<1	<1	<1	<3	--	--	--	7.98
T2-EFF-GRAB-20110216	02/16/11	<0.5	<1	<3	<1	<1	<1	<3	<100	<50	<250	7.76
T2-EFF-GRAB-20110315	03/15/11	<0.5	<1	<3	<1	<1	<1	<3	<100	380	<250	7.70
T2-EFF-GRAB-20110506	05/06/11	<0.219	<1	<3	<1	<1	<1	<3	<100	<50	<250	7.14
MTCA Method B Cleanup Levels for Groundwater		0.22⁽⁸⁾	0.49⁽⁸⁾	NE	0.8⁽⁸⁾	640⁽⁹⁾	800⁽⁹⁾	16,000⁽⁹⁾	NE	NE	NE	NE
MTCA Method B Cleanup Levels for Surface Water		1.5⁽¹⁰⁾	6.7⁽¹⁰⁾	NE	23⁽¹⁰⁾	19,000⁽¹¹⁾	6,900⁽¹¹⁾	NE	NE	NE	NE	NE
King County Discharge Criteria⁽¹²⁾		5.3⁽¹³⁾	NE	100,000⁽¹⁴⁾	70⁽¹³⁾	1,400⁽¹³⁾	1,700⁽¹³⁾	2,200	NE	NE	NE	5 < pH < 12

NOTES:

Sample analyses performed by Friedman & Bruya, Inc. of Seattle, Washington.

⁽¹⁾ Analyzed by EPA Method 8270D-SIM.

⁽²⁾ Analyzed by EPA Method 8260C.

⁽³⁾ Analyzed by EPA Method 1664.

⁽⁴⁾ Analyzed by EPA Method 8021B.

⁽⁵⁾ Analyzed by Method NWTPH-Gx.

⁽⁶⁾ Analyzed by Method NWTPH-Dx with silica gel cleanup.

⁽⁷⁾ Analyzed by EPA Method 9040C.

⁽⁸⁾ MTCA Cleanup Regulation, CLARC, Ground Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽⁹⁾ MTCA Cleanup Regulation, CLARC, Ground Water, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽¹⁰⁾ MTCA Cleanup Regulation, CLARC, Surface Water, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽¹¹⁾ MTCA Cleanup Regulation, CLARC, Surface Water, Method B, Non-Carcinogen (d), Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>.

⁽¹²⁾ King County Discharge Criteria Instantaneous Maximum in accordance with Waste Discharge Permit No. 7689.

⁽¹³⁾ Instantaneous maximum limit.

⁽¹⁴⁾ Daily average limit.

Laboratory Note:

^{vo}The laboratory control sample and laboratory control sample duplicate failed the relative percent difference for pentachlorophenol. The analyte was not detected therefore the data were acceptable.

-- = not analyzed

< = not detected at concentration exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

DRPH = diesel-range petroleum hydrocarbon

EPA = United States Environmental Protection Agency

FOG = fats, oils, and grease

GRPH = gasoline-range petroleum hydrocarbon

mg/L = milligrams per liter

MTCA = Washington State Model Toxics Control Act

NE = not established

NWTPH = northwest total petroleum hydrocarbon

ORPH = oil-range petroleum hydrocarbon

PCP = pentachlorophenol

TCE = trichloroethylene



Table 27
Soil Analytical Results for VOCs
Interim Remedial Actions
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
2737 West Commodore Way
Seattle, Washington

Interim Remedial Action Location	Soil Sample ID	Sample Location	Sampled By	Date Sampled	Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)																	
						Tetrachloroethene	Trichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride	Acetone	Isopropylbenzene	Naphthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	2-Butanone	
Bulk Terminal Property																							
Former Vapor Knockout UST	VK-B-12	Base of Excavation	SoundEarth	04/22/06	12	<0.00185	<0.00231	<0.00277	<0.00231	<0.00277	<0.00461	<0.00461	<0.00231	0.0311	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.0138	
	VK-E-10	East Sidewall			10	<0.00296	<0.00370	<0.00444	<0.00370	<0.00444	<0.00740	<0.00740	<0.00370	<0.0444	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.00740	<0.0222
	VK-W-10	West Sidewall			10	<0.00252	<0.00314	<0.00377	<0.00314	<0.00377	<0.00629	<0.00629	<0.00314	0.204	1.28	<0.00629	2.46	3.42	0.185	1.33	0.0146	<0.0189	
MTCA Cleanup Level for Soil						0.05⁽²⁾	0.03⁽²⁾	160⁽³⁾	1,600⁽³⁾	4,000⁽³⁾	NE	800⁽³⁾	0.67⁽⁴⁾	72,000⁽³⁾	8,000⁽³⁾	5⁽²⁾	NE	NE	NE	NE	NE	48,000⁽³⁾	

NOTES:

⁽¹⁾Samples analyzed by EPA Method 8260B.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of the Washington Administrative Code, Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses.

⁽³⁾MTCA Cleanup Regulation, CLARC, Soil, MTCA Method B, Non-Carcinogen, Standard Formula Value, Unrestricted Land Use, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

⁽⁴⁾MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Soil, Method B, Carcinogen, Standard Formula Value, CLARC Website <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>.

< = not detected at a concentration exceeding the laboratory reporting limit
 bgs = below ground surface
 CLARC = Cleanup Levels and Risk Calculations
 EPA = U.S. Environmental Protection Agency
 MTCA = Washington State Model Toxics Control Act
 NE = not established
 SoundEarth = SoundEarth Strategies, Inc.
 UST = underground storage tank
 VOC = volatile organic compound
 WAC = Washington Administrative Code



Table 28
TEFs for 17 Carcinogenic Dioxin Congeners
TOC Holdings Co. Facility No. 01-600
Bulk Terminal Property
Seattle, Washington

Hazardous Substance	TEF ⁽¹⁾ (unitless)
2,3,7,8-Tetrachloro dibenzo-p-dioxin	1
1,2,3,7,8-Pentachloro dibenzo-p-dioxin	1
1,2,3,4,7,8-Hexachloro dibenzo-p-dioxin	0.1
1,2,3,6,7,8-Hexachloro dibenzo-p-dioxin	0.1
1,2,3,7,8,9-Hexachloro dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-Heptachloro dibenzo-p-dioxin	0.01
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	0.0003
2,3,7,8-Tetrachloro dibenzofuran	0.1
1,2,3,7,8-Pentachloro dibenzofuran	0.03
2,3,4,7,8-Pentachloro dibenzofuran	0.3
1,2,3,4,7,8-Hexachloro dibenzofuran	0.1
1,2,3,6,7,8-Hexachloro dibenzofuran	0.1
1,2,3,7,8,9-Hexachloro dibenzofuran	0.1
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-Heptachloro dibenzofuran	0.01
1,2,3,4,7,8,9-Heptachloro dibenzofuran	0.01
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	0.0003

NOTES:

⁽¹⁾ MTCA Cleanup Regulation, Chapter 173-340-900 of the Washington Administrative Code, Table 708-1, Toxicity Equivalency Factors for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Congeners.

Dioxins = polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans

MTCA = Washington State Model Toxics Control Act

TEF = toxicity equivalency factors